



# 电子元器件系列

*www.rf-china.com* RF-Micom co.,Ltd

**EMail:sales@rf-china.com**

**Sale Phone:86-592-5713956**

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## A RF Transistor Library Data

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## Motorola MOSFETs

The Motorola MOSFETs include 4 components, representing individual parts. The naming convention for these components is *mf\_mot\_\_<part number>\_<extraction date>*.

[Table B-1. Motorola MOSFETs](#)

## M/A-Com MOSFETs

The M/A-Com MOSFETs include 9 components, representing individual parts. The naming convention for these components is *mf\_phi\_\_<part number>\_<extraction date>*.

[Table B-2. M/A-Com MOSFETs](#)

## PolyFet MOSFETs

The PolyFet MOSFETs include 4 components, representing individual parts. The naming convention for these components is *mf\_ply\_\_<part number>\_<extraction date>*.

[Table B-3. PolyFet MOSFETs](#)

## Packaged BJTs

The Packaged BJTs consist of nonlinear models representing 661 parts from 9 manufacturers. The BJTs available for selection from the Schematic window are:

- Bipolarics Packaged BJTs
- Hitachi Packaged BJTs
- Agilent Technologies Packaged BJTs
- Motorola Packaged BJTs
- NEC Packaged BJTs
- Panasonic Packaged BJTs
- Philips Packaged BJTs
- Siemens Packaged BJTs

Table C-2. Bipolarics Packaged BJTs

Hitachi Packaged BJTs

The Hitachi Packaged BJTs include 3 components, representing individual parts. The naming convention for these components is *pb\_hit\_<part number>\_<extraction date>*.

Table C-3. Hitachi Packaged BJTs

Motorola Packaged BJTs

The Motorola Packaged BJTs include 97 components, representing individual parts. The naming convention for these components is *pb\_mot\_<part number>\_<extraction date>*.

Table C-4. Motorola Packaged BJTs

NEC Packaged BJTs

The NEC Packaged BJTs include 143 components, representing individual parts. Of these, 66 components represent devices that have both CEL and EIAJ part designations. Two components represent CEL parts with no corresponding EIAJ designation. One component represents an EIAJ-numbered part with no CEL designation. The naming convention for these components is *pb\_nec\_<part number>\_<extraction date>*.

CEL part numbers with an E suffix designate a common-emitter package configuration, as opposed to common-base (B suffix) versions of the same transistor available from CEL under the same part number.

Table C-5. NEC Packaged BJTs

Panasonic Packaged BJTs

The Panasonic Packaged BJTs include 13 components, representing individual parts. The naming convention for these components is *pb\_pan\_<part number>\_<extraction date>*.

Table C-6. Panasonic Packaged BJTs

# Philips Packaged BJTs

The Philips Packaged BJTs include 66 components, representing individual parts. The naming convention for these components is *pb\_phl\_<part number>\_<extraction date>*.

[Table D-1. Philips Packaged BJTs](#)

# Siemens Packaged BJTs

The Siemens Packaged BJTs include 283 components, representing individual parts. The naming convention for these components is *pb\_sms\_<part number>\_<extraction date>*.

[Table D-2. Siemens Packaged BJTs](#)

# Toshiba Packaged BJTs

The Toshiba Packaged BJTs include 13 components, representing individual parts. The naming convention for these components is *pb\_tsb\_<part number>\_<extraction date>*.

[Table D-3. Toshiba Packaged BJTs](#)

# Appendix A: RF Transistor Library Data

Table A-1. Fujitsu Packaged FETs

| Component Name           | Physical Specification |         |            |        |                  |                  | Maximum Electrical Specification |       | Typical Electrical Specification |         |       |
|--------------------------|------------------------|---------|------------|--------|------------------|------------------|----------------------------------|-------|----------------------------------|---------|-------|
|                          | Part Number            | Package | Term. Type | Model  | Gw $\mu\text{m}$ | Gi $\mu\text{m}$ | Pdiss mW                         | Vbr V | Vds V                            | Idss mA | Vt V  |
| pf_fuj_FLL101ME_19931021 | FLL101ME               | ME      | 3          | eefet3 | na               | na               | 4160                             | 19    | 10                               | 370.89  | -2.71 |
| pf_fuj_FLL351ME_19931021 | FLL351ME               | ME      | 3          | eefet3 | na               | na               | 15000                            | 19    | 10                               | 1279.64 | -2.21 |
| na = not available       |                        |         |            |        |                  |                  |                                  |       |                                  |         |       |

Table A-2. Agilent Technologies Packaged FETs

| Component Name          | Physical Specification |         |            |        |                  |                  | Maximum Electrical Specification |       | Typical Electrical Specification |         |       |
|-------------------------|------------------------|---------|------------|--------|------------------|------------------|----------------------------------|-------|----------------------------------|---------|-------|
|                         | Part Number            | Package | Term. Type | Model  | Gw $\mu\text{m}$ | Gi $\mu\text{m}$ | Pdiss mW                         | Vbr V | Vds V                            | Idss mA | Vt V  |
| pf_hp_ATF13136_19931014 | ATF13136               | ATF36   | 4          | eefet3 | 250              | 0.3              | 225                              | 7     | 4                                | 46.37   | -1.4  |
| pf_hp_ATF13284_19931014 | ATF13284               | ATF84   | 4          | eefet3 | 250              | 0.3              | 225                              | 7     | 4                                | 29.47   | -1.44 |
| pf_hp_ATF13786_19931015 | ATF13786               | ATF86   | 4          | eefet3 | 250              | 0.3              | 225                              | 6     | 3                                | 60.66   | -1.55 |
| pf_hp_ATF21170_19931015 | ATF21170               | ATF70   | 4          | eefet3 | 750              | 0.3              | 600                              | 9     | 5                                | 97.42   | -1.24 |
| pf_hp_ATF26884_19931015 | ATF26884               | ATF84   | 4          | eefet3 | 250              | 0.3              | 275                              | 7.5   | 5                                | 41.28   | -1.88 |

Table A-3. Microwave Technology Packaged FETs

| Component Name             | Physical Specification |         |            |        |                  |                  | Maximum Electrical Specification |       | Typical Electrical Specification |         |       |
|----------------------------|------------------------|---------|------------|--------|------------------|------------------|----------------------------------|-------|----------------------------------|---------|-------|
|                            | Part Number            | Package | Term. Type | Model  | Gw $\mu\text{m}$ | Gi $\mu\text{m}$ | Pdiss mW                         | Vbr V | Vds V                            | Idss mA | Vt V  |
| pf_mwt_MWT_1171HP_19931020 | MWT-1171HP             | MWT71   | 3          | eefet3 | 2400             | 0.3              | 5000                             | 15    | 6                                | 630.62  | -2.45 |
| pf_mwt_MWT_170_19931015    | MWT-170                | MWT70   | 4          | eefet3 | 630              | 0.3              | 1200                             | 8     | 6                                | 163.96  | -2.61 |
| pf_mwt_MWT_270_19931015    | MWT-270                | MWT70   | 4          | eefet3 | 630              | 0.3              | 1500                             | 11    | 6                                | 156.46  | -2.45 |
| pf_mwt_MWT_370HP_19931015  | MWT-370HP              | MWT70   | 4          | eefet3 | 300              | 0.3              | 750                              | 11    | 6                                | 83.58   | -2.63 |
| pf_mwt_MWT_470LN_19931015  | MWT-470LN              | MWT70   | 4          | eefet3 | 180              | 0.3              | 360                              | 8     | 4.5                              | 38.43   | -1.76 |
| pf_mwt_MWT_671HP_19931015  | MWT-671HP              | MWT71   | 3          | eefet3 | 900              | 0.3              | 2250                             | 15    | 6                                | 273.37  | -3.74 |

Table A-3. Microwave Technology Packaged FETs (continued)

| Component Name            | Physical Specification |         |            |        |                  |                  | Maximum Electrical Specification |       | Typical Electrical Specification |         |       |
|---------------------------|------------------------|---------|------------|--------|------------------|------------------|----------------------------------|-------|----------------------------------|---------|-------|
|                           | Part Number            | Package | Term. Type | Model  | Gw $\mu\text{m}$ | Gi $\mu\text{m}$ | Pdiss mW                         | Vbr V | Vds V                            | Idss mA | Vt V  |
| pf_mwt_MWT_770HP_19931015 | MWT-770HP              | MWT70   | 4          | eefet3 | 250              | 0.3              | 600                              | 8.5   | 4                                | 80.18   | -2.13 |
| pf_mwt_MWT_770LN_19931020 | MWT-770LN              | MWT70   | 4          | eefet3 | 250              | 0.3              | 600                              | 7     | 4                                | 61.81   | -1.98 |
| pf_mwt_MWT_773HP_19931015 | MWT-773HP              | MWT73   | 3          | eefet3 | 250              | 0.3              | 600                              | 15    | 6                                | 81.66   | -2.06 |
| pf_mwt_MWT_871HP_19931015 | MWT-871HP              | MWT71   | 3          | eefet3 | 1200             | 0.3              | 3000                             | 15    | 6                                | 280.63  | -3.07 |
| pf_mwt_MWT_971_19931020   | MWT-971                | MWT71   | 3          | eefet3 | 750              | 0.3              | 1750                             | 11    | 6                                | 198.63  | -2.68 |

Table A-4. Mitsubishi Packaged FETs

| Component Name           | Physical Specification |         |            |        |                  |                  | Maximum Electrical Specification |       | Typical Electrical Specification |         |       |
|--------------------------|------------------------|---------|------------|--------|------------------|------------------|----------------------------------|-------|----------------------------------|---------|-------|
|                          | Part Number            | Package | Term. Type | Model  | Gw $\mu\text{m}$ | Gi $\mu\text{m}$ | Pdiss mW                         | Vbr V | Vds V                            | Idss mA | Vt V  |
| pf_mit_MGF0904A_19931015 | MGF0904A               | GF7     | 3          | eefet3 | na               | na               | 3750                             | 18    | 8                                | 542.76  | -3.31 |
| pf_mit_MGF0905A_19931019 | MGF0905A               | GF7     | 3          | eefet3 | na               | na               | 21500                            | 17    | 8                                | 2299.21 | -2.52 |
| pf_mit_MGF0906A_19931019 | MGF0906A               | GF21    | 3          | eefet3 | na               | na               | 23000                            | 21    | 10                               | 2786.99 | -4.15 |
| pf_mit_MGF1302_19921216  | MGF1302                | GD4     | 4          | eefet3 | 400              | 0.8              | 360                              | 5     | 3                                | 45.51   | -0.97 |
| pf_mit_MGF1303B_19921216 | MGF1303B               | GD4     | 4          | eefet3 | 300              | 0.5              | 240                              | 5     | 3                                | 61.62   | -1.63 |
| pf_mit_MGF1304A_19921216 | MGF1304A               | GD4     | 4          | eefet3 | 300              | 0.5              | 200                              | 5     | 3                                | 24.92   | -0.71 |
| pf_mit_MGF1305_19921216  | MGF1305                | GD4     | 4          | eefet3 | 300              | 0.4              | 200                              | 5     | 3                                | 36.52   | -1.08 |
| pf_mit_MGF1402_19921216  | MGF1402                | GD9     | 4          | eefet3 | 400              | 0.8              | 360                              | 5     | 3                                | 64.83   | -1.35 |
| pf_mit_MGF1403_19921216  | MGF1403                | GD9     | 4          | eefet3 | 300              | 0.5              | 240                              | 5     | 3                                | 55.78   | -1.24 |
| pf_mit_MGF1412_19931022  | MGF1412                | GD9     | 4          | eefet3 | 400              | 0.7              | 360                              | 5     | 3                                | 81.65   | -1.52 |
| pf_mit_MGF1423_19931015  | MGF1423                | GD9     | 4          | eefet3 | 300              | 0.5              | 240                              | 6     | 3                                | 68.16   | -1.91 |
| pf_mit_MGF1425_19921216  | MGF1425                | GD9     | 4          | eefet3 | 250              | 0.4              | 200                              | 5     | 3                                | 39.81   | -1.09 |
| pf_mit_MGF1801_19931015  | MGF1801                | GD11    | 4          | eefet3 | 800              | 0.8              | 1200                             | 11    | 3                                | 212.83  | -2.73 |
| pf_mit_MGF1902B_19921216 | MGF1902B               | GD7     | 4          | eefet3 | 400              | 0.8              | 360                              | 15    | 8                                | 49.47   | -1.12 |
| pf_mit_MGF1903B_19931018 | MGF1903B               | GD7     | 4          | eefet3 | 300              | 0.5              | 240                              | 15    | 8                                | 40.73   | -1.4  |
| pf_mit_MGF2148_19931019  | MGF2148                | GF4     | 4          | eefet3 | 750              | 0.6              | 10000                            | 17    | 3                                | 1290.24 | -3.83 |
| pf_mit_MGF2407A_19931018 | MGF2407A               | GF1     | 3          | eefet3 | 750              | 0.7              | 1500                             | 19    | 3                                | 178.68  | -3.06 |
| pf_mit_MGF2415A_19931015 | MGF2415A               | GF1     | 3          | eefet3 | 1500             | 0.6              | 2500                             | 19    | 3                                | 353.51  | -3.17 |
| pf_mit_MGF2430A_19931015 | MGF2430A               | GF1     | 3          | eefet3 | 3000             | 0.6              | 5000                             | 19    | 3                                | 601.86  | -2.54 |
| na = not available       |                        |         |            |        |                  |                  |                                  |       |                                  |         |       |

Table A-5. NEC Packaged FETs

| Component Name            | Physical Specification |         |            |        |                  |                  | Maximum Electrical Specification |       | Typical Electrical Specification |         |       |
|---------------------------|------------------------|---------|------------|--------|------------------|------------------|----------------------------------|-------|----------------------------------|---------|-------|
|                           | Part Number            | Package | Term. Type | Mode I | Gw $\mu\text{m}$ | Gi $\mu\text{m}$ | Pdiss mW                         | Vbr V | Vds V                            | Idss mA | Vt V  |
| pf_nec_2SK354A_19921216   | 2SK354A                | NEC89   | 4          | eefet3 | 400              | 1                | 300                              | 5     | 3                                | 46.48   | -1.27 |
| pf_nec_2SK406_19931022    | 2SK406                 | NEC83   | 4          | eefet3 | 300              | 0.5              | 270                              | 5     | 3                                | 60.34   | -1.4  |
| pf_nec_2SK407_19921216    | 2SK407                 | NEC84   | 4          | eefet3 | 300              | 0.5              | 270                              | 5     | 3                                | 24.58   | -0.77 |
| pf_nec_2SK571_19921216    | 2SK571                 | NEC84   | 4          | eefet3 | 400              | 1                | 300                              | 5     | 3                                | 68.06   | -1.86 |
| pf_nec_2SK609_19921216    | 2SK609:                | NEC84   | 4          | eefet3 | 300              | 0.5              | 270                              | 5     | 3                                | 58.26   | -1.43 |
| pf_nec_NE67383_19921216   | NE67383                | NEC83   | 4          | eefet3 | 300              | 0.5              | 270                              | 5     | 3                                | 24.58   | -0.77 |
| pf_nec_NE71083_19931022   | NE71083                | NEC83   | 4          | eefet3 | 300              | 0.5              | 270                              | 5     | 3                                | 60.34   | -1.4  |
| pf_nec_NE71084_19921216   | NE71084                | NEC84   | 4          | eefet3 | 300              | 0.5              | 270                              | 5     | 3                                | 58.26   | -1.43 |
| pf_nec_NE72084_19921216   | NE72084                | NEC84   | 4          | eefet3 | 400              | 1                | 300                              | 5     | 3                                | 68.06   | -1.86 |
| pf_nec_NE72089A_19921216  | NE72089A               | NEC89A  | 4          | eefet3 | 400              | 1                | 300                              | 5     | 3                                | 46.48   | -1.27 |
| pf_nec_NE76038_19921216   | NE76038                | NEC38   | 4          | eefet3 | 280              | 0.3              | 240                              | 7.5   | 3                                | 27.38   | -0.9  |
| pf_nec_NE76084_19921216   | NE76084                | NEC84   | 4          | eefet3 | 280              | 0.3              | 240                              | 7.5   | 3                                | 25.5    | -0.8  |
| pf_nec_NE76184A_19921216  | NE76184A               | NEC84A  | 4          | eefet3 | na               | na               | 300                              | 4.5   | 3                                | 68.24   | -1.36 |
| pf_nec_NE900075_19931018  | NE900075               | NEC75   | 3          | eefet3 | 400              | 0.5              | 800                              | 15    | 8                                | 102.64  | -3.28 |
| pf_nec_NE900089A_19931018 | NE900089A              | NEC89A  | 4          | eefet3 | 400              | 0.5              | 800                              | 13    | 8                                | 128.22  | -3.79 |
| pf_nec_NE900175_19931018  | NE900175               | NEC75   | 3          | eefet3 | 750              | 0.5              | 1500                             | 18    | 8                                | 230.64  | -3.5  |
| pf_nec_NE900275_19931018  | NE900275               | NEC75   | 3          | eefet3 | 1500             | 0.5              | 3000                             | 18    | 8                                | 385.32  | -3.1  |

Table A-6. Okidata Packaged FETs

| Component Name          | Physical Specification |         |            |        |                  |                  | Maximum Electrical Specification |       | Typical Electrical Specification |         |       |
|-------------------------|------------------------|---------|------------|--------|------------------|------------------|----------------------------------|-------|----------------------------------|---------|-------|
|                         | Part Number            | Package | Term. Type | Mode I | Gw $\mu\text{m}$ | Gi $\mu\text{m}$ | Pdiss mW                         | Vbr V | Vds V                            | Idss mA | Vt V  |
| pf_oki_KGF1305_19931020 | KGF1305                | OKI_1   | 3          | eefet3 | na               | na               | 3000                             | 9.8   | 5.4                              | 1469.99 | -3.16 |
| na = not available      |                        |         |            |        |                  |                  |                                  |       |                                  |         |       |

Table A-7. Siemens Packaged FETs

| Component Name           | Physical Specification |         |            |        |                  |                  |          | Maximum Electrical Specification | Typical Electrical Specification |         |       |
|--------------------------|------------------------|---------|------------|--------|------------------|------------------|----------|----------------------------------|----------------------------------|---------|-------|
|                          | Part Number            | Package | Term. Type | Model  | Gw $\mu\text{m}$ | Gi $\mu\text{m}$ | Pdiss mW | Vbr V                            | Vds V                            | Idss mA | Vt V  |
| pf_sms_CFY19_18_19921216 | CFY19-18               | CERECXF | 4          | eefet3 | na               | na               | 300      | 8                                | 3.5                              | 65.39   | -3.05 |
| pf_sms_CFY25_17_19921216 | CFY25-17               | CERECXF | 4          | eefet3 | na               | na               | 250      | 6.5                              | 3                                | 34.58   | -1.25 |
| pf_sms_CFY30_19931018    | CFY30                  | SOT143  | 3          | eefet3 | na               | na               | 250      | 7                                | 4                                | 37.64   | -2.86 |
| pf_sms_CFY35_20_19931018 | CFY35-20               | MW4     | 4          | eefet3 | na               | na               | 180      | 4                                | 2.5                              | 15.39   | -0.86 |
| pf_sms_CFY35_23_19931018 | CFY35-23               | MW4     | 4          | eefet3 | na               | na               | 180      | 7                                | 2.5                              | 21.01   | -1.03 |
| na = not available       |                        |         |            |        |                  |                  |          |                                  |                                  |         |       |

Table A-8. Toshiba Packaged FETs

| Component Name         | Physical Specification |         |            |        |                  |                  |          | Maximum Electrical Specification | Typical Electrical Specification |         |       |
|------------------------|------------------------|---------|------------|--------|------------------|------------------|----------|----------------------------------|----------------------------------|---------|-------|
|                        | Part Number            | Package | Term. Type | Model  | Gw $\mu\text{m}$ | Gi $\mu\text{m}$ | Pdiss mW | Vbr V                            | Vds V                            | Idss mA | Vt V  |
| pf_tsb_S8834_19931018  | S8834                  | 2D3H1A  | 3          | eefet3 | na               | na               | 1500     | 19                               | 10                               | 89.05   | -3.82 |
| pf_tsb_S8835B_19931018 | S8835                  | 2D3H1A  | 3          | eefet3 | na               | na               | 2500     | 17                               | 10                               | 193.5   | -4.07 |
| pf_tsb_S8835_19931018  | S8835B                 | 2D3H1A  | 3          | eefet3 | na               | na               | 2500     | 17                               | 10                               | 193.5   | -4.07 |
| pf_tsb_S8836A_19931018 | S8836A                 | 2D7C1A  | 3          | eefet3 | na               | na               | 5000     | 21                               | 10                               | 569.74  | -4.58 |
| pf_tsb_S8837A_19931021 | S8837A                 | 2D7C1A  | 3          | eefet3 | na               | na               | 7500     | 19                               | 10                               | 1090.19 | -3.79 |
| na = not available     |                        |         |            |        |                  |                  |          |                                  |                                  |         |       |

# Appendix B: RF Transistor Library Data

Table B-1. Motorola MOSFETs

| Component Name          | Physical Specification |          |            |        | Maximum Electrical Specification |       |      | Typical Electrical Specification |       |        |             |
|-------------------------|------------------------|----------|------------|--------|----------------------------------|-------|------|----------------------------------|-------|--------|-------------|
|                         | Part Number            | Package  | Term. Type | Model  | Pdiss W                          | Vbr V | Vt V | Vgs V                            | Vds V | Ids mA | Gm, peak mS |
| mf_mot_MRF134_19930106  | MRF134                 | C211D07  | 4          | eemos1 | 17.5                             | 65    | 3.14 | 6.7                              | 28    | 351.8  | 143         |
| mf_mot_MRF136Y_19930106 | MRF136Y                | C319BD01 | 5          | eemos1 | 100                              | 65    | 2.88 | 6.2                              | 28    | 962    | 424.3       |
| mf_mot_MRF136_19930106  | MRF136                 | C211D07  | 3          | eemos1 | 55                               | 65    | 2.88 | 6.2                              | 28    | 962    | 424.3       |
| mf_mot_MRF161_19930106  | MRF161                 | C244D04  | 3          | eemos1 | 17.5                             | 65    | 3.1  | 6.82                             | 28    | 368.8  | 143.8       |

Table B-2. M/A-Com MOSFETs

| Component Name          | Physical Specification |         |            |        | Maximum Electrical Specification |       |      | Typical Electrical Specification |       |        |             |
|-------------------------|------------------------|---------|------------|--------|----------------------------------|-------|------|----------------------------------|-------|--------|-------------|
|                         | Part Number            | Package | Term. Type | Model  | Pdiss W                          | Vbr V | Vt V | Vgs V                            | Vds V | Ids mA | Gm, peak mS |
| mf_phi_DU2805S_19930106 | DU2805S                | SFLANGE | 4          | eemos1 | 15.8                             | 65    | 4.8  | 7.44                             | 28    | 268.2  | 145.5       |
| mf_phi_DU2810S_19930106 | DU2810S                | SFLANGE | 3          | eemos1 | 35                               | 65    | 4.12 | 6.72                             | 28    | 582.2  | 325         |
| mf_phi_LF2802A_19930106 | LF2802A                | AFLANGE | 3          | eemos1 | 8                                | 65    | 4.06 | 7.22                             | 28    | 188.3  | 84.7        |
| mf_phi_LF2805A_19930106 | LF2805A                | AFLANGE | 3          | eemos1 | 14.4                             | 65    | 4.16 | 7.04                             | 28    | 293.2  | 146.3       |
| mf_phi_LF2810A_19930106 | LF2810A                | AFLANGE | 3          | eemos1 | 26.5                             | 65    | 4.14 | 6.98                             | 28    | 555.5  | 284.7       |
| mf_phi_UF2805B_19930106 | UF2805B                | BFLANGE | 3          | eemos1 | 14.4                             | 65    | 3.94 | 6.72                             | 28    | 296.1  | 153         |
| mf_phi_UF2810P_19930106 | UF2810P                | PFLANGE | 3          | eemos1 | 26.9                             | 65    | 4.24 | 7                                | 28    | 281.3  | 145.8       |
| mf_phi_UF2815B_19930106 | UF2815B                | BFLANGE | 3          | eemos1 | 48.6                             | 65    | 3.5  | 6.42                             | 28    | 874.4  | 433.9       |
| mf_phi_UF2820P_19930106 | UF2820P                | PFLANGE | 4          | eemos1 | 53                               | 65    | 4.58 | 7                                | 28    | 448.8  | 267.6       |

Table B-3. PolyFet MOSFETs

| Component Name        | Physical Specification |         |            |         | Maximum Electrical Specification |       |      | Typical Electrical Specification |       |        |             |
|-----------------------|------------------------|---------|------------|---------|----------------------------------|-------|------|----------------------------------|-------|--------|-------------|
|                       | Part Number            | Package | Term. Type | Model   | Pdiss W                          | Vbr V | Vt V | Vgs V                            | Vds V | Ids mA | Gm, peak mS |
| mf_ply_F2001_19930106 | F2001                  | AP      | 3          | eemos 1 | 20                               | 70    | 1.98 | 4.26                             | 28    | 383.3  | 239.7       |
| mf_ply_F2002_19930106 | F2002                  | AP      | 3          | eemos 1 | 30                               | 70    | 0.9  | 3.98                             | 28    | 680.9  | 321.8       |
| mf_ply_F2003_19930106 | F2003                  | AQ      | 5          | eemos 1 | 30                               | 70    | 1.98 | 4.26                             | 28    | 383.3  | 239.7       |
| mf_ply_F2004_19930106 | F2004                  | AK      | 5          | eemos 1 | 60                               | 70    | 0.9  | 3.98                             | 28    | 680.9  | 321.8       |

# Appendix C: RF Transistor Library Data

Table C-1. Agilent Technologies Packaged BJTs

| Component Name         | Physical Specification |          |            |        |           | Maximum Electrical Specification |       |       | Typical Electrical Specification |       |     |        |
|------------------------|------------------------|----------|------------|--------|-----------|----------------------------------|-------|-------|----------------------------------|-------|-----|--------|
|                        | Part Number            | Packag e | Term. Type | Model  | Polarit y | Pdiss mW                         | Vce V | Ic mA | Vce V                            | Ic mA | Hfe | Ft GHz |
| pb_hp_AT00510_19921101 | AT00510                | NEC07    | na         | bjt_gp | NPN       | na                               | na    | na    | na                               | na    | na  | na     |
| pb_hp_AT00511_19931202 | AT00511                | SOT143   | 4          | eebjt2 | NPN       | 230                              | 12    | 50    | 8                                | 15    | 150 | 7      |
| pb_hp_AT00535_19921101 | AT00535                | AVNK35   | 4          | bjt_gp | NPN       | na                               | na    | na    | na                               | na    | na  | na     |
| pb_hp_AT00570_19921101 | AT00570                | AVNK70   | 4          | bjt_gp | NPN       | na                               | na    | na    | na                               | na    | na  | na     |
| pb_hp_AT01610_19921101 | AT01610                | NEC07    | na         | bjt_gp | NPN       | na                               | na    | na    | na                               | na    | na  | na     |
| pb_hp_AT01635_19921101 | AT01635                | AVNK35   | 4          | bjt_gp | NPN       | na                               | na    | na    | na                               | na    | na  | na     |
| pb_hp_AT01670_19921101 | AT01670                | AVNK70   | 4          | bjt_gp | NPN       | na                               | na    | na    | na                               | na    | na  | na     |
| pb_hp_AT41410_19921101 | AT41410                | NEC07    | na         | bjt_gp | NPN       | na                               | na    | na    | na                               | na    | na  | na     |
| pb_hp_AT41411_19921101 | AT41411                | SOT143   | 4          | bjt_gp | NPN       | na                               | na    | na    | na                               | na    | na  | na     |
| pb_hp_AT41411_19931124 | AT41411                | SOT143   | 4          | eebjt2 | NPN       | 225                              | 12    | 50    | 8                                | 20    | 150 | 7      |
| pb_hp_AT41435_19911003 | AT41435                | AVNK35   | 4          | bjt_gp | NPN       | 500                              | 12    | 50    | 8                                | 20    | 150 | 8      |
| pb_hp_AT41435_19921101 | AT41435                | AVNK35   | 4          | eebjt2 | NPN       | 500                              | 12    | 60    | 8                                | 20    | 150 | 8      |
| pb_hp_AT41470_19921101 | AT41470                | AVNK70   | 4          | bjt_gp | NPN       | 500                              | 12    | 60    | 8                                | 25    | 150 | 8      |
| pb_hp_AT41470_19931202 | AT41470                | AVNK70   | na         | eebjt2 | NPN       | 500                              | 12    | 60    | 8                                | 25    | 150 | 8      |
| pb_hp_AT41485_19921101 | AT41485                | AVNK85   | 4          | bjt_gp | NPN       | na                               | na    | na    | na                               | na    | na  | na     |
| pb_hp_AT41486_19921101 | AT41486                | AVNK86   | 4          | bjt_gp | NPN       | 500                              | 12    | 60    | 8                                | 25    | 150 | 8      |
| pb_hp_AT41486_19931202 | AT41486                | AVNK86   | 4          | eebjt2 | NPN       | 500                              | 12    | 60    | 8                                | 25    | 150 | 8      |
| pb_hp_AT41511_19931202 | AT41511                | SOT143   | 4          | eebjt2 | NPN       | 225                              | 12    | 50    | 8                                | 25    | 150 | 8      |
| pb_hp_AT41586_19931202 | AT41586                | AVNK86   | 4          | eebjt2 | NPN       | 500                              | 12    | 60    | 8                                | 25    | 150 | 8      |
| pb_hp_AT42010_19921101 | AT42010                | NEC07    | 4          | bjt_gp | NPN       | na                               | na    | na    | na                               | na    | na  | na     |
| pb_hp_AT42035_19911003 | AT42035                | AVNK35   | 4          | bjt_gp | NPN       | 500                              | 12    | 60    | 8                                | 25    | 150 | 8      |
| pb_hp_AT42035_19921101 | AT42035                | AVNK35   | 4          | eebjt2 | NPN       | 500                              | 12    | 60    | 8                                | 25    | 150 | 8      |
| pb_hp_AT42070_19921101 | AT42070                | AVNK70   | 4          | bjt_gp | NPN       | 600                              | 12    | 80    | 8                                | 35    | 150 | 8      |
| pb_hp_AT42070_19931202 | AT42070                | AVNK70   | 4          | eebjt2 | NPN       | 600                              | 12    | 80    | 8                                | 35    | 150 | 8      |
| pb_hp_AT42085_19911003 | AT42085                | AVNK85   | 4          | bjt_gp | NPN       | 600                              | 12    | 80    | 8                                | 35    | 150 | 8      |
| pb_hp_AT42085_19921101 | AT42085                | AVNK85   | 4          | eebjt2 | NPN       | 600                              | 12    | 80    | 8                                | 35    | 150 | 8      |
| pb_hp_AT42086_19911008 | AT42086                | AVNK86   | 4          | bjt_gp | NPN       | 500                              | 12    | 80    | 8                                | 35    | 150 | 8      |

Table C-1. Agilent Technologies Packaged BJTs (continued)

| Component Name         | Physical Specification |          |            |        |           | Maximum Electrical Specification |       |       | Typical Electrical Specification |       |     |        |
|------------------------|------------------------|----------|------------|--------|-----------|----------------------------------|-------|-------|----------------------------------|-------|-----|--------|
|                        | Part Number            | Packag e | Term. Type | Model  | Polarit y | Pdiss mW                         | Vce V | Ic mA | Vce V                            | Ic mA | Hfe | Ft GHz |
| pb_hp_AT42086_19921101 | AT42086                | AVNK86   | 4          | eebjt2 | NPN       | 500                              | 12    | 80    | 8                                | 35    | 150 | 8      |
| pb_hp_AT60510_19921101 | AT60510                | NEC07    | 4          | bjt_gp | NPN       | na                               | na    | na    | na                               | na    | na  | na     |
| pb_hp_AT60535_19911003 | AT60535                | AVNK35   | 4          | bjt_gp | NPN       | 500                              | 12    | 80    | 8                                | 35    | 150 | 8      |
| pb_hp_AT60535_19921101 | AT60535                | AVNK35   | 4          | eebjt2 | NPN       | 500                              | 12    | 80    | 8                                | 35    | 150 | 8      |
| pb_hp_AT60570_19921101 | AT60570                | AVNK70   | 4          | bjt_gp | NPN       | na                               | na    | na    | na                               | na    | na  | na     |
| pb_hp_AT60585_19921101 | AT60585                | AVNK85   | 4          | bjt_gp | NPN       | na                               | na    | na    | na                               | na    | na  | na     |
| pb_hp_AT60586_19921101 | AT60586                | AVNK86   | na         | bjt_gp | NPN       | na                               | na    | na    | na                               | na    | na  | na     |
| na = not available     |                        |          |            |        |           |                                  |       |       |                                  |       |     |        |

Table C-2. Bipolarics Packaged BJTs

| Component Name             | Physical Specification |          |            |        |          | Maximum Electrical Specification |       |       | Typical Electrical Specification |       |     |        |
|----------------------------|------------------------|----------|------------|--------|----------|----------------------------------|-------|-------|----------------------------------|-------|-----|--------|
|                            | Part Number            | Package  | Term. Type | Model  | Polarity | Pdiss mW                         | Vce V | Ic mA | Vce V                            | Ic mA | Hfe | Ft GHz |
| pb_bit_B12V105d02_19921215 | B12V105-02             | SOT143   | 4          | eebjt2 | NPN      | na                               | 12    | 40    | 8                                | 10    | 100 | 10     |
| pb_bit_B12V105d05_19921215 | B12V105-05             | MICROX   | 4          | eebjt2 | NPN      | na                               | 12    | 40    | 8                                | 10    | 100 | 10     |
| pb_bit_B12V114d02_19931202 | B12V114-02             | SOT143   | 4          | eebjt2 | NPN      | na                               | 12    | 60    | 8                                | 25    | 150 | 10     |
| pb_bit_B12V114d05_19921215 | B12V114-05             | MICROX   | 4          | eebjt2 | NPN      | na                               | 12    | 60    | 8                                | 25    | 150 | 10     |
| pb_bit_B15V140d09_19931202 | B15V140-09             | SOT223   | 4          | eebjt2 | NPN      | na                               | 15    | 120   | 5                                | 70    | 100 | 8      |
| pb_bit_B15V140d10_19921215 | B15V140-10             | 145MILXP | 4          | eebjt2 | NPN      | na                               | 15    | 120   | 8                                | 60    | 100 | 8      |
| pb_bit_BT114d05_19911003   | BT114-05               | MICROX   | 4          | eebjt2 | NPN      | na                               | 12    | 60    | 8                                | 25    | 150 | 10     |
| pb_bit_BT114d10_19911001   | BT114-10               | 145ML4PK | 4          | eebjt2 | NPN      | na                               | 12    | 60    | 8                                | 25    | 150 | 10     |
| pb_bit_BT114d12_19911001   | BT114-12               | SOT23    | 3          | eebjt2 | NPN      | na                               | 12    | 60    | 8                                | 25    | 150 | 10     |
| na = not available         |                        |          |            |        |          |                                  |       |       |                                  |       |     |        |

Table C-3. Hitachi Packaged BJTs

| Component Name          | Physical Specification |         |            |        |          | Maximum Electrical Specification |       |       | Typical Electrical Specification |       |        |        |
|-------------------------|------------------------|---------|------------|--------|----------|----------------------------------|-------|-------|----------------------------------|-------|--------|--------|
|                         | Part Number            | Package | Term. Type | Model  | Polarity | Pdiss mW                         | Vce V | Ic mA | Vce V                            | Ic mA | Hfe    | Ft GHz |
| pb_hit_2SC2712_19921217 | 2SC2712                | SOT23   | 3          | eebjt2 | NPN      | 150                              | 50    | 150   | 10                               | 1     | 70-700 | 0.08   |
| pb_hit_2SC2734_19921213 | 2SC2734                | SOT23   | 3          | eebjt2 | NPN      | 150                              | 11    | 50    | 10                               | 10    | 90     | 3.5    |
| pb_hit_2SC3793_19921215 | 2SC3793                | SOT23   | 3          | eebjt2 | NPN      | 150                              | 20    | 50    | 10                               | 10    | 80     | 3.5    |

Table C-4. Motorola Packaged BJTs

| Component Name         | Physical Specification |            |             |        |          | Maximum Electrical Specification |       |       | Typical Electrical Specification |       |         |        |
|------------------------|------------------------|------------|-------------|--------|----------|----------------------------------|-------|-------|----------------------------------|-------|---------|--------|
|                        | Part Number            | Package    | Term . Type | Model  | Polarity | Pdiss mW                         | Vce V | Ic mA | Vce V                            | Ic mA | Hfe     | Ft GHz |
| pb_mot_2N2857_19911017 | 2N2857                 | TO206AF    | 3           | eebjt2 | NPN      | 300                              | 15    | 40    | 6                                | 5     | 64      | 1.6    |
| pb_mot_2N3903_19921211 | 2N3903                 | TO92       | 3           | eebjt2 | NPN      | 1500                             | 40    | 200   | 20                               | 10    | 50-200  | 0.25   |
| pb_mot_2N3904_19921211 | 2N3904                 | TO92       | na          | eebjt2 | NPN      | 1500                             | 40    | 200   | 20                               | 10    | 100-400 | 0.3    |
| pb_mot_2N5179_19921211 | 2N5179                 | TO72       | 3           | eebjt2 | NPN      | 300                              | 12    | 50    | 6                                | 5     | 25-300  | 0.9    |
| pb_mot_2N6603_19921101 | 2N6603                 | NEC07      | na          | bjt_gp | NPN      | na                               | na    | na    | na                               | na    | na      | na     |
| pb_mot_2N6604_19921101 | 2N6604                 | NEC07      | na          | bjt_gp | NPN      | na                               | na    | na    | na                               | na    | na      | na     |
| pb_mot_BF430L_19921101 | BF430L                 | SOT143     | na          | bjt_gp | NPN      | na                               | na    | na    | na                               | na    | na      | na     |
| pb_mot_BF431L_19921101 | BF431L                 | SOT143V7_3 | na          | bjt_gp | NPN      | na                               | na    | na    | na                               | na    | na      | na     |
| pb_mot_BFR90_19911003  | BFR90                  | MACROT     | 3           | eebjt2 | NPN      | 180                              | 15    | 30    | 10                               | 14    | 25-250  | 5      |
| pb_mot_BFR91_19911003  | BFR91                  | MACROT     | 3           | eebjt2 | NPN      | 180                              | 12    | 35    | 5                                | 30    | 25-250  | 5      |
| pb_mot_BFR92_19961218  | BFR92                  | SOT23      | na          | bjt_gp | NPN      | na                               | na    | na    | na                               | na    | na      | na     |
| pb_mot_BFR93_19961218  | BFR93                  | SOT23      | na          | bjt_gp | NPN      | na                               | na    | na    | na                               | na    | na      | na     |
| pb_mot_BFR96_19911003  | BFR96                  | MACROT     | 3           | eebjt2 | NPN      | 500                              | 15    | 100   | 10                               | 50    | 30-200  | 4.5    |
| pb_mot_BFS17_19961218  | BFS17                  | SOT23      | na          | bjt_gp | NPN      | na                               | na    | na    | na                               | na    | na      | na     |
| pb_mot_BFW92A_19911003 | BFW92A                 | MACROT     | 3           | eebjt2 | NPN      | 180                              | 15    | 35    | 10                               | 10    | 50      | 4.5    |
| pb_mot_BFY90_19911017  | BFY90                  | C2003      | 3           | eebjt2 | NPN      | 200                              | 15    | 50    | 5                                | 25    | 20-125  | 1.3    |
| pb_mot_MM4049_19931122 | MM4049                 | C2003      | 3           | eebjt2 | PNP      | 200                              | -10   | -30   | -5                               | -20   | 20-200  | 4      |

Table C-4. Motorola Packaged BJTs (continued)

| Component Name           | Physical Specification |         |             |        |           | Maximum Electrical Specification |       |       | Typical Electrical Specification |       |        |        |
|--------------------------|------------------------|---------|-------------|--------|-----------|----------------------------------|-------|-------|----------------------------------|-------|--------|--------|
|                          | Part Number            | Package | Term . Type | Model  | Polarit y | Pdiss mW                         | Vce V | Ic mA | Vce V                            | Ic mA | Hfe    | Ft GHz |
| pb_mot_MMBR5031_19961218 | MMBR5031               | SOT23   | na          | bjt_gp | NPN       | na                               | na    | na    | na                               | na    | na     | na     |
| pb_mot_MMBR521_19961218  | MMBR521                | SOT23   | na          | bjt_gp | PNP       | na                               | na    | na    | na                               | na    | na     | na     |
| pb_mot_MMBR571L_19921101 | MMBR571L               | SOT23   | na          | bjt_gp | NPN       | na                               | na    | na    | na                               | na    | na     | na     |
| pb_mot_MMBR571_19961218  | MMBR571                | SOT23   | na          | bjt_gp | NPN       | na                               | na    | na    | na                               | na    | na     | na     |
| pb_mot_MMBR901L_19911003 | MMBR901L               | SOT23   | na          | eebjt2 | NPN       | 350                              | 15    | 30    | 6                                | 5     | 30-200 | na     |
| pb_mot_MMBR901L_19921101 | MMBR901L               | SOT23   | na          | bjt_gp | NPN       | 350                              | 15    | 30    | 6                                | 5     | 30-200 | na     |
| pb_mot_MMBR901_19961218  | MMBR901                | SOT23   | na          | bjt_gp | NPN       | na                               | na    | na    | na                               | na    | na     | na     |
| pb_mot_MMBR911_19961218  | MMBR911                | SOT23   | na          | bjt_gp | NPN       | na                               | na    | na    | na                               | na    | na     | na     |
| pb_mot_MMBR920L_19911017 | MMBR920L               | SOT23   | na          | eebjt2 | NPN       | 350                              | 15    | 35    | 10                               | 14    | 25-250 | 4.5    |
| pb_mot_MMBR920_19961218  | MMBR920                | SOT23   | na          | bjt_gp | NPN       | na                               | na    | na    | na                               | na    | na     | na     |
| pb_mot_MMBR930L_19921101 | MMBR930L               | SOT23   | 3           | bjt_gp | NPN       | na                               | na    | na    | na                               | na    | na     | na     |
| pb_mot_MMBR930_19911003  | MMBR930                | SOT23   | 3           | eebjt2 | NPN       | 350                              | 12    | 35    | 5                                | 30    | 25-250 | na     |
| pb_mot_MMBR930_19921101  | MMBR930                | SOT23   | na          | bjt_gp | NPN       | 350                              | 12    | 35    | 5                                | 30    | 25-250 | na     |
| pb_mot_MMBR931_19961218  | MMBR931                | SOT23   | na          | bjt_gp | NPN       | na                               | na    | na    | na                               | na    | na     | na     |
| pb_mot_MMBR941L_19911003 | MMBR941L               | SOT23   | na          | bjt_gp | NPN       | 400                              | 10    | 50    | 6                                | 15    | 50-200 | 8      |
| pb_mot_MMBR941L_19921101 | MMBR941L               | SOT23   | na          | eebjt2 | NPN       | 400                              | 10    | 50    | 6                                | 15    | 50-200 | 8      |
| pb_mot_MMBR941_19961020  | MMBR941                | SOT23   | na          | bjt_gp | NPN       | na                               | na    | na    | na                               | na    | na     | na     |
| pb_mot_MMBR951L_19911007 | MMBR951L               | SOT23   | na          | eebjt2 | NPN       | 580                              | 10    | 100   | 8                                | 30    | 50-200 | 8      |

Table C-4. Motorola Packaged BJTs (continued)

| Component Name           | Physical Specification |         |             |        |           | Maximum Electrical Specification |       |       | Typical Electrical Specification |       |        |        |
|--------------------------|------------------------|---------|-------------|--------|-----------|----------------------------------|-------|-------|----------------------------------|-------|--------|--------|
|                          | Part Number            | Package | Term . Type | Model  | Polarit y | Pdiss mW                         | Vce V | Ic mA | Vce V                            | Ic mA | Hfe    | Ft GHz |
| pb_mot_MMBR951L_19921101 | MMBR951L               | SOT23   | na          | bjt_gp | NPN       | 580                              | 10    | 100   | 8                                | 30    | 50-200 | 8      |
| pb_mot_MMBR951_19961218  | MMBR951                | SOT23   | na          | bjt_gp | NPN       | na                               | na    | na    | na                               | na    | na     | na     |
| pb_mot_MPS536_19931122   | MPS536                 | TO226AA | 3           | eebjt2 | PNP       | 625                              | -10   | -30   | -5                               | -20   | 20-200 | 4.5    |
| pb_mot_MPS571_19911009   | MPS571                 | TO226AA | 3           | eebjt2 | NPN       | 625                              | 10    | 80    | 5                                | 50    | 50-300 | 6      |
| pb_mot_MPS901_19911003   | MPS901                 | TO206AA | 3           | eebjt2 | NPN       | 300                              | 15    | 30    | 10                               | 15    | 80     | 4.5    |
| pb_mot_MPS911_19911009   | MPS911                 | TO206AA | 3           | eebjt2 | NPN       | 625                              | 12    | 60    | 10                               | 30    | 30-200 | 7      |
| pb_mot_MPS918_19911018   | MPS918                 | TO92    | 3           | eebjt2 | NPN       | 625                              | 15    | 50    | 10                               | 8     | 20-200 | 0.6    |
| pb_mot_MRF2369_19911003  | MRF2369                | MACROX  | 4           | eebjt2 | NPN       | 750                              | 15    | 70    | 10                               | 40    | 50-300 | 6      |
| pb_mot_MRF237_19931202   | MRF237                 | TO39    | 3           | eebjt2 | NPN       | 8000                             | 18    | 1000  | 5                                | 250   | 5      | na     |
| pb_mot_MRF501_19921211   | MRF501                 | C2003   | 3           | eebjt2 | NPN       | 200                              | 15    | 50    | 6                                | 5     | 30-250 | 1      |
| pb_mot_MRF5211L_19921101 | MRF5211L               | SOT143  | na          | bjt_gp | PNP       | na                               | na    | na    | na                               | na    | na     | na     |
| pb_mot_MRF5211_19961023  | MRF5211                | SOT143  | na          | bjt_gp | PNP       | na                               | na    | na    | na                               | na    | na     | na     |
| pb_mot_MRF522_19921101   | MRF522                 | NEC07   | 4           | bjt_gp | PNP       | na                               | na    | na    | na                               | na    | na     | na     |
| pb_mot_MRF524_19931123   | MRF524                 | C2003   | 3           | eebjt2 | PNP       | 200                              | -10   | -50   | -8                               | -50   | 25-125 | 4.2    |
| pb_mot_MRF536_19931123   | MRF536                 | MACROX  | 4           | eebjt2 | PNP       | 300                              | -10   | -30   | -5                               | -20   | 20-200 | 5      |
| pb_mot_MRF553_19911007   | MRF553                 | C317D02 | 4           | eebjt2 | NPN       | 3000                             | 16    | 500   | 5                                | 250   | 30-200 | na     |
| pb_mot_MRF555_19911007   | MRF555                 | C317D02 | 4           | eebjt2 | NPN       | 3000                             | 16    | 400   | 5                                | 100   | 90     | na     |
| pb_mot_MRF557_19911007   | MRF557                 | C317D02 | 4           | eebjt2 | NPN       | 3000                             | 16    | 400   | 5                                | 100   | 90     | na     |

Table C-4. Motorola Packaged BJTs (continued)

| Component Name           | Physical Specification |         |             |        |           | Maximum Electrical Specification |       |       | Typical Electrical Specification |       |        |        |
|--------------------------|------------------------|---------|-------------|--------|-----------|----------------------------------|-------|-------|----------------------------------|-------|--------|--------|
|                          | Part Number            | Package | Term . Type | Model  | Polarit y | Pdiss mW                         | Vce V | Ic mA | Vce V                            | Ic mA | Hfe    | Ft GHz |
| pb_mot_MRF559_19911007   | MRF559                 | MACROX  | 4           | eebjt2 | NPN       | 2000                             | 16    | 150   | 10                               | 100   | 90     | 3      |
| pb_mot_MRF5711L_19911004 | MRF5711L               | SOT143  | na          | bjt_gp | NPN       | 580                              | 10    | 70    | 8                                | 50    | 50-300 | 8      |
| pb_mot_MRF5711L_19921101 | MRF5711L               | SOT143  | na          | eebjt2 | NPN       | 580                              | 10    | 70    | 8                                | 50    | 50-300 | 8      |
| pb_mot_MRF5711_19961023  | MRF5711                | SOT143  | na          | bjt_gp | NPN       | na                               | na    | na    | na                               | na    | na     | na     |
| pb_mot_MRF571_19911007   | MRF571                 | SOT143  | na          | eebjt2 | NPN       | 1000                             | 10    | 70    | 8                                | 50    | 50-300 | 8      |
| pb_mot_MRF572_19911007   | MRF572                 | NEC07   | na          | bjt_gp | NPN       | 750                              | 10    | 70    | 8                                | 50    | 50-300 | 8      |
| pb_mot_MRF572_19921101   | MRF572                 | NEC07   | 4           | eebjt2 | NPN       | 750                              | 10    | 70    | 8                                | 50    | 50-300 | 8      |
| pb_mot_MRF580A_19911008  | MRF580A                | MACROT  | 3           | eebjt2 | NPN       | 1200                             | 15    | 200   | 10                               | 75    | 90-250 | 5      |
| pb_mot_MRF580_19911008   | MRF580                 | MACROT  | 3           | eebjt2 | NPN       | 1200                             | 18    | 200   | 10                               | 75    | 50-200 | 5      |
| pb_mot_MRF5812_19961023  | MRF5812                | C751D03 | na          | bjt_gp | NPN       | na                               | na    | na    | na                               | na    | na     | na     |
| pb_mot_MRF581A_19911008  | MRF581A                | MACROX  | 4           | eebjt2 | NPN       | 1200                             | 15    | 200   | 10                               | 75    | 90-250 | 5      |
| pb_mot_MRF581_19911008   | MRF581                 | MACROX  | 4           | eebjt2 | NPN       | 1200                             | 18    | 200   | 10                               | 75    | 50-200 | 5      |
| pb_mot_MRF586_19911008   | MRF586                 | C7904   | 3           | eebjt2 | NPN       | 2500                             | 17    | 200   | 15                               | 90    | 50-200 | 4.5    |
| pb_mot_MRF607_19931202   | MRF607                 | C7904   | 3           | eebjt2 | NPN       | 3500                             | 160   | 330   | 5                                | 50    | 150    | na     |
| pb_mot_MRF8372_19911008  | MRF8372                | C751D03 | 8           | eebjt2 | NPN       | na                               | na    | na    | na                               | na    | na     | na     |
| pb_mot_MRF8372_19931202  | MRF8372                | C751D03 | na          | bjt_gp | NPN       | na                               | na    | na    | na                               | na    | na     | na     |
| pb_mot_MRF8372_19961023  | MRF8372                | C751D03 | na          | bjt_gp | NPN       | na                               | na    | na    | na                               | na    | na     | na     |
| pb_mot_MRF837_19911008   | MRF837                 | C751D03 | 8           | eebjt2 | NPN       | 2500                             | 16    | 200   | 10                               | 50    | 90     | na     |

Table C-4. Motorola Packaged BJTs (continued)

| Component Name           | Physical Specification |         |             |        |           | Maximum Electrical Specification |       |       | Typical Electrical Specification |       |        |        |
|--------------------------|------------------------|---------|-------------|--------|-----------|----------------------------------|-------|-------|----------------------------------|-------|--------|--------|
|                          | Part Number            | Package | Term . Type | Model  | Polarit y | Pdiss mW                         | Vce V | Ic mA | Vce V                            | Ic mA | Hfe    | Ft GHz |
| pb_mot_MRF9011L_19921101 | MRF9011L               | SOT143  | na          | bjt_gp | NPN       | na                               | na    | na    | na                               | na    | na     | na     |
| pb_mot_MRF9011_19961023  | MRF9011                | SOT143  | na          | eebjt2 | NPN       | na                               | na    | na    | na                               | na    | na     | na     |
| pb_mot_MRF901_19911021   | MRF901                 | SOT143  | na          | bjt_gp | NPN       | 375                              | 15    | 30    | 10                               | 15    | 80     | 4.5    |
| pb_mot_MRF904_19911009   | MRF904                 | C2003   | 3           | eebjt2 | NPN       | 200                              | 15    | 30    | 10                               | 15    | 30-200 | 4      |
| pb_mot_MRF911_19911008   | MRF911                 | MACROX  | 4           | eebjt2 | NPN       | 400                              | 12    | 40    | 10                               | 30    | 30-200 | 5      |
| pb_mot_MRF914_19911009   | MRF914                 | C2003   | 3           | eebjt2 | NPN       | 200                              | 12    | 40    | 10                               | 20    | 30-200 | 4.5    |
| pb_mot_MRF917_19961218   | MRF917                 | SOT323  | na          | bjt_gp | NPN       | na                               | na    | na    | na                               | na    | na     | na     |
| pb_mot_MRF927_19961218   | MRF927                 | SOT323  | na          | bjt_gp | NPN       | na                               | na    | na    | na                               | na    | na     | na     |
| pb_mot_MRF931_19911011   | MRF931                 | MACROX  | 4           | eebjt2 | NPN       | 50                               | 5     | 5     | 1                                | 1     | 30-150 | 3      |
| pb_mot_MRF9331_19961023  | MRF9331                | SOT143  | na          | bjt_gp | NPN       | na                               | na    | na    | na                               | na    | na     | na     |
| pb_mot_MRF9411L_19921101 | MRF9411L               | SOT143  | na          | bjt_gp | NPN       | 200                              | 10    | 50    | 6                                | 15    | 50-200 | 8      |
| pb_mot_MRF9411L_19931202 | MRF9411L               | SOT143  | na          | eebjt2 | NPN       | 200                              | 10    | 50    | 6                                | 15    | 50-200 | 8      |
| pb_mot_MRF9411_19961025  | MRF9411                | SOT143  | na          | bjt_gp | NPN       | na                               | na    | na    | na                               | na    | na     | na     |
| pb_mot_MRF942_19911009   | MRF942                 | NEC07   | 4           | bjt_gp | NPN       | 300                              | 10    | 40    | 6                                | 15    | 50-200 | 8      |
| pb_mot_MRF942_19921101   | MRF942                 | NEC07   | 4           | eebjt2 | NPN       | 300                              | 10    | 40    | 6                                | 15    | 50-200 | 8      |
| pb_mot_MRF947_19921213   | MRF947                 | SOT323  | 3           | eebjt2 | NPN       | 175                              | 10    | 50    | 6                                | 5     | 50-200 | 8      |
| pb_mot_MRF947_19961030   | MRF947                 | SOT323  | na          | bjt_gp | NPN       | 175                              | 10    | 50    | 6                                | 5     | 50-200 | 8      |
| pb_mot_MRF949_19961023   | MRF949                 | SC-90   | na          | bjt_gp | NPN       | na                               | na    | na    | na                               | na    | na     | na     |

Table C-4. Motorola Packaged BJTs (continued)

| Component Name           | Physical Specification |         |             |        |          | Maximum Electrical Specification |       |       | Typical Electrical Specification |       |        |        |
|--------------------------|------------------------|---------|-------------|--------|----------|----------------------------------|-------|-------|----------------------------------|-------|--------|--------|
|                          | Part Number            | Package | Term . Type | Model  | Polarity | Pdiss mW                         | Vce V | Ic mA | Vce V                            | Ic mA | Hfe    | Ft GHz |
| pb_mot_MRF9511L_19921101 | MRF9511L               | SOT143  | na          | eebjt2 | NPN      | na                               | na    | na    | na                               | na    | na     | na     |
| pb_mot_MRF9511_19911017  | MRF9511                | SOT143  | na          | bjt_gp | NPN      | 500                              | 10    | 100   | 8                                | 30    | 50-200 | 8      |
| pb_mot_MRF9511_19961023  | MRF9511                | SOT143  | na          | bjt_gp | NPN      | 500                              | 10    | 100   | 8                                | 30    | 50-200 | 8      |
| pb_mot_MRF951_19911008   | MRF951                 | SOT143  | na          | eebjt2 | NPN      | 1000                             | 10    | 100   | 8                                | 30    | 50-200 | 8      |
| pb_mot_MRF952_19921101   | MRF952                 | NEC07   | 4           | bjt_gp | NPN      | na                               | na    | na    | na                               | na    | na     | na     |
| pb_mot_MRF957_19921213   | MRF957                 | SOT323  | na          | eebjt2 | NPN      | 175                              | 10    | 100   | 8                                | 30    | 50-200 | 8      |
| pb_mot_MRF961_19911008   | MRF961                 | MACROX  | 4           | eebjt2 | NPN      | 500                              | 15    | 100   | 10                               | 50    | 30-200 | 4.5    |
| pb_mot_MRF962_19911009   | MRF962                 | C30301  | 4           | eebjt2 | NPN      | 750                              | 15    | 100   | 10                               | 50    | 30-200 | 4.5    |
| na = not available       |                        |         |             |        |          |                                  |       |       |                                  |       |        |        |

Table C-5. NEC Packaged BJTs

| Component Name            | Physical Specification |         |             |        |           | Maximum Electrical Specification |       |       | Typical Electrical Specification |       |     |        |
|---------------------------|------------------------|---------|-------------|--------|-----------|----------------------------------|-------|-------|----------------------------------|-------|-----|--------|
|                           | Part Number            | Package | Term . Type | Mode l | Polarit y | Pdiss mW                         | Vce V | Ic mA | Vce V                            | Ic mA | Hfe | Ft GHz |
| pb_nec_2SC1252_19911016   | 2SC1252                | NEC14   | 3           | eebjt2 | NPN       | 5000                             | 25    | 300   | 15                               | 70    | 80  | 1.7    |
| pb_nec_2SC1253_19911016   | 2SC1253                | NEC14   | 3           | eebjt2 | NPN       | 5000                             | 25    | 300   | 15                               | 50    | 100 | 2      |
| pb_nec_2SC1365_19911016   | 2SC1365                | NEC13   | 3           | eebjt2 | NPN       | 5000                             | 25    | 300   | 15                               | 70    | 80  | 1.7    |
| pb_nec_2SC1949_19911002   | 2SC1949                | NEC03   | 4           | eebjt2 | NPN       | 580                              | 18    | 100   | 10                               | 50    | 100 | 3.5    |
| pb_nec_2SC1988_19911007   | 2SC1988                | NEC12   | 3           | eebjt2 | NPN       | 700                              | 12    | 70    | 10                               | 20    | 70  | 4.5    |
| pb_nec_2SC2148_19921101   | 2SC2148                | MICROX  | na          | bjt_gp | NPN       | na                               | na    | na    | na                               | na    | na  | na     |
| pb_nec_2SC2149_19921101   | 2SC2149                | MICROX  | na          | bjt_gp | NPN       | na                               | na    | na    | na                               | na    | na  | na     |
| pb_nec_2SC2218_19911007   | 2SC2218                | NEC08   | 4           | eebjt2 | NPN       | 350                              | 10    | 80    | 8                                | 20    | 100 | 8      |
| pb_nec_2SC2272_19911007   | 2SC2272                | NEC08   | 4           | eebjt2 | NPN       | 260                              | 10    | 35    | 6                                | 5     | 100 | 10     |
| pb_nec_2SC2351_19921101   | 2SC2351                | NEC33   | 3           | bjt_gp | NPN       | na                               | na    | na    | na                               | na    | na  | na     |
| pb_nec_2SC2351dL_19911002 | 2SC2351-L              | NEC33   | 3           | eebjt2 | NPN       | 150                              | 12    | 70    | 10                               | 20    | 70  | 4.5    |
| pb_nec_2SC2367_19911007   | 2SC2367                | MICROX  | na          | bjt_gp | NPN       | 580                              | 10    | 80    | 8                                | 20    | 100 | 8      |
| pb_nec_2SC2367_19921101   | 2SC2367                | MICROX  | 4           | eebjt2 | NPN       | 580                              | 10    | 80    | 8                                | 20    | 100 | 8      |
| pb_nec_2SC2570A_19911009  | 2SC2570A               | NEC32   | 3           | eebjt2 | NPN       | 250                              | 12    | 70    | 10                               | 20    | 70  | 4.5    |
| pb_nec_2SC2585_19911007   | 2SC2585                | NEC35   | 4           | eebjt2 | NPN       | 400                              | 12    | 65    | 8                                | 20    | 100 | 8.5    |
| pb_nec_2SC2757_19921215   | 2SC2757                | SOT23   | 3           | eebjt2 | NPN       | 150                              | 20    | 50    | 10                               | 5     | 120 | 1.1    |
| pb_nec_2SC2759_19921101   | 2SC2759                | NEC33   | 3           | bjt_gp | NPN       | na                               | na    | na    | na                               | na    | na  | na     |
| pb_nec_2SC2759dL_19921213 | 2SC2759-L              | NEC33   | 3           | eebjt2 | NPN       | 200                              | 14    | 50    | 10                               | 10    | 100 | 2      |
| pb_nec_2SC3355_19931201   | 2SC3355                | NEC32   | 3           | eebjt2 | NPN       | 600                              | 12    | 100   | 10                               | 20    | 120 | 6.5    |
| pb_nec_2SC3356_19921101   | 2SC3356                | SOT23   | 3           | bjt_gp | NPN       | na                               | na    | na    | na                               | na    | na  | na     |
| pb_nec_2SC3356dL_19921213 | 2SC3356-L              | SOT23   | 3           | eebjt2 | NPN       | 200                              | 12    | 100   | 10                               | 20    | 120 | 7      |
| pb_nec_2SC3357_19921216   | 2SC3357                | SOT89   | 3           | eebjt2 | NPN       | 2000                             | 12    | 100   | 10                               | 20    | 120 | 6.5    |
| pb_nec_2SC3583_19921101   | 2SC3583                | NEC33   | 3           | bjt_gp | NPN       | na                               | na    | na    | na                               | na    | na  | na     |
| pb_nec_2SC3583dL_19911007 | 2SC3583-L              | NEC33   | 3           | eebjt2 | NPN       | 200                              | 10    | 65    | 8                                | 20    | 100 | 9      |
| pb_nec_2SC3585_19921101   | 2SC3585                | NEC33   | 3           | bjt_gp | NPN       | na                               | na    | na    | na                               | na    | na  | na     |
| pb_nec_2SC3585dL_19911001 | 2SC3585-L              | NEC33   | 3           | eebjt2 | NPN       | 200                              | 10    | 35    | 6                                | 10    | 100 | 10     |
| pb_nec_2SC3587_19921101   | 2SC3587                | NEC35   | na          | bjt_gp | NPN       | na                               | na    | na    | na                               | na    | na  | na     |
| pb_nec_2SC3603_19921101   | 2SC3603                | NEC35   | na          | bjt_gp | NPN       | 580                              | 12    | 100   | 10                               | 20    | 120 | 7      |
| pb_nec_2SC3603_19921210   | 2SC3603                | NEC35   | 4           | eebjt2 | NPN       | 580                              | 12    | 100   | 10                               | 20    | 120 | 7      |

Table C-5. NEC Packaged BJTs (continued)

| Component Name           | Physical Specification |          |             |        |           | Maximum Electrical Specification |       |       | Typical Electrical Specification |       |        |        |
|--------------------------|------------------------|----------|-------------|--------|-----------|----------------------------------|-------|-------|----------------------------------|-------|--------|--------|
|                          | Part Number            | Package  | Term . Type | Mode l | Polarit y | Pdiss mW                         | Vce V | Ic mA | Vce V                            | Ic mA | Hfe    | Ft GHz |
| pb_nec_2SC3604_19911002  | 2SC3604                | NEC35    | na          | bjt_gp | NPN       | 295                              | 10    | 65    | 8                                | 20    | 100    | 9      |
| pb_nec_2SC3604_19921101  | 2SC3604                | NEC35    | 4           | eebjt2 | NPN       | 295                              | 10    | 65    | 8                                | 20    | 100    | 9      |
| pb_nec_2SC4090_19921101  | 2SC4090                | NEC39    | na          | bjt_gp | NPN       | na                               | na    | na    | na                               | na    | na     | na     |
| pb_nec_2SC4091_19921101  | 2SC4091                | NEC39    | na          | bjt_gp | NPN       | na                               | na    | na    | na                               | na    | na     | na     |
| pb_nec_2SC4092_19911007  | 2SC4092                | NEC39    | na          | bjt_gp | NPN       | 200                              | 12    | 70    | 10                               | 20    | 70     | 4.5    |
| pb_nec_2SC4092_19921101  | 2SC4092                | NEC39    | 4           | eebjt2 | NPN       | 200                              | 12    | 70    | 10                               | 20    | 70     | 4.5    |
| pb_nec_2SC4093_19911002  | 2SC4093                | NEC39    | 4           | eebjt2 | NPN       | 200                              | 12    | 100   | 10                               | 20    | 120    | 9      |
| pb_nec_2SC4094_19911002  | 2SC4094                | NEC39    | 4           | eebjt2 | NPN       | 200                              | 10    | 65    | 8                                | 20    | 100    | 9      |
| pb_nec_2SC4095_19911007  | 2SC4095                | NEC39    | 4           | eebjt2 | NPN       | 200                              | 10    | 35    | 6                                | 10    | 100    | 10     |
| pb_nec_2SC4225_19911017  | 2SC4225                | NEC30    | 3           | eebjt2 | NPN       | 150                              | 12    | 70    | 10                               | 20    | 100    | 0.5    |
| pb_nec_2SC4226_19921213  | 2SC4226                | NEC30    | 3           | eebjt2 | NPN       | 150                              | 12    | 100   | 3                                | 7     | 110    | 4.5    |
| pb_nec_2SC4227_19921215  | 2SC4227                | NEC30    | 3           | eebjt2 | NPN       | 150                              | 10    | 65    | 3                                | 7     | 40-240 | 7      |
| pb_nec_2SC4228_19921211  | 2SC4228                | NEC30    | 3           | eebjt2 | NPN       | 150                              | 10    | 35    | 3                                | 5     | 50-250 | 8.5    |
| pb_nec_2SC5006_19931201  | 2SC5006                | NEC19    | 3           | eebjt2 | NPN       | 100                              | 12    | 100   | 3                                | 7     | 80-160 | 4.5    |
| pb_nec_2SC5007_19931201  | 2SC5007                | NEC19    | 3           | eebjt2 | NPN       | 100                              | 10    | 65    | 3                                | 7     | 80-160 | 7      |
| pb_nec_2SC5008_19931130  | 2SC5008                | NEC19    | 3           | eebjt2 | NPN       | 100                              | 10    | 35    | 3                                | 7     | 80-160 | 8      |
| pb_nec_2SC5010_19931201  | 2SC5010                | NEC19    | 3           | eebjt2 | NPN       | 100                              | 6     | 30    | 3                                | 10    | 65-175 | 12     |
| pb_nec_2SC5012_19931201  | 2SC5012                | NEC18    | 4           | eebjt2 | NPN       | 150                              | 10    | 65    | 6                                | 10    | 100    | 10     |
| pb_nec_2SC5015_19931201  | 2SC5015                | NEC18    | 4           | eebjt2 | NPN       | 150                              | 6     | 30    | 3                                | 10    | 110    | 12     |
| pb_nec_NE02107_19921101  | NE02107                | NEC07    | na          | bjt_gp | NPN       | na                               | na    | na    | na                               | na    | na     | na     |
| pb_nec_NE02112_19911007  | NE02112                | NEC12    | 3           | eebjt2 | NPN       | 700                              | 12    | 70    | 10                               | 20    | 70     | 4.5    |
| pb_nec_NE02130_19911017  | NE02130                | NEC30    | 3           | eebjt2 | NPN       | 150                              | 12    | 70    | 10                               | 20    | 100    | 0.5    |
| pb_nec_NE02132E_19911009 | NE02132E               | NEC32    | 3           | eebjt2 | NPN       | 250                              | 12    | 70    | 10                               | 20    | 70     | 4.5    |
| pb_nec_NE02133_19911002  | NE02133                | NEC33    | 3           | bjt_gp | NPN       | 150                              | 12    | 70    | 10                               | 20    | 70     | 4.5    |
| pb_nec_NE02133_19921101  | NE02133                | NEC33    | 3           | eebjt2 | NPN       | 150                              | 12    | 70    | 10                               | 20    | 70     | 4.5    |
| pb_nec_NE02135_19921101  | NE02135                | MICROX_3 | na          | bjt_gp | NPN       | na                               | na    | na    | na                               | na    | na     | na     |
| pb_nec_NE02139_19911007  | NE02139                | NEC39    | na          | bjt_gp | NPN       | 200                              | 12    | 70    | 10                               | 20    | 70     | 4.5    |
| pb_nec_NE02139_19921101  | NE02139                | NEC39    | 4           | eebjt2 | NPN       | 200                              | 12    | 70    | 10                               | 20    | 70     | 4.5    |
| pb_nec_NE21908_19911007  | NE21908                | NEC08    | 4           | eebjt2 | NPN       | 350                              | 10    | 80    | 8                                | 20    | 100    | 8      |

Table C-5. NEC Packaged BJTs (continued)

| Component Name           | Physical Specification |          |             |        |           | Maximum Electrical Specification |       |       | Typical Electrical Specification |       |        |        |
|--------------------------|------------------------|----------|-------------|--------|-----------|----------------------------------|-------|-------|----------------------------------|-------|--------|--------|
|                          | Part Number            | Package  | Term . Type | Mode l | Polarit y | Pdiss mW                         | Vce V | Ic mA | Vce V                            | Ic mA | Hfe    | Ft GHz |
| pb_nec_NE21935_19911007  | NE21935                | NEC35    | na          | bjt_gp | NPN       | 580                              | 10    | 80    | 8                                | 20    | 100    | 8      |
| pb_nec_NE21935_19921101  | NE21935                | NEC35    | 4           | eebjt2 | NPN       | 580                              | 10    | 80    | 8                                | 20    | 100    | 8      |
| pb_nec_NE33353E_19921213 | NE33353E               | NEC53E   | 3           | eebjt2 | NPN       | 5000                             | 14    | 200   | 10                               | 100   | 40     | 4.5    |
| pb_nec_NE41603_19911002  | NE41603                | NEC03    | 4           | eebjt2 | NPN       | 580                              | 18    | 100   | 10                               | 50    | 100    | 3.5    |
| pb_nec_NE41607_19911007  | NE41607                | NEC07    | na          | bjt_gp | NPN       | 580                              | 18    | 100   | 10                               | 50    | 100    | 3.5    |
| pb_nec_NE41607_19921101  | NE41607                | NEC07    | 4           | eebjt2 | NPN       | 580                              | 18    | 100   | 10                               | 50    | 100    | 3.5    |
| pb_nec_NE41635_19921101  | NE41635                | MICROX_3 | na          | bjt_gp | NPN       | na                               | na    | na    | na                               | na    | na     | na     |
| pb_nec_NE46134_19950901  | NE46134                | NEC34    | na          | bjt_gp | NPN       | na                               | na    | na    | na                               | na    | na     | na     |
| pb_nec_NE64408_19911007  | NE64408                | NEC08    | 4           | eebjt2 | NPN       | 260                              | 10    | 35    | 6                                | 5     | 100    | 10     |
| pb_nec_NE64535_19911007  | NE64535                | NEC35    | 4           | eebjt2 | NPN       | 400                              | 12    | 65    | 8                                | 20    | 100    | 8.5    |
| pb_nec_NE68018_19960501  | NE68018                | NEC18    | na          | bjt_gp | NPN       | na                               | na    | na    | na                               | na    | na     | na     |
| pb_nec_NE68019D_19950901 | NE68019D               | NEC19    | na          | bjt_gp | NPN       | na                               | na    | na    | na                               | na    | na     | na     |
| pb_nec_NE68019_19931130  | NE68019                | NEC19    | 3           | eebjt2 | NPN       | 100                              | 10    | 35    | 3                                | 7     | 80-160 | 8      |
| pb_nec_NE68019_19960501  | NE68019                | NEC19    | na          | bjt_gp | NPN       | 100                              | 10    | 35    | 3                                | 7     | 80-160 | 8      |
| pb_nec_NE68030D_19950901 | NE68030D               | NEC30    | na          | bjt_gp | NPN       | na                               | na    | na    | na                               | na    | na     | na     |
| pb_nec_NE68030_19921211  | NE68030                | NEC30    | 3           | eebjt2 | NPN       | 150                              | 10    | 35    | 3                                | 5     | 50-250 | 8.5    |
| pb_nec_NE68030_19961001  | NE68030                | NEC30    | na          | bjt_gp | NPN       | 150                              | 10    | 35    | 3                                | 5     | 50-250 | 8.5    |
| pb_nec_NE68033_19911001  | NE68033                | NEC33    | 3           | bjt_gp | NPN       | 200                              | 10    | 35    | 6                                | 10    | 100    | 10     |
| pb_nec_NE68033_19921101  | NE68033                | NEC33    | 3           | eebjt2 | NPN       | 200                              | 10    | 35    | 6                                | 10    | 100    | 10     |
| pb_nec_NE68035_19921101  | NE68035                | NEC35    | na          | bjt_gp | NPN       | na                               | na    | na    | na                               | na    | na     | na     |
| pb_nec_NE68035_19961101  | NE68035                | NEC35    | na          | bjt_gp | NPN       | na                               | na    | na    | na                               | na    | na     | na     |
| pb_nec_NE68039_19911007  | NE68039                | NEC39    | na          | bjt_gp | NPN       | 200                              | 10    | 35    | 6                                | 10    | 100    | 10     |
| pb_nec_NE68039_19921101  | NE68039                | NEC39    | 4           | eebjt2 | NPN       | 200                              | 10    | 35    | 6                                | 10    | 100    | 10     |
| pb_nec_NE68118_19931201  | NE68118                | NEC18    | 4           | eebjt2 | NPN       | 150                              | 10    | 65    | 6                                | 10    | 100    | 10     |
| pb_nec_NE68118_19960501  | NE68118                | NEC18    | na          | bjt_gp | NPN       | 150                              | 10    | 65    | 6                                | 10    | 100    | 10     |
| pb_nec_NE68119_19931201  | NE68119                | NEC19    | 3           | eebjt2 | NPN       | 100                              | 10    | 65    | 3                                | 7     | 80-160 | 7      |
| pb_nec_NE68119_19960501  | NE68119                | NEC19    | na          | bjt_gp | NPN       | 100                              | 10    | 65    | 3                                | 7     | 80-160 | 7      |
| pb_nec_NE68130_19921215  | NE68130                | NEC30    | 3           | eebjt2 | NPN       | 150                              | 10    | 65    | 3                                | 7     | 40-240 | 7      |
| pb_nec_NE68130_19961001  | NE68130                | NEC30    | na          | bjt_gp | NPN       | 150                              | 10    | 65    | 3                                | 7     | 40-240 | 7      |

Table C-5. NEC Packaged BJTs (continued)

| Component Name           | Physical Specification |         |             |        |           | Maximum Electrical Specification |       |       | Typical Electrical Specification |       |        |        |
|--------------------------|------------------------|---------|-------------|--------|-----------|----------------------------------|-------|-------|----------------------------------|-------|--------|--------|
|                          | Part Number            | Package | Term . Type | Mode l | Polarit y | Pdiss mW                         | Vce V | Ic mA | Vce V                            | Ic mA | Hfe    | Ft GHz |
| pb_nec_NE68133_19911007  | NE68133                | NEC33   | 3           | bjt_gp | NPN       | 200                              | 10    | 65    | 8                                | 20    | 100    | 9      |
| pb_nec_NE68133_19921101  | NE68133                | NEC33   | 3           | eebjt2 | NPN       | 200                              | 10    | 65    | 8                                | 20    | 100    | 9      |
| pb_nec_NE68133_19951001  | NE68133                | NE33    | na          | bjt_gp | NPN       | 200                              | 10    | 65    | 8                                | 20    | 100    | 9      |
| pb_nec_NE68135_19911002  | NE68135                | NEC35   | na          | bjt_gp | NPN       | 295                              | 10    | 65    | 8                                | 20    | 100    | 9      |
| pb_nec_NE68135_19921101  | NE68135                | NEC35   | 4           | eebjt2 | NPN       | 295                              | 10    | 65    | 8                                | 20    | 100    | 9      |
| pb_nec_NE68135_19961101  | NE68135                | NEC35   | na          | bjt_gp | NPN       | 295                              | 10    | 65    | 8                                | 20    | 100    | 9      |
| pb_nec_NE68139_19911002  | NE68139                | NEC39   | na          | bjt_gp | NPN       | 200                              | 10    | 65    | 8                                | 20    | 100    | 9      |
| pb_nec_NE68139_19921101  | NE68139                | NEC39   | 4           | eebjt2 | NPN       | 200                              | 10    | 65    | 8                                | 20    | 100    | 9      |
| pb_nec_NE68139_19960601  | NE68139                | NEC39   | na          | bjt_gp | NPN       | 200                              | 10    | 65    | 8                                | 20    | 100    | 9      |
| pb_nec_NE68339_19921101  | NE68339                | NEC39   | na          | bjt_gp | NPN       | na                               | na    | na    | na                               | na    | na     | na     |
| pb_nec_NE68518_19931201  | NE68518                | NEC18   | 4           | eebjt2 | NPN       | 150                              | 6     | 30    | 3                                | 10    | 110    | 12     |
| pb_nec_NE68518_19960501  | NE68518                | NEC18   | na          | bjt_gp | NPN       | 150                              | 6     | 30    | 3                                | 10    | 110    | 12     |
| pb_nec_NE68519_19931201  | NE68519                | NEC19   | 3           | eebjt2 | NPN       | 100                              | 6     | 30    | 3                                | 10    | 65-175 | 12     |
| pb_nec_NE68519_19960501  | NE68519                | NEC19   | na          | bjt_gp | NPN       | 100                              | 6     | 30    | 3                                | 10    | 65-175 | 12     |
| pb_nec_NE68530D_19950901 | NE68530D               | NEC30   | na          | bjt_gp | NPN       | na                               | na    | na    | na                               | na    | na     | na     |
| pb_nec_NE68530F_19961001 | NE68530F               | NEC30   | na          | bjt_gp | NPN       | na                               | na    | na    | na                               | na    | na     | na     |
| pb_nec_NE68530_19961001  | NE68530                | NEC30   | na          | bjt_gp | NPN       | na                               | na    | na    | na                               | na    | na     | na     |
| pb_nec_NE68533_19950901  | NE68533                | NEC33   | na          | bjt_gp | NPN       | na                               | na    | na    | na                               | na    | na     | na     |
| pb_nec_NE68539_19960601  | NE68539                | NE39    | na          | bjt_gp | NPN       | na                               | na    | na    | na                               | na    | na     | na     |
| pb_nec_NE68618_19960601  | NE68618                | NEC18_3 | na          | bjt_gp | NPN       | na                               | na    | na    | na                               | na    | na     | na     |
| pb_nec_NE68619_19960601  | NE68619                | NEC19   | na          | bjt_gp | NPN       | na                               | na    | na    | na                               | na    | na     | na     |
| pb_nec_NE68630_19960601  | NE68630                | NEC30   | na          | bjt_gp | NPN       | na                               | na    | na    | na                               | na    | na     | na     |
| pb_nec_NE68718_19960501  | NE68718                | NEC18   | na          | bjt_gp | NPN       | na                               | na    | na    | na                               | na    | na     | na     |
| pb_nec_NE68719_19960501  | NE68719                | NEC19   | na          | bjt_gp | NPN       | na                               | na    | na    | na                               | na    | na     | na     |
| pb_nec_NE68730_19961001  | NE68730                | NEC30   | na          | bjt_gp | NPN       | na                               | na    | na    | na                               | na    | na     | na     |
| pb_nec_NE68819_19960501  | NE68819                | NEC19   | na          | bjt_gp | NPN       | na                               | na    | na    | na                               | na    | na     | na     |
| pb_nec_NE68830_19961001  | NE68830                | NEC30   | na          | bjt_gp | NPN       | na                               | na    | na    | na                               | na    | na     | na     |
| pb_nec_NE68839_19961001  | NE68839                | NEC39   | na          | bjt_gp | NPN       | na                               | na    | na    | na                               | na    | na     | na     |
| pb_nec_NE696M01_19970201 | NE696M01               | NEC01   | na          | bjt_gp | NPN       | na                               | na    | na    | na                               | na    | na     | na     |

Table C-5. NEC Packaged BJTs (continued)

| Component Name          | Physical Specification |         |             |        |           | Maximum Electrical Specification |       |       | Typical Electrical Specification |       |        |        |
|-------------------------|------------------------|---------|-------------|--------|-----------|----------------------------------|-------|-------|----------------------------------|-------|--------|--------|
|                         | Part Number            | Package | Term . Type | Mode l | Polarit y | Pdiss mW                         | Vce V | Ic mA | Vce V                            | Ic mA | Hfe    | Ft GHz |
| pb_nec_NE73433_19911002 | NE73433                | NEC33   | 3           | bjt_gp | NPN       | 200                              | 14    | 50    | 10                               | 10    | 100    | 2      |
| pb_nec_NE73433_19921101 | NE73433                | NEC33   | 3           | eebjt2 | NPN       | 200                              | 14    | 50    | 10                               | 10    | 100    | 2      |
| pb_nec_NE73435_19921101 | NEC734                 | NEC35   | na          | bjt_gp | NPN       | na                               | na    | na    | na                               | na    | na     | na     |
| pb_nec_NE73439_19921101 | NE73439                | NEC39   | na          | bjt_gp | NPN       | na                               | na    | na    | na                               | na    | na     | na     |
| pb_nec_NE74014_19911016 | NE74014                | NEC14   | 3           | eebjt2 | NPN       | 5000                             | 25    | 300   | 15                               | 50    | 100    | 2      |
| pb_nec_NE74113_19911016 | NE74113                | NEC13   | 3           | eebjt2 | NPN       | 5000                             | 25    | 300   | 15                               | 70    | 80     | 1.7    |
| pb_nec_NE74114_19911016 | NE74114                | NEC14   | 3           | eebjt2 | NPN       | 5000                             | 25    | 300   | 15                               | 70    | 80     | 1.7    |
| pb_nec_NE85618_19960601 | NE85618                | NEC18   | na          | bjt_gp | NPN       | na                               | na    | na    | na                               | na    | na     | na     |
| pb_nec_NE85619_19931201 | NE85619                | NEC19   | 3           | eebjt2 | NPN       | 100                              | 12    | 100   | 3                                | 7     | 80-160 | 4.5    |
| pb_nec_NE85619_19960501 | NE85619                | NEC19   | na          | bjt_gp | NPN       | 100                              | 12    | 100   | 3                                | 7     | 80-160 | 4.5    |
| pb_nec_NE85630_19921213 | NE85630                | NEC30   | 3           | eebjt2 | NPN       | 150                              | 12    | 100   | 3                                | 7     | 110    | 4.5    |
| pb_nec_NE85630_19961001 | NE85630                | NEC30   | na          | bjt_gp | NPN       | 150                              | 12    | 100   | 3                                | 7     | 110    | 4.5    |
| pb_nec_NE85632_19931201 | NE85632                | NEC32   | 3           | eebjt2 | NPN       | 600                              | 12    | 100   | 10                               | 20    | 120    | 6.5    |
| pb_nec_NE85633_19911002 | NE85633                | SOT23   | 3           | bjt_gp | NPN       | 200                              | 12    | 100   | 10                               | 20    | 120    | 7      |
| pb_nec_NE85633_19921101 | NE85633                | SOT23   | 3           | eebjt2 | NPN       | 200                              | 12    | 100   | 10                               | 20    | 120    | 7      |
| pb_nec_NE85633_19960601 | NE85633                | NEC33   | na          | bjt_gp | NPN       | 200                              | 12    | 100   | 10                               | 20    | 120    | 7      |
| pb_nec_NE85634_19921211 | NE85634                | SOT89   | 3           | eebjt2 | NPN       | 2000                             | 12    | 100   | 10                               | 20    | 120    | 6.5    |
| pb_nec_NE85634_19950901 | NE85634                | NE34    | na          | bjt_gp | NPN       | 2000                             | 12    | 100   | 10                               | 20    | 120    | 6.5    |
| pb_nec_NE85635_19921101 | NE85635                | NEC35   | na          | bjt_gp | NPN       | 580                              | 12    | 100   | 10                               | 20    | 120    | 7      |
| pb_nec_NE85635_19921210 | NE85635                | NEC35   | 4           | eebjt2 | NPN       | 580                              | 12    | 100   | 10                               | 20    | 120    | 7      |
| pb_nec_NE85635_19961101 | NE85635                | NEC35   | na          | bjt_gp | NPN       | 580                              | 12    | 100   | 10                               | 20    | 120    | 7      |
| pb_nec_NE85639_19911002 | NE85639                | NEC39   | na          | bjt_gp | NPN       | 200                              | 12    | 100   | 10                               | 20    | 120    | 9      |
| pb_nec_NE85639_19921101 | NE85639                | NEC39   | 4           | eebjt2 | NPN       | 200                              | 12    | 100   | 10                               | 20    | 120    | 9      |
| pb_nec_NE85639_19960601 | NE85639                | NEC39   | na          | bjt_gp | NPN       | 200                              | 12    | 100   | 10                               | 20    | 120    | 9      |
| pb_nec_NE94430_19960601 | NE94430                | NEC30   | na          | bjt_gp | NPN       | na                               | na    | na    | na                               | na    | na     | na     |
| pb_nec_NE94433_19960601 | NE94433                | NEC33   | na          | bjt_gp | NPN       | na                               | na    | na    | na                               | na    | na     | na     |
| pb_nec_UPA800T_19960801 | UPA800T                | SOT363  | na          | bjt_gp | NPN       | na                               | na    | na    | na                               | na    | na     | na     |

na = not available

Table C-6. Panasonic Packaged BJTs

| Component Name            | Physical Specification |         |            |        |          | Maximum Electrical Specification |       |       | Typical Electrical Specification |       |         |        |
|---------------------------|------------------------|---------|------------|--------|----------|----------------------------------|-------|-------|----------------------------------|-------|---------|--------|
|                           | Part Number            | Package | Term. Type | Mode I | Polarity | Pdiss mW                         | Vce V | Ic mA | Vce V                            | Ic mA | Hfe     | Ft GHz |
| pb_pan_2SC3110_19921211   | 2SC3110                | SOT23   | 3          | eebjt2 | NPN      | 200                              | 12    | 30    | 10                               | 10    | 40      | 4.5    |
| pb_pan_2SC3704_19921211   | 2SC3704                | SOT23   | 3          | eebjt2 | NPN      | 200                              | 10    | 80    | 8                                | 20    | 150     | 6      |
| pb_pan_2SC3930dB_19921211 | 2SC3930-B              | SOT323  | 3          | eebjt2 | NPN      | 150                              | 20    | 30    | 10                               | 1     | 70-140  | 0.25   |
| pb_pan_2SC3930dC_19921211 | 2SC3930-C              | SOT323  | 3          | eebjt2 | NPN      | 150                              | 20    | 30    | 10                               | 1     | 110-220 | 0.25   |
| pb_pan_2SC3931dD_19921211 | 2SC3931-D              | SOT323  | 3          | eebjt2 | NPN      | 150                              | 20    | 15    | 6                                | 1     | 100-260 | 0.65   |
| pb_pan_2SC3932dT_19921211 | 2SC3932-T              | SOT323  | 3          | eebjt2 | NPN      | 150                              | 20    | 50    | 10                               | 15    | 25-250  | 0.8    |
| pb_pan_2SC3934_19921214   | 2SC3934                | SOT323  | 3          | eebjt2 | NPN      | 150                              | 12    | 30    | 10                               | 10    | 40      | 4.5    |
| pb_pan_2SC3935dP_19921215 | 2SC3935-P              | SOT323  | 3          | eebjt2 | NPN      | 150                              | 10    | 50    | 4                                | 5     | 75-130  | 1.9    |
| pb_pan_2SC3935dQ_19921215 | 2SC3935-Q              | SOT323  | 3          | eebjt2 | NPN      | 150                              | 10    | 50    | 4                                | 5     | 110-120 | 1.9    |
| pb_pan_2SC3936dB_19921211 | 2SC3936-B              | SOT323  | 3          | eebjt2 | NPN      | 150                              | 20    | 30    | 10                               | 1     | 70-160  | 0.23   |
| pb_pan_2SC3936dC_19921211 | 2SC3936-C              | SOT323  | 3          | eebjt2 | NPN      | 150                              | 20    | 30    | 10                               | 1     | 110-250 | 0.23   |
| pb_pan_2SC3967_19921215   | 2SC3967                | SOT23   | 3          | eebjt2 | NPN      | 200                              | 20    | 20    | 3.4                              | 1.8   | 40-200  | 1.5    |
| pb_pan_2SC4068_19921214   | 2SC4068                | SOT323  | 3          | eebjt2 | NPN      | 150                              | 20    | 20    | 3.4                              | 1.8   | 40-200  | 1.5    |

# Appendix D: RF Transistor Library Data

Table D-1. Philips Packaged BJTs

| Component Name           | Physical Specification |           |            |        |          | Maximum Electrical Specification |      |       | Typical Electrical Specification |       |         |        |
|--------------------------|------------------------|-----------|------------|--------|----------|----------------------------------|------|-------|----------------------------------|-------|---------|--------|
|                          | Part Number            | Package   | Term. Type | Model  | Polarity | Pdis mW                          | Vc V | Ic mA | Vce V                            | Ic mA | Hfe     | Ft GHz |
| pb_phl_BC847B_19921215   | BC847B                 | SOT23     | 3          | eebjt2 | NPN      | 330                              | 30   | 100   | 5                                | 2     | 200-450 | 0.3    |
| pb_phl_BFG134_19911011   | BFG134                 | SOT103    | 4          | eebjt2 | NPN      | 1000                             | 15   | 150   | 10                               | 100   | 80      | 7      |
| pb_phl_BFG135_19911011   | BFG135                 | SOT223    | 4          | eebjt2 | NPN      | 1000                             | 15   | 150   | 10                               | 100   | 120     | 7      |
| pb_phl_BFG195_19911014   | BFG195                 | SOT103    | 4          | eebjt2 | NPN      | 500                              | 10   | 100   | 8                                | 50    | 40      | 7.5    |
| pb_phl_BFG197X_19911010  | BFG197X                | SOT143    | 4          | eebjt2 | NPN      | 300                              | 10   | 100   | 4                                | 50    | 90      | 7.5    |
| pb_phl_BFG197_19911011   | BFG197                 | SOT143    | 4          | eebjt2 | NPN      | 300                              | 10   | 100   | 4                                | 50    | 90      | 7.5    |
| pb_phl_BFG198_19911009   | BFG198                 | SOT223    | 4          | eebjt2 | NPN      | 1000                             | 10   | 100   | 8                                | 50    | 100     | 8      |
| pb_phl_BFG23_19931201    | BFG23                  | SOT103    | 4          | eebjt2 | PNP      | 180                              | -12  | -35   | -5                               | -30   | 20      | 5      |
| pb_phl_BFG25AX_19911002  | BFG25AX                | SOT143    | 4          | eebjt2 | NPN      | 50                               | 5    | 6.5   | na                               | na    | na      | 5      |
| pb_phl_BFG31_19931130    | BFG31                  | SOT223    | na         | eebjt2 | PNP      | 1500                             | -15  | -100  | -10                              | -70   | 25      | 5      |
| pb_phl_BFG33X_19911002   | BFG33X                 | SOT143    | 4          | eebjt2 | NPN      | 300                              | 7    | 20    | 5                                | 14    | 25      | 12     |
| pb_phl_BFG33_19911002    | BFG33                  | SOT143    | 4          | eebjt2 | NPN      | 300                              | 7    | 20    | 5                                | 14    | 25      | 12     |
| pb_phl_BFG34_19911003    | BFG34                  | SOT103    | 4          | eebjt2 | NPN      | 1000                             | 18   | 150   | 10                               | 100   | 25      | 3.7    |
| pb_phl_BFG35_19911003    | BFG35                  | SOT223    | 4          | eebjt2 | NPN      | 1000                             | 18   | 150   | 10                               | 100   | 140     | 4      |
| pb_phl_BFG505XR_19921213 | BFG505XR               | SOT143R   | 4          | eebjt2 | NPN      | 150                              | 15   | 18    | 6                                | 5     | 120     | 9      |
| pb_phl_BFG505X_19921213  | BFG505X                | SOT143R   | 4          | eebjt2 | NPN      | 150                              | 15   | 18    | 6                                | 5     | 120     | 9      |
| pb_phl_BFG505_19921213   | BFG505                 | SOT143R   | 4          | eebjt2 | NPN      | 150                              | 15   | 18    | 6                                | 5     | 120     | 9      |
| pb_phl_BFG51_19931123    | BFG51                  | SOT103    | 4          | eebjt2 | PNP      | 180                              | -15  | -25   | -10                              | -14   | 20      | 5      |
| pb_phl_BFG520XR_19921214 | BFG520XR               | SOT143R   | 4          | eebjt2 | NPN      | 300                              | 15   | 70    | 6                                | 20    | 120     | 9      |
| pb_phl_BFG520X_19921215  | BFG520X                | SOT143R   | 4          | eebjt2 | NPN      | 300                              | 15   | 70    | 6                                | 20    | 120     | 9      |
| pb_phl_BFG520_19921215   | BFG520                 | SOT143R   | 4          | eebjt2 | NPN      | 300                              | 15   | 70    | 6                                | 20    | 120     | 9      |
| pb_phl_BFG55_19931123    | BFG55                  | SOT223    | 4          | eebjt2 | PNP      | 2700                             | -18  | -150  | -10                              | -100  | 25      | 4      |
| pb_phl_BFG591_19921214   | BFG591                 | SOT223    | 4          | eebjt2 | NPN      | 1200                             | 15   | 200   | 10                               | 90    | 120     | 8      |
| pb_phl_BFG65_19911002    | BFG65                  | SOT103    | 4          | eebjt2 | NPN      | 300                              | 10   | 50    | 8                                | 15    | 60      | 7.5    |
| pb_phl_BFG67R_19911002   | BFG67R                 | SOT143RV2 | 4          | eebjt2 | NPN      | 300                              | 10   | 50    | 8                                | 15    | 100     | 7.5    |
| pb_phl_BFG67XR_19921211  | BFG67XR                | SOT143R   | 4          | eebjt2 | NPN      | 300                              | 10   | 50    | 8                                | 15    | 100     | 7.5    |

Table D-1. Philips Packaged BJTs (continued)

| Component Name           | Physical Specification |           |            |        |          | Maximum Electrical Specification |        |       | Typical Electrical Specification |       |     |        |
|--------------------------|------------------------|-----------|------------|--------|----------|----------------------------------|--------|-------|----------------------------------|-------|-----|--------|
|                          | Part Number            | Package   | Term. Type | Mode I | Polarity | Pdis s mW                        | Vc e V | Ic mA | Vce V                            | Ic mA | Hfe | Ft GHz |
| pb_phl_BFG67X_19911002   | BFG67X                 | SOT143R   | 4          | eebjt2 | NPN      | 300                              | 10     | 50    | 8                                | 15    | 100 | 7.5    |
| pb_phl_BFG67_19911002    | BFG67                  | SOT143RV2 | 4          | eebjt2 | NPN      | 300                              | 10     | 50    | 8                                | 15    | 100 | 7.5    |
| pb_phl_BFG90A_19911002   | BFG90A                 | SOT103    | 4          | eebjt2 | NPN      | 180                              | 15     | 25    | 10                               | 14    | 40  | 5      |
| pb_phl_BFG91A_19911002   | BFG91A                 | SOT103    | 4          | eebjt2 | NPN      | 300                              | 12     | 35    | 5                                | 30    | 40  | 6      |
| pb_phl_BFG92AXR_19921211 | BFG92AXR               | SOT143R   | 4          | eebjt2 | NPN      | 300                              | 15     | 25    | 10                               | 14    | 90  | 5      |
| pb_phl_BFG92AX_19911002  | BFG92AX                | SOT143R   | 4          | eebjt2 | NPN      | 300                              | 15     | 25    | 10                               | 14    | 90  | 5      |
| pb_phl_BFG92A_19911008   | BFG92A                 | SOT143R   | 4          | eebjt2 | NPN      | 300                              | 15     | 25    | 10                               | 14    | 90  | 5      |
| pb_phl_BFG93AXR_19921214 | BFG93AXR               | SOT143R   | 4          | eebjt2 | NPN      | 300                              | 12     | 35    | 5                                | 30    | 90  | 6      |
| pb_phl_BFG93AX_19911002  | BFG93AX                | SOT143R   | 4          | eebjt2 | NPN      | 300                              | 12     | 35    | 5                                | 30    | 90  | 6      |
| pb_phl_BFG93A_19911002   | BFG93A                 | SOT143R   | 4          | eebjt2 | NPN      | 300                              | 12     | 35    | 5                                | 30    | 90  | 6      |
| pb_phl_BFG94_19911002    | BFG94                  | SOT223    | 4          | eebjt2 | NPN      | 700                              | 12     | 60    | 5                                | 30    | 90  | 6      |
| pb_phl_BFG96_19911008    | BFG96                  | SOT103    | 4          | eebjt2 | NPN      | 700                              | 15     | 75    | 10                               | 50    | 25  | 5      |
| pb_phl_BFG97_19911008    | BFG97                  | SOT223    | 4          | eebjt2 | NPN      | 1000                             | 15     | 100   | 10                               | 70    | 90  | 5.5    |
| pb_phl_BFQ19_19911025    | BFQ19                  | SOT89V2   | 3          | eebjt2 | NPN      | 500                              | 15     | 75    | 10                               | 50    | 50  | 5      |
| pb_phl_BFQ23_19931201    | BFQ23                  | SOT37     | 3          | eebjt2 | PNP      | 180                              | -12    | -35   | -5                               | -30   | 20  | 5      |
| pb_phl_BFQ32S_19931124   | BFQ32S                 | SOT37     | 3          | eebjt2 | PNP      | 700                              | -15    | -100  | -10                              | -70   | 20  | 4.5    |
| pb_phl_BFQ34T_19911008   | BFQ34T                 | SOT37     | 3          | eebjt2 | NPN      | 1000                             | 18     | 150   | 10                               | 100   | 25  | 3.7    |
| pb_phl_BFQ51_19931130    | BFQ51                  | SOT37     | 3          | eebjt2 | PNP      | 180                              | -15    | -25   | -10                              | -14   | 20  | 5      |
| pb_phl_BFQ65_19911003    | BFQ65                  | SOT37     | 3          | eebjt2 | NPN      | 300                              | 10     | 50    | 8                                | 15    | 100 | 7.5    |
| pb_phl_BFQ67W_19921215   | BFQ67W                 | SOT323    | 3          | eebjt2 | NPN      | 300                              | 10     | 50    | 8                                | 15    | 100 | 8      |
| pb_phl_BFQ67_19911017    | BFQ67                  | SOT323    | 3          | eebjt2 | NPN      | 300                              | 10     | 50    | 8                                | 15    | 100 | 8      |
| pb_phl_BFR106_19911008   | BFR106                 | SOT23     | 3          | eebjt2 | NPN      | 350                              | 15     | 100   | 8                                | 20    | 25  | 3.3    |
| pb_phl_BFR134_19911011   | BFR134                 | SOT37     | 3          | eebjt2 | NPN      | 1000                             | 15     | 150   | 10                               | 100   | 80  | 7      |
| pb_phl_BFR520_19921214   | BFR520                 | SOT23     | 3          | eebjt2 | NPN      | 300                              | 15     | 70    | 6                                | 20    | 120 | 9      |
| pb_phl_BFR90A_19911008   | BFR90A                 | SOT37     | 3          | eebjt2 | NPN      | 180                              | 15     | 25    | 10                               | 14    | 90  | 5      |
| pb_phl_BFR91A_19911003   | BFR91A                 | SOT37     | 3          | eebjt2 | NPN      | 300                              | 12     | 35    | 5                                | 30    | 90  | 6      |
| pb_phl_BFR92A_19921214   | BFR92A                 | SOT23     | 3          | eebjt2 | NPN      | 300                              | 15     | 25    | 10                               | 14    | 90  | 5      |
| pb_phl_BFR93AW_19921214  | BFR93AW                | SOT323    | 3          | eebjt2 | NPN      | 300                              | 12     | 35    | 5                                | 30    | 90  | 6      |
| pb_phl_BFR93A_19911003   | BFR93A                 | SOT323    | 3          | eebjt2 | NPN      | 300                              | 12     | 35    | 5                                | 30    | 90  | 6      |

Table D-1. Philips Packaged BJTs (continued)

| Component Name         | Physical Specification |         |            |        |          | Maximum Electrical Specification |        |       | Typical Electrical Specification |       |     |        |
|------------------------|------------------------|---------|------------|--------|----------|----------------------------------|--------|-------|----------------------------------|-------|-----|--------|
|                        | Part Number            | Package | Term. Type | Mode I | Polarity | Pdis s mW                        | Vc e V | Ic mA | Vce V                            | Ic mA | Hfe | Ft GHz |
| pb_phl_BFR93_19911003  | BFR93                  | SOT323  | 3          | eebjt2 | NPN      | 300                              | 12     | 35    | 5                                | 30    | 50  | 6      |
| pb_phl_BFR96S_19911014 | BFR96S                 | SOT37   | 3          | eebjt2 | NPN      | 700                              | 15     | 100   | 10                               | 70    | 25  | 5      |
| pb_phl_BFS20_19910228  | BFS20                  | SOT23   | 3          | eebjt2 | NPN      | 200                              | 20     | 25    | 10                               | 5     | 85  | 0.45   |
| pb_phl_BFS25A_19921211 | BFS25A                 | SOT323  | 3          | eebjt2 | NPN      | 32                               | 5      | 6.5   | 1                                | 0.5   | 80  | 5      |
| pb_phl_BFS505_19921214 | BFS505                 | SOT323  | 3          | eebjt2 | NPN      | 150                              | 15     | 18    | 6                                | 5     | 120 | 9      |
| pb_phl_BFS520_19921214 | BFS520                 | SOT323  | 3          | eebjt2 | NPN      | 300                              | 15     | 70    | 6                                | 20    | 120 | 9      |
| pb_phl_BFT25A_19911003 | BFT25A                 | SOT23   | 3          | eebjt2 | NPN      | 300                              | 5      | 6.5   | 1                                | 1     | 30  | 2.3    |
| pb_phl_BFT92_19931130  | BFT92                  | SOT23   | 3          | eebjt2 | PNP      | 200                              | -15    | -25   | -10                              | -14   | 50  | 5      |
| pb_phl_BLT80_19921214  | BLT80                  | SOT223  | 4          | eebjt2 | NPN      | 2000                             | 10     | 250   | 5                                | 150   | 25  | na     |
| pb_phl_BLU98_19911008  | BLU98                  | SOT103  | 4          | eebjt2 | NPN      | 1000                             | 16     | 150   | 13                               | 100   | 25  | 4      |
| na = not available     |                        |         |            |        |          |                                  |        |       |                                  |       |     |        |

Table D-2. Siemens Packaged BJTs

| Component Name        | Physical Specification |         |             |        |           | Maximum Electrical Specification |       |       | Typical Electrical Specification |       |     |        |
|-----------------------|------------------------|---------|-------------|--------|-----------|----------------------------------|-------|-------|----------------------------------|-------|-----|--------|
|                       | Part Number            | Package | Term . Type | Mode l | Polarit y | Pdiss mW                         | Vce V | Ic mA | Vce V                            | Ic mA | Hfe | Ft GHz |
| pb_sms_BC327_19961209 | BC327                  | SOT23   | na          | bjt_gp | PNP       | na                               | na    | na    | na                               | na    | na  | na     |
| pb_sms_BC328_19961209 | BC328                  | SOT23   | na          | bjt_gp | PNP       | na                               | na    | na    | na                               | na    | na  | na     |
| pb_sms_BC337_19961209 | BC337                  | SOT23   | na          | bjt_gp | NPN       | na                               | na    | na    | na                               | na    | na  | na     |
| pb_sms_BC338_19961209 | BC338                  | SOT23   | na          | bjt_gp | NPN       | na                               | na    | na    | na                               | na    | na  | na     |
| pb_sms_BC368_19961209 | BC368                  | SOT23   | na          | bjt_gp | NPN       | na                               | na    | na    | na                               | na    | na  | na     |
| pb_sms_BC369_19961209 | BC369                  | SOT23   | na          | bjt_gp | PNP       | na                               | na    | na    | na                               | na    | na  | na     |
| pb_sms_BC635_19961209 | BC635                  | SOT23   | na          | bjt_gp | NPN       | na                               | na    | na    | na                               | na    | na  | na     |
| pb_sms_BC636_19961209 | BC636                  | SOT23   | na          | bjt_gp | PNP       | na                               | na    | na    | na                               | na    | na  | na     |
| pb_sms_BC637_19961209 | BC637                  | SOT23   | na          | bjt_gp | NPN       | na                               | na    | na    | na                               | na    | na  | na     |
| pb_sms_BC638_19961209 | BC638                  | SOT23   | na          | bjt_gp | PNP       | na                               | na    | na    | na                               | na    | na  | na     |
| pb_sms_BC639_19961209 | BC639                  | SOT23   | na          | bjt_gp | NPN       | na                               | na    | na    | na                               | na    | na  | na     |
| pb_sms_BC640_19961209 | BC640                  | SOT23   | na          | bjt_gp | PNP       | na                               | na    | na    | na                               | na    | na  | na     |
| pb_sms_BC807_19961209 | BC807                  | SOT23   | na          | bjt_gp | PNP       | na                               | na    | na    | na                               | na    | na  | na     |
| pb_sms_BC808_19961209 | BC808                  | SOT23   | na          | bjt_gp | PNP       | na                               | na    | na    | na                               | na    | na  | na     |
| pb_sms_BC817_19961209 | BC817                  | SOT23   | na          | bjt_gp | NPN       | na                               | na    | na    | na                               | na    | na  | na     |
| pb_sms_BC818_19961209 | BC818                  | SOT23   | na          | bjt_gp | NPN       | na                               | na    | na    | na                               | na    | na  | na     |
| pb_sms_BC846_19961209 | BC846                  | SOT23   | na          | bjt_gp | NPN       | na                               | na    | na    | na                               | na    | na  | na     |
| pb_sms_BC847_19961209 | BC847                  | SOT23   | na          | bjt_gp | NPN       | na                               | na    | na    | na                               | na    | na  | na     |
| pb_sms_BC848_19961209 | BC848                  | SOT23   | na          | bjt_gp | NPN       | na                               | na    | na    | na                               | na    | na  | na     |
| pb_sms_BC849_19961209 | BC849                  | SOT23   | na          | bjt_gp | NPN       | na                               | na    | na    | na                               | na    | na  | na     |
| pb_sms_BC850_19961209 | BC850                  | SOT23   | na          | bjt_gp | NPN       | na                               | na    | na    | na                               | na    | na  | na     |
| pb_sms_BC856_19961209 | BC856                  | SOT23   | na          | bjt_gp | PNP       | na                               | na    | na    | na                               | na    | na  | na     |
| pb_sms_BC857_19961209 | BC857                  | SOT23   | na          | bjt_gp | PNP       | na                               | na    | na    | na                               | na    | na  | na     |
| pb_sms_BC858_19961209 | BC858                  | SOT23   | na          | bjt_gp | PNP       | na                               | na    | na    | na                               | na    | na  | na     |
| pb_sms_BC859_19961209 | BC859                  | SOT23   | na          | bjt_gp | PNP       | na                               | na    | na    | na                               | na    | na  | na     |
| pb_sms_BC860_19961209 | BC860                  | SOT23   | na          | bjt_gp | PNP       | na                               | na    | na    | na                               | na    | na  | na     |
| pb_sms_BCP51_19961209 | BCP51                  | SOT223  | na          | bjt_gp | PNP       | na                               | na    | na    | na                               | na    | na  | na     |
| pb_sms_BCP52_19961209 | BCP52                  | SOT223  | na          | bjt_gp | PNP       | na                               | na    | na    | na                               | na    | na  | na     |
| pb_sms_BCP53_19961209 | BCP53                  | SOT223  | na          | bjt_gp | PNP       | na                               | na    | na    | na                               | na    | na  | na     |

Table D-2. Siemens Packaged BJTs (continued)

| Component Name        | Physical Specification |         |             |        |           | Maximum Electrical Specification |       |       | Typical Electrical Specification |       |        |        |
|-----------------------|------------------------|---------|-------------|--------|-----------|----------------------------------|-------|-------|----------------------------------|-------|--------|--------|
|                       | Part Number            | Package | Term . Type | Mode I | Polarit y | Pdiss mW                         | Vce V | Ic mA | Vce V                            | Ic mA | Hfe    | Ft GHz |
| pb_sms_BCP54_19961209 | BCP54                  | SOT223  | na          | bjt_gp | NPN       | na                               | na    | na    | na                               | na    | na     | na     |
| pb_sms_BCP55_19961209 | BCP55                  | SOT223  | na          | bjt_gp | NPN       | na                               | na    | na    | na                               | na    | na     | na     |
| pb_sms_BCP68_19961209 | BCP68                  | SOT223  | na          | bjt_gp | NPN       | na                               | na    | na    | na                               | na    | na     | na     |
| pb_sms_BCP69_19961209 | BCP69                  | SOT223  | na          | bjt_gp | PNP       | na                               | na    | na    | na                               | na    | na     | na     |
| pb_sms_BCV61_19961209 | BCV61                  | SOT143  | na          | bjt_gp | PNP       | na                               | na    | na    | na                               | na    | na     | na     |
| pb_sms_BCW60_19961209 | BCW60                  | SOT23   | na          | bjt_gp | NPN       | na                               | na    | na    | na                               | na    | na     | na     |
| pb_sms_BCW61_19961209 | BCW61                  | SOT23   | na          | bjt_gp | PNP       | na                               | na    | na    | na                               | na    | na     | na     |
| pb_sms_BCW65_19961209 | BCW65                  | SOT23   | na          | bjt_gp | NPN       | na                               | na    | na    | na                               | na    | na     | na     |
| pb_sms_BCW66_19961209 | BCW66                  | SOT23   | na          | bjt_gp | NPN       | na                               | na    | na    | na                               | na    | na     | na     |
| pb_sms_BCW68_19961209 | BCW68                  | SOT23   | na          | bjt_gp | PNP       | na                               | na    | na    | na                               | na    | na     | na     |
| pb_sms_BCX41_19961209 | BCX41                  | SOT23   | na          | bjt_gp | NPN       | na                               | na    | na    | na                               | na    | na     | na     |
| pb_sms_BCX42_19961209 | BCX42                  | SOT23   | na          | bjt_gp | NPN       | na                               | na    | na    | na                               | na    | na     | na     |
| pb_sms_BCX51_19961209 | BCX51                  | SOT89   | na          | bjt_gp | PNP       | na                               | na    | na    | na                               | na    | na     | na     |
| pb_sms_BCX52_19961209 | BCX52                  | SOT89   | na          | bjt_gp | PNP       | na                               | na    | na    | na                               | na    | na     | na     |
| pb_sms_BCX53_19961209 | BCX53                  | SOT89   | na          | bjt_gp | PNP       | na                               | na    | na    | na                               | na    | na     | na     |
| pb_sms_BCX54_19961209 | BCX54                  | SOT89   | na          | bjt_gp | NPN       | na                               | na    | na    | na                               | na    | na     | na     |
| pb_sms_BCX55_19961209 | BCX55                  | SOT89   | na          | bjt_gp | NPN       | na                               | na    | na    | na                               | na    | na     | na     |
| pb_sms_BCX56_19961209 | BCX56                  | SOT89   | na          | bjt_gp | NPN       | na                               | na    | na    | na                               | na    | na     | na     |
| pb_sms_BCX58_19961209 | BCX58                  | SOT89   | na          | bjt_gp | PNP       | na                               | na    | na    | na                               | na    | na     | na     |
| pb_sms_BCX59_19961209 | BCX59                  | SOT89   | na          | bjt_gp | PNP       | na                               | na    | na    | na                               | na    | na     | na     |
| pb_sms_BCX68_19961209 | BCX68                  | SOT89   | na          | bjt_gp | NPN       | na                               | na    | na    | na                               | na    | na     | na     |
| pb_sms_BCX69_19961209 | BCX69                  | SOT89   | na          | bjt_gp | PNP       | na                               | na    | na    | na                               | na    | na     | na     |
| pb_sms_BCX70_19961209 | BCX70                  | SOT23   | na          | bjt_gp | NPN       | na                               | na    | na    | na                               | na    | na     | na     |
| pb_sms_BCX71_19961209 | BCX71                  | SOT23   | na          | bjt_gp | PNP       | na                               | na    | na    | na                               | na    | na     | na     |
| pb_sms_BF420_19961209 | BF420                  | TO92    | na          | bjt_gp | NPN       | na                               | na    | na    | na                               | na    | na     | na     |
| pb_sms_BF421_19961209 | BF421                  | TO92    | na          | bjt_gp | PNP       | na                               | na    | na    | na                               | na    | na     | na     |
| pb_sms_BF422_19961209 | BF422                  | TO92    | na          | bjt_gp | NPN       | na                               | na    | na    | na                               | na    | na     | na     |
| pb_sms_BF423_19961209 | BF423                  | TO92    | na          | bjt_gp | PNP       | na                               | na    | na    | na                               | na    | na     | na     |
| pb_sms_BF550_19931122 | BF550                  | SOT23   | 3           | eebjt2 | PNP       | 280                              | -40   | -25   | -10                              | -1    | 50-250 | 0.35   |

Table D-2. Siemens Packaged BJTs (continued)

| Component Name          | Physical Specification |         |             |        |           | Maximum Electrical Specification |       |       | Typical Electrical Specification |       |        |        |
|-------------------------|------------------------|---------|-------------|--------|-----------|----------------------------------|-------|-------|----------------------------------|-------|--------|--------|
|                         | Part Number            | Package | Term . Type | Mode l | Polarit y | Pdiss mW                         | Vce V | Ic mA | Vce V                            | Ic mA | Hfe    | Ft GHz |
| pb_sms_BF554_19911021   | BF554                  | SOT23   | 3           | eebjt2 | NPN       | 280                              | 20    | 30    | 10                               | 1     | 60-250 | 0.25   |
| pb_sms_BF569_19931122   | BF569                  | SOT23   | 3           | eebjt2 | PNP       | 280                              | -35   | -30   | -10                              | -3    | 50     | 0.95   |
| pb_sms_BF579_19931130   | BF579                  | SOT23   | 3           | eebjt2 | PNP       | 280                              | -20   | -30   | -10                              | -10   | 20     | 1.6    |
| pb_sms_BF599_19921213   | BF599                  | SOT23   | 3           | eebjt2 | NPN       | 280                              | 25    | 25    | 10                               | 5     | 70     | 0.55   |
| pb_sms_BF603_19961209   | BF603                  | TO72    | na          | bjt_gp | PNP       | na                               | na    | na    | na                               | na    | na     | na     |
| pb_sms_BF622_19961209   | BF622                  | SOT89   | na          | bjt_gp | NPN       | na                               | na    | na    | na                               | na    | na     | na     |
| pb_sms_BF623_19961209   | BF623                  | SOT89   | na          | bjt_gp | PNP       | na                               | na    | na    | na                               | na    | na     | na     |
| pb_sms_BF660_19931122   | BF660                  | SOT23   | 3           | eebjt2 | PNP       | 280                              | -30   | -25   | -10                              | -5    | 30     | 0.7    |
| pb_sms_BF720_19961209   | BF720                  | SOT223  | na          | bjt_gp | NPN       | na                               | na    | na    | na                               | na    | na     | na     |
| pb_sms_BF721_19961209   | BF721                  | SOT223  | na          | bjt_gp | PNP       | na                               | na    | na    | na                               | na    | na     | na     |
| pb_sms_BF722_19961209   | BF722                  | SOT223  | na          | bjt_gp | NPN       | na                               | na    | na    | na                               | na    | na     | na     |
| pb_sms_BF723_19961209   | BF723                  | SOT223  | na          | bjt_gp | PNP       | na                               | na    | na    | na                               | na    | na     | na     |
| pb_sms_BF775A_19921101  | BF775A                 | SOT23   | 3           | bjt_gp | NPN       | na                               | na    | na    | na                               | na    | na     | na     |
| pb_sms_BF799W_19961209  | BF799W                 | SOT23   | 3           | bjt_gp | NPN       | na                               | na    | na    | na                               | na    | na     | na     |
| pb_sms_BF799_19911017   | BF799                  | SOT23   | na          | eebjt2 | NPN       | 280                              | 20    | 35    | 8                                | 20    | 100    | 1.1    |
| pb_sms_BF799_19961209   | BF799                  | SOT23   | na          | bjt_gp | NPN       | 280                              | 20    | 35    | 8                                | 20    | 100    | 1.1    |
| pb_sms_BFG135A_19911008 | BFG135A                | SOT223  | na          | bjt_gp | NPN       | 280                              | 20    | 35    | 8                                | 20    | 50-250 | 1.1    |
| pb_sms_BFG135A_19921101 | BFG135A                | SOT223  | 4           | eebjt2 | NPN       | 280                              | 20    | 35    | 8                                | 20    | 50-250 | 1.1    |
| pb_sms_BFG135A_19960901 | BFG135A                | SOT2232 | na          | bjt_gp | NPN       | 280                              | 20    | 35    | 8                                | 20    | 50-250 | 1.1    |
| pb_sms_BFG193_19911008  | BFG193                 | SOT223  | na          | eebjt2 | NPN       | 600                              | 12    | 80    | 8                                | 50    | 100    | 8      |
| pb_sms_BFG193_19960901  | BFG193                 | SOT223  | na          | bjt_gp | NPN       | 600                              | 12    | 80    | 8                                | 50    | 100    | 8      |
| pb_sms_BFG194_19931201  | BFG194                 | SOT223  | 4           | eebjt2 | PNP       | 1000                             | -15   | -100  | -10                              | -70   | 50     | 4.5    |
| pb_sms_BFG194_19960901  | BFG194                 | SOT223  | na          | bjt_gp | PNP       | 1000                             | -15   | -100  | -10                              | -70   | 50     | 4.5    |
| pb_sms_BFG196_19911008  | BFG196                 | SOT223  | na          | bjt_gp | NPN       | 1000                             | -15   | -100  | -10                              | -70   | 50-250 | 4.5    |
| pb_sms_BFG196_19921101  | BFG196                 | SOT223  | 4           | eebjt2 | NPN       | 1000                             | -15   | -100  | -10                              | -70   | 50-250 | 4.5    |
| pb_sms_BFG196_19960901  | BFG196                 | SOT223  | na          | bjt_gp | NPN       | 1000                             | -15   | -100  | -10                              | -70   | 50-250 | 4.5    |
| pb_sms_BFG19S_19911008  | BFG19S                 | SOT223  | 4           | eebjt2 | NPN       | 1000                             | 15    | 100   | 10                               | 70    | 95     | 1.5    |
| pb_sms_BFG19S_19960901  | BFG19S                 | SOT223  | na          | bjt_gp | NPN       | 1000                             | 15    | 100   | 10                               | 70    | 95     | 1.5    |
| pb_sms_BFG235_19911008  | BFG235                 | SOT223  | 4           | eebjt2 | NPN       | 2000                             | 12    | 300   | 8                                | 240   | 125    | 6      |

Table D-2. Siemens Packaged BJTs (continued)

| Component Name          | Physical Specification |         |             |        |           | Maximum Electrical Specification |       |       | Typical Electrical Specification |       |        |        |
|-------------------------|------------------------|---------|-------------|--------|-----------|----------------------------------|-------|-------|----------------------------------|-------|--------|--------|
|                         | Part Number            | Package | Term . Type | Mode l | Polarit y | Pdiss mW                         | Vce V | Ic mA | Vce V                            | Ic mA | Hfe    | Ft GHz |
| pb_sms_BFG235_19960901  | BFG235                 | SOT223  | na          | bjt_gp | NPN       | 2000                             | 12    | 300   | 8                                | 240   | 125    | 6      |
| pb_sms_BFN16_19961209   | BFN16                  | SOT89   | na          | bjt_gp | NPN       | na                               | na    | na    | na                               | na    | na     | na     |
| pb_sms_BFN17_19961209   | BFN17                  | SOT89   | na          | bjt_gp | PNP       | na                               | na    | na    | na                               | na    | na     | na     |
| pb_sms_BFN18_19961209   | BFN18                  | SOT89   | na          | bjt_gp | NPN       | na                               | na    | na    | na                               | na    | na     | na     |
| pb_sms_BFN19_19961209   | BFN19                  | SOT89   | na          | bjt_gp | PNP       | na                               | na    | na    | na                               | na    | na     | na     |
| pb_sms_BFN21_19961209   | BFN21                  | SOT23   | na          | bjt_gp | PNP       | na                               | na    | na    | na                               | na    | na     | na     |
| pb_sms_BFN22_19961209   | BFN22                  | SOT23   | na          | bjt_gp | NPN       | na                               | na    | na    | na                               | na    | na     | na     |
| pb_sms_BFN23_19961209   | BFN23                  | SOT23   | na          | bjt_gp | PNP       | na                               | na    | na    | na                               | na    | na     | na     |
| pb_sms_BFN24_19961209   | BFN24                  | SOT23   | na          | bjt_gp | NPN       | na                               | na    | na    | na                               | na    | na     | na     |
| pb_sms_BFN25_19961209   | BFN25                  | SOT23   | na          | bjt_gp | PNP       | na                               | na    | na    | na                               | na    | na     | na     |
| pb_sms_BFN26_19961209   | BFN26                  | SOT23   | na          | bjt_gp | NPN       | na                               | na    | na    | na                               | na    | na     | na     |
| pb_sms_BFN27_19961209   | BFN27                  | SOT23   | na          | bjt_gp | PNP       | na                               | na    | na    | na                               | na    | na     | na     |
| pb_sms_BFN36_19961209   | BFN36                  | SOT223  | na          | bjt_gp | NPN       | na                               | na    | na    | na                               | na    | na     | na     |
| pb_sms_BFN37_19961209   | BFN37                  | SOT223  | na          | bjt_gp | PNP       | na                               | na    | na    | na                               | na    | na     | na     |
| pb_sms_BFN39_19961209   | BFN39                  | SOT223  | na          | bjt_gp | PNP       | na                               | na    | na    | na                               | na    | na     | na     |
| pb_sms_BFP136W_19960901 | BFP136W                | SOT343  | na          | bjt_gp | NPN       | na                               | na    | na    | na                               | na    | na     | na     |
| pb_sms_BFP180W_19960901 | BFP180W                | SOT343  | na          | bjt_gp | NPN       | na                               | na    | na    | na                               | na    | na     | na     |
| pb_sms_BFP180_19911014  | BFP180                 | SOT143  | na          | bjt_gp | NPN       | 2000                             | 12    | 300   | 8                                | 240   | 50-250 | 6      |
| pb_sms_BFP180_19921101  | BFP180                 | SOT143  | 4           | eebjt2 | NPN       | 2000                             | 12    | 300   | 8                                | 240   | 50-250 | 6      |
| pb_sms_BFP180_19960901  | BFP180                 | SOT143  | na          | bjt_gp | NPN       | 2000                             | 12    | 300   | 8                                | 240   | 50-250 | 6      |
| pb_sms_BFP181W_19960901 | BFP181W                | SOT343  | na          | bjt_gp | NPN       | na                               | na    | na    | na                               | na    | na     | na     |
| pb_sms_BFP181_19911010  | BFP181                 | SOT143  | na          | bjt_gp | NPN       | 175                              | 12    | 20    | 8                                | 10    | 100    | 8      |
| pb_sms_BFP181_19921101  | BFP181                 | SOT143  | 4           | eebjt2 | NPN       | 175                              | 12    | 20    | 8                                | 10    | 100    | 8      |
| pb_sms_BFP181_19960901  | BFP181                 | SOT143  | na          | bjt_gp | NPN       | 175                              | 12    | 20    | 8                                | 10    | 100    | 8      |
| pb_sms_BFP182W_19960901 | BFP182W                | SOT343  | na          | bjt_gp | NPN       | na                               | na    | na    | na                               | na    | na     | na     |
| pb_sms_BFP182_19911010  | BFP182                 | SOT143  | na          | bjt_gp | NPN       | 175                              | 12    | 20    | 8                                | 10    | 50-250 | 8      |
| pb_sms_BFP182_19921101  | BFP182                 | SOT143  | 4           | eebjt2 | NPN       | 175                              | 12    | 20    | 8                                | 10    | 50-250 | 8      |
| pb_sms_BFP182_19960901  | BFP182                 | SOT143  | na          | bjt_gp | NPN       | 175                              | 12    | 20    | 8                                | 10    | 50-250 | 8      |
| pb_sms_BFP183W_19960901 | BFP183W                | SOT343  | na          | bjt_gp | NPN       | na                               | na    | na    | na                               | na    | na     | na     |

Table D-2. Siemens Packaged BJTs (continued)

| Component Name          | Physical Specification |         |             |        |           | Maximum Electrical Specification |       |       | Typical Electrical Specification |       |        |        |
|-------------------------|------------------------|---------|-------------|--------|-----------|----------------------------------|-------|-------|----------------------------------|-------|--------|--------|
|                         | Part Number            | Package | Term . Type | Mode l | Polarit y | Pdiss mW                         | Vce V | Ic mA | Vce V                            | Ic mA | Hfe    | Ft GHz |
| pb_sms_BFP183_19911010  | BFP183                 | SOT143  | na          | bjt_gp | NPN       | 250                              | 12    | 35    | 8                                | 30    | 50-250 | 8      |
| pb_sms_BFP183_19921101  | BFP183                 | SOT143  | 4           | eebjt2 | NPN       | 250                              | 12    | 35    | 8                                | 30    | 50-250 | 8      |
| pb_sms_BFP183_19960901  | BFP183                 | SOT143  | na          | bjt_gp | NPN       | 250                              | 12    | 35    | 8                                | 30    | 50-250 | 8      |
| pb_sms_BFP193W_19960901 | BFP193W                | SOT343  | na          | bjt_gp | NPN       | na                               | na    | na    | na                               | na    | na     | na     |
| pb_sms_BFP193_19911010  | BFP193                 | SOT143  | na          | bjt_gp | NPN       | 450                              | 12    | 65    | 8                                | 30    | 50-250 | 8      |
| pb_sms_BFP193_19921101  | BFP193                 | SOT143  | 4           | eebjt2 | NPN       | 450                              | 12    | 65    | 8                                | 30    | 50-250 | 8      |
| pb_sms_BFP193_19960901  | BFP193                 | SOT143  | na          | bjt_gp | NPN       | 450                              | 12    | 65    | 8                                | 30    | 50-250 | 8      |
| pb_sms_BFP194_19960901  | BFP194                 | SOT143  | na          | bjt_gp | PNP       | na                               | na    | na    | na                               | na    | na     | na     |
| pb_sms_BFP196W_19960901 | BFP196W                | SOT343  | na          | bjt_gp | NPN       | na                               | na    | na    | na                               | na    | na     | na     |
| pb_sms_BFP196_19911008  | BFP196                 | SOT143  | na          | bjt_gp | NPN       | 400                              | 12    | 80    | 8                                | 30    | 50-250 | 8      |
| pb_sms_BFP196_19921101  | BFP196                 | SOT143  | 4           | eebjt2 | NPN       | 400                              | 12    | 80    | 8                                | 30    | 50-250 | 8      |
| pb_sms_BFP196_19960901  | BFP196                 | SOT143  | na          | bjt_gp | NPN       | 400                              | 12    | 80    | 8                                | 30    | 50-250 | 8      |
| pb_sms_BFP22_19961209   | BFP22                  | SOT23   | na          | bjt_gp | NPN       | na                               | na    | na    | na                               | na    | na     | na     |
| pb_sms_BFP23_19961209   | BFP23                  | SOT23   | na          | bjt_gp | PNP       | na                               | na    | na    | na                               | na    | na     | na     |
| pb_sms_BFP25_19961209   | BFP25                  | SOT23   | na          | bjt_gp | NPN       | na                               | na    | na    | na                               | na    | na     | na     |
| pb_sms_BFP26_19961209   | BFP26                  | DIE     | na          | bjt_gp | PNP       | na                               | na    | na    | na                               | na    | na     | na     |
| pb_sms_BFP280W_19960901 | BFP280W                | SOT343  | na          | bjt_gp | NPN       | na                               | na    | na    | na                               | na    | na     | na     |
| pb_sms_BFP280_19911010  | BFP280                 | SOT143  | 4           | eebjt2 | NPN       | 80                               | 8     | 10    | 5                                | 6     | 100    | 7      |
| pb_sms_BFP280_19960901  | BFP280                 | SOT143  | na          | bjt_gp | NPN       | 80                               | 8     | 10    | 5                                | 6     | 100    | 7      |
| pb_sms_BFP405_19960901  | BFP405                 | SOT343  | na          | bjt_gp | NPN       | na                               | na    | na    | na                               | na    | na     | na     |
| pb_sms_BFP420_19960901  | BFP420                 | SOT343  | na          | bjt_gp | NPN       | na                               | na    | na    | na                               | na    | na     | na     |
| pb_sms_BFP450_19960901  | BFP450                 | SOT343  | na          | bjt_gp | NPN       | na                               | na    | na    | na                               | na    | na     | na     |
| pb_sms_BFP81_19911008   | BFP81                  | SOT143  | na          | bjt_gp | NPN       | 280                              | 16    | 30    | 10                               | 15    | 50     | 5.8    |
| pb_sms_BFP81_19921101   | BFP81                  | SOT143  | 4           | eebjt2 | NPN       | 280                              | 16    | 30    | 10                               | 15    | 50     | 5.8    |
| pb_sms_BFP81_19960901   | BFP81                  | SOT143  | na          | bjt_gp | NPN       | 280                              | 16    | 30    | 10                               | 15    | 50     | 5.8    |
| pb_sms_BFP93A_19911009  | BFP93A                 | SOT143  | 4           | eebjt2 | NPN       | 280                              | 12    | 50    | 8                                | 30    | 90     | 5.5    |
| pb_sms_BFP93A_19960901  | BFP93A                 | SOT143  | na          | bjt_gp | NPN       | 280                              | 12    | 50    | 8                                | 30    | 90     | 5.5    |
| pb_sms_BFQ17P_19911008  | BFQ17P                 | SOT89V2 | 3           | eebjt2 | NPN       | 1000                             | 25    | 150   | 5                                | 150   | >25    | 1.2    |
| pb_sms_BFQ180_19921101  | BFQ180                 | CERECX  | na          | bjt_gp | NPN       | 1000                             | 25    | 150   | 5                                | 150   | 50-250 | 1.2    |

Table D-2. Siemens Packaged BJTs (continued)

| Component Name         | Physical Specification |         |             |        |           | Maximum Electrical Specification |       |       | Typical Electrical Specification |       |        |        |
|------------------------|------------------------|---------|-------------|--------|-----------|----------------------------------|-------|-------|----------------------------------|-------|--------|--------|
|                        | Part Number            | Package | Term . Type | Mode l | Polarit y | Pdiss mW                         | Vce V | Ic mA | Vce V                            | Ic mA | Hfe    | Ft GHz |
| pb_sms_BFQ181_19911008 | BFQ181                 | CERECX  | 4           | eebjt2 | NPN       | 175                              | 12    | 20    | 8                                | 10    | 100    | 8      |
| pb_sms_BFQ182_19911009 | BFQ182                 | CERECX  | 4           | bjt_gp | NPN       | 175                              | 12    | 20    | 8                                | 10    | 50-250 | 8      |
| pb_sms_BFQ182_19921101 | BFQ182                 | CERECX  | 4           | eebjt2 | NPN       | 175                              | 12    | 20    | 8                                | 10    | 50-250 | 8      |
| pb_sms_BFQ193_19911009 | BFQ193                 | SOT89V2 | 3           | eebjt2 | NPN       | 600                              | 12    | 80    | 8                                | 50    | 100    | 7.5    |
| pb_sms_BFQ194_19931122 | BFQ194                 | CERECX  | 4           | eebjt2 | PNP       | 650                              | -15   | -100  | -10                              | -70   | 50     | 4.5    |
| pb_sms_BFQ196_19911008 | BFQ196                 | CERECX  | na          | bjt_gp | NPN       | 650                              | -15   | -100  | -10                              | -70   | 50-250 | 4.5    |
| pb_sms_BFQ196_19921101 | BFQ196                 | CERECX  | 4           | eebjt2 | NPN       | 650                              | -15   | -100  | -10                              | -70   | 50-250 | 4.5    |
| pb_sms_BFQ19S_19911009 | BFQ19S                 | SOT89V2 | 3           | eebjt2 | NPN       | 1000                             | 15    | 75    | 10                               | 70    | 70     | 5.1    |
| pb_sms_BFQ29P_19911009 | BFQ29P                 | SOT23   | 3           | bjt_gp | NPN       | 1000                             | 15    | 75    | 10                               | 70    | 50-250 | 5.1    |
| pb_sms_BFQ29P_19921101 | BFQ29P                 | SOT23   | 3           | eebjt2 | NPN       | 1000                             | 15    | 75    | 10                               | 70    | 50-250 | 5.1    |
| pb_sms_BFQ645_19911009 | BFQ645                 | CERECX  | 4           | eebjt2 | NPN       | 400                              | 12    | 40    | 8                                | 15    | 100    | 9      |
| pb_sms_BFQ64_19911008  | BFQ645                 | CERECX  | 4           | eebjt2 | NPN       | 400                              | 12    | 40    | 8                                | 15    | 100    | 9      |
| pb_sms_BFQ69_19911009  | BFQ69                  | TPLAST  | 3           | eebjt2 | NPN       | 300                              | 15    | 30    | 10                               | 15    | 100    | 5.8    |
| pb_sms_BFQ70_19911009  | BFQ70                  | CERECX  | na          | bjt_gp | NPN       | 300                              | 15    | 30    | 10                               | 15    | 100    | 5.8    |
| pb_sms_BFQ70_19921101  | BFQ70                  | CERECX  | 4           | eebjt2 | NPN       | 300                              | 15    | 30    | 10                               | 15    | 100    | 5.8    |
| pb_sms_BFQ71_19911009  | BFQ71                  | CERECX  | 4           | eebjt2 | NPN       | 300                              | 15    | 30    | 6                                | 20    | 100    | 5.2    |
| pb_sms_BFQ72_19911009  | BFQ72                  | CERECX  | 4           | eebjt2 | NPN       | 350                              | 15    | 50    | 5                                | 50    | 90     | 4.7    |
| pb_sms_BFQ73S_19911008 | BFQ73S                 | CERECX  | 4           | eebjt2 | NPN       | 500                              | 15    | 100   | 5                                | 75    | 90     | 5.4    |
| pb_sms_BFQ74_19911009  | BFQ74                  | CERECX  | 4           | bjt_gp | NPN       | 500                              | 15    | 100   | 5                                | 75    | 90     | 5.4    |
| pb_sms_BFQ74_19921101  | BFQ74                  | CERECX  | 4           | eebjt2 | NPN       | 500                              | 15    | 100   | 5                                | 75    | 90     | 5.4    |
| pb_sms_BFQ75_19931122  | BFQ75                  | CERECX  | 4           | eebjt2 | PNP       | 350                              | -12   | -50   | -5                               | -30   | 50     | 5      |
| pb_sms_BFQ76_19931201  | BFQ76                  | CERECX  | 4           | eebjt2 | PNP       | 250                              | -15   | -30   | -10                              | -14   | 50     | 5      |
| pb_sms_BFQ81_19911008  | BFQ81                  | SOT23   | 3           | eebjt2 | NPN       | 280                              | 16    | 30    | 10                               | 15    | 50     | 5.8    |
| pb_sms_BFQ81_19960901  | BFQ81                  | SOT23   | na          | bjt_gp | NPN       | 280                              | 16    | 30    | 10                               | 15    | 50     | 5.8    |
| pb_sms_BFQ82_19911008  | BFQ82                  | CERECX  | na          | bjt_gp | NPN       | 280                              | 16    | 30    | 10                               | 15    | 50     | 5.8    |
| pb_sms_BFQ82_19921101  | BFQ82                  | CERECX  | 4           | eebjt2 | NPN       | 280                              | 16    | 30    | 10                               | 15    | 50     | 5.8    |
| pb_sms_BFR106_19911009 | BFR106                 | SOT23   | 3           | eebjt2 | NPN       | 350                              | 15    | 100   | 8                                | 20    | 25     | 3.3    |
| pb_sms_BFR106_19960901 | BFR106                 | SOT23   | na          | bjt_gp | NPN       | 350                              | 15    | 100   | 8                                | 20    | 25     | 3.3    |
| pb_sms_BFR15A_19911017 | BFR15A                 | TO72V2  | 3           | eebjt2 | NPN       | 200                              | 12    | 30    | 6                                | 10    | 25     | 4.5    |

Table D-2. Siemens Packaged BJTs (continued)

| Component Name          | Physical Specification |         |             |        |           | Maximum Electrical Specification |       |       | Typical Electrical Specification |       |        |        |
|-------------------------|------------------------|---------|-------------|--------|-----------|----------------------------------|-------|-------|----------------------------------|-------|--------|--------|
|                         | Part Number            | Package | Term . Type | Mode l | Polarit y | Pdiss mW                         | Vce V | Ic mA | Vce V                            | Ic mA | Hfe    | Ft GHz |
| pb_sms_BFR180W_19960901 | BFR180W                | SOT323  | na          | bjt_gp | NPN       | na                               | na    | na    | na                               | na    | na     | na     |
| pb_sms_BFR180_19911011  | BFR180                 | SOT23   | 3           | bjt_gp | NPN       | 200                              | 12    | 30    | 6                                | 10    | 50-250 | 4.5    |
| pb_sms_BFR180_19921101  | BFR180                 | SOT23   | 3           | eebjt2 | NPN       | 200                              | 12    | 30    | 6                                | 10    | 50-250 | 4.5    |
| pb_sms_BFR180_19960901  | BFR180                 | SOT23   | na          | bjt_gp | NPN       | 200                              | 12    | 30    | 6                                | 10    | 50-250 | 4.5    |
| pb_sms_BFR181W_19960901 | BFR181W                | SOT323  | na          | bjt_gp | NPN       | na                               | na    | na    | na                               | na    | na     | na     |
| pb_sms_BFR181_19911009  | BFR181                 | SOT23   | 3           | bjt_gp | NPN       | 30                               | 8     | 4     | 3                                | 2     | 50-250 | 6.2    |
| pb_sms_BFR181_19921101  | BFR181                 | SOT23   | 3           | eebjt2 | NPN       | 30                               | 8     | 4     | 3                                | 2     | 50-250 | 6.2    |
| pb_sms_BFR181_19960901  | BFR181                 | SOT23   | na          | bjt_gp | NPN       | 30                               | 8     | 4     | 3                                | 2     | 50-250 | 6.2    |
| pb_sms_BFR182W_19960901 | BFR182W                | SOT323  | na          | bjt_gp | NPN       | na                               | na    | na    | na                               | na    | na     | na     |
| pb_sms_BFR182_19911009  | BFR182                 | SOT23   | 3           | bjt_gp | NPN       | 175                              | 12    | 20    | 8                                | 10    | 50-250 | 8      |
| pb_sms_BFR182_19921101  | BFR182                 | SOT23   | 3           | eebjt2 | NPN       | 175                              | 12    | 20    | 8                                | 10    | 50-250 | 8      |
| pb_sms_BFR182_19960901  | BFR182                 | SOT23   | na          | bjt_gp | NPN       | 175                              | 12    | 20    | 8                                | 10    | 50-250 | 8      |
| pb_sms_BFR183W_19960901 | BFR183W                | SOT323  | na          | bjt_gp | NPN       | na                               | na    | na    | na                               | na    | na     | na     |
| pb_sms_BFR183_19911014  | BFR183                 | SOT23   | 3           | bjt_gp | NPN       | 250                              | 12    | 35    | 8                                | 20    | 50-250 | 8      |
| pb_sms_BFR183_19921101  | BFR183                 | SOT23   | 3           | eebjt2 | NPN       | 250                              | 12    | 35    | 8                                | 20    | 50-250 | 8      |
| pb_sms_BFR183_19960901  | BFR183                 | SOT23   | na          | bjt_gp | NPN       | 250                              | 12    | 35    | 8                                | 20    | 50-250 | 8      |
| pb_sms_BFR193W_19960901 | BFR193W                | SOT323  | na          | bjt_gp | NPN       | na                               | na    | na    | na                               | na    | na     | na     |
| pb_sms_BFR193_19911009  | BFR193                 | SOT23   | 3           | bjt_gp | NPN       | 450                              | 12    | 65    | 8                                | 30    | 50-250 | 8      |
| pb_sms_BFR193_19921101  | BFR193                 | SOT23   | 3           | eebjt2 | NPN       | 450                              | 12    | 65    | 8                                | 30    | 50-250 | 8      |
| pb_sms_BFR193_19960901  | BFR193                 | SOT23   | na          | bjt_gp | NPN       | 450                              | 12    | 65    | 8                                | 30    | 50-250 | 8      |
| pb_sms_BFR194_19931122  | BFR194                 | SOT23   | 3           | eebjt2 | PNP       | 700                              | -15   | -100  | -10                              | -70   | 50     | 4.5    |
| pb_sms_BFR194_19960901  | BFR194                 | SOT23   | na          | bjt_gp | PNP       | 700                              | -15   | -100  | -10                              | -70   | 50     | 4.5    |
| pb_sms_BFR280W_19960901 | BFR280W                | SOT323  | na          | bjt_gp | NPN       | na                               | na    | na    | na                               | na    | na     | na     |
| pb_sms_BFR280_19911009  | BFR280                 | SOT23   | 3           | eebjt2 | NPN       | 80                               | 8     | 10    | 5                                | 6     | 100    | 7      |
| pb_sms_BFR280_19960901  | BFR280                 | SOT23   | na          | bjt_gp | NPN       | 80                               | 8     | 10    | 5                                | 6     | 100    | 7      |
| pb_sms_BFR34A_19911014  | BFR34A                 | TPLAST  | 3           | eebjt2 | NPN       | 200                              | 12    | 30    | 10                               | 20    | 40     | 5      |
| pb_sms_BFR35AP_19911009 | BFR35AP                | SOT23   | 3           | eebjt2 | NPN       | 280                              | 12    | 30    | 6                                | 20    | 90     | 4.9    |
| pb_sms_BFR90_19911009   | BFR90                  | TPLAST  | 3           | eebjt2 | NPN       | 200                              | 15    | 30    | 10                               | 20    | 40     | 5      |
| pb_sms_BFR91A_19911009  | BFR91A                 | SOT37   | 3           | eebjt2 | NPN       | 300                              | 12    | 35    | 5                                | 30    | 90     | 6      |

Table D-2. Siemens Packaged BJTs (continued)

| Component Name          | Physical Specification |         |             |        |           | Maximum Electrical Specification |       |       | Typical Electrical Specification |       |        |        |
|-------------------------|------------------------|---------|-------------|--------|-----------|----------------------------------|-------|-------|----------------------------------|-------|--------|--------|
|                         | Part Number            | Package | Term . Type | Mode l | Polarit y | Pdiss mW                         | Vce V | Ic mA | Vce V                            | Ic mA | Hfe    | Ft GHz |
| pb_sms_BFR91_19911014   | BFR91                  | TPLAST  | 3           | eebjt2 | NPN       | 250                              | 15    | 50    | 8                                | 25    | 30     | 5      |
| pb_sms_BFR92P_19911009  | BFR92P                 | SOT23   | 3           | eebjt2 | NPN       | 280                              | 15    | 30    | 10                               | 14    | 100    | 5      |
| pb_sms_BFR92P_19960901  | BFR92P                 | SOT23   | na          | bjt_gp | NPN       | 280                              | 15    | 30    | 10                               | 14    | 100    | 5      |
| pb_sms_BFR92W_19960901  | BFR92W                 | SOT323  | na          | bjt_gp | NPN       | na                               | na    | na    | na                               | na    | na     | na     |
| pb_sms_BFR93AW_19960901 | BFR93AW                | SOT323  | na          | bjt_gp | NPN       | na                               | na    | na    | na                               | na    | na     | na     |
| pb_sms_BFR93A_19960901  | BFR93A                 | SOT23   | na          | bjt_gp | NPN       | na                               | na    | na    | na                               | na    | na     | na     |
| pb_sms_BFR93P_19911009  | BFR93P                 | SOT23   | 3           | eebjt2 | NPN       | 280                              | 15    | 50    | 5                                | 50    | 100    | 4.7    |
| pb_sms_BFR96S_19911009  | BFR96S                 | SOT37   | 3           | eebjt2 | NPN       | 700                              | 15    | 100   | 10                               | 70    | 25     | 5      |
| pb_sms_BFS17P_19911009  | BFS17P                 | SOT23   | 3           | eebjt2 | NPN       | 280                              | 15    | 25    | 5                                | 25    | 70     | 2.5    |
| pb_sms_BFS17P_19960901  | BFS17P                 | SOT23   | na          | bjt_gp | NPN       | 280                              | 15    | 25    | 5                                | 25    | 70     | 2.5    |
| pb_sms_BFS17S_19960901  | BFS17S                 | SOT363  | na          | bjt_gp | NPN       | na                               | na    | na    | na                               | na    | na     | na     |
| pb_sms_BFS17W_19960901  | BFS17W                 | SOT363  | na          | bjt_gp | NPN       | na                               | na    | na    | na                               | na    | na     | na     |
| pb_sms_BFS480_19960901  | BFS480                 | SOT363  | na          | bjt_gp | NPN       | na                               | na    | na    | na                               | na    | na     | na     |
| pb_sms_BFS481_19960901  | BFS481                 | SOT363  | na          | bjt_gp | NPN       | na                               | na    | na    | na                               | na    | na     | na     |
| pb_sms_BFS482_19960901  | BFS482                 | SOT363  | na          | bjt_gp | NPN       | na                               | na    | na    | na                               | na    | na     | na     |
| pb_sms_BFS483_19960901  | BFS483                 | SOT363  | na          | bjt_gp | NPN       | na                               | na    | na    | na                               | na    | na     | na     |
| pb_sms_BFS55A_19911017  | BFS55A                 | TO72    | 3           | eebjt2 | NPN       | 250                              | 15    | 50    | 8                                | 25    | 30     | 4.5    |
| pb_sms_BFT65_19911017   | BFT65                  | TPLAST  | 3           | eebjt2 | NPN       | 250                              | 15    | 50    | 8                                | 25    | 30     | 5      |
| pb_sms_BFT66_19911009   | BFT66                  | TO72V2  | 3           | eebjt2 | NPN       | 200                              | 15    | 30    | 6                                | 20    | 50-250 | 4.9    |
| pb_sms_BFT92W_19960901  | BFT92W                 | SOT323  | na          | bjt_gp | PNP       | na                               | na    | na    | na                               | na    | na     | na     |
| pb_sms_BFT92_19931122   | BFT92                  | SOT23   | 3           | eebjt2 | PNP       | 200                              | -15   | -25   | -10                              | -14   | 50     | 5      |
| pb_sms_BFT92_19960901   | BFT92                  | SOT23   | na          | bjt_gp | PNP       | 200                              | -15   | -25   | -10                              | -14   | 50     | 5      |
| pb_sms_BFT93_19931122   | BFT93                  | SOT23   | 3           | eebjt2 | PNP       | 200                              | -12   | -35   | -5                               | -30   | 50     | 5      |
| pb_sms_BFT93_19960901   | BFT93                  | SOT23   | na          | bjt_gp | PNP       | 200                              | -12   | -35   | -5                               | -30   | 50     | 5      |
| pb_sms_BFT97_19911017   | BFT97                  | TPLAST  | 3           | eebjt2 | NPN       | 200                              | 15    | 30    | 6                                | 20    | 30     | 5      |
| pb_sms_BFT98T_19911009  | BFT98T                 | TPLAST  | 3           | eebjt2 | NPN       | 800                              | 20    | 150   | 8                                | 80    | 50     | 3.2    |
| pb_sms_BFW92_19911017   | BFW92                  | TPLAST  | 3           | eebjt2 | NPN       | 200                              | 15    | 25    | 5                                | 14    | 20-150 | 2.4    |
| pb_sms_BFY90_19911009   | BFY90                  | TO72V2  | 3           | eebjt2 | NPN       | 200                              | 15    | 25    | 5                                | 25    | 20-125 | 1.5    |
| pb_sms_BSS63_19961209   | BSS63                  | SOT23   | na          | bjt_gp | PNP       | na                               | na    | na    | na                               | na    | na     | na     |

Table D-2. Siemens Packaged BJTs (continued)

| Component Name            | Physical Specification |          |             |        |           | Maximum Electrical Specification |       |       | Typical Electrical Specification |       |     |        |
|---------------------------|------------------------|----------|-------------|--------|-----------|----------------------------------|-------|-------|----------------------------------|-------|-----|--------|
|                           | Part Number            | Package  | Term . Type | Mode l | Polarit y | Pdiss mW                         | Vce V | Ic mA | Vce V                            | Ic mA | Hfe | Ft GHz |
| pb_sms_BSS64_19961209     | BSS64                  | SOT23    | na          | bjt_gp | NPN       | na                               | na    | na    | na                               | na    | na  | na     |
| pb_sms_BSS79_19961209     | BSS79                  | SOT23    | na          | bjt_gp | NPN       | na                               | na    | na    | na                               | na    | na  | na     |
| pb_sms_BSS80_19961209     | BSS80                  | SOT23    | na          | bjt_gp | NPN       | na                               | na    | na    | na                               | na    | na  | na     |
| pb_sms_BSS81_19961209     | BSS81                  | SOT23    | na          | bjt_gp | NPN       | na                               | na    | na    | na                               | na    | na  | na     |
| pb_sms_BSS82_19961209     | BSS82                  | SOT23    | na          | bjt_gp | NPN       | na                               | na    | na    | na                               | na    | na  | na     |
| pb_sms_MPSA42_19961209    | MPSA42                 | TO92     | na          | bjt_gp | NPN       | na                               | na    | na    | na                               | na    | na  | na     |
| pb_sms_MPSA43_19961209    | MPSA43                 | TO92     | na          | bjt_gp | NPN       | na                               | na    | na    | na                               | na    | na  | na     |
| pb_sms_MPSA92_19961209    | MPSA92                 | TO92     | na          | bjt_gp | PNP       | na                               | na    | na    | na                               | na    | na  | na     |
| pb_sms_MPSA93_19961209    | MPSA93                 | TO92     | na          | bjt_gp | PNP       | na                               | na    | na    | na                               | na    | na  | na     |
| pb_sms_PZT2222A_19961209  | PZT2222A               | SOT223   | na          | bjt_gp | NPN       | na                               | na    | na    | na                               | na    | na  | na     |
| pb_sms_PZT2222_19961209   | PZT2222                | SOT223   | na          | bjt_gp | NPN       | na                               | na    | na    | na                               | na    | na  | na     |
| pb_sms_PZT2907A_19961209  | PZT2907A               | SOT223   | na          | bjt_gp | NPN       | na                               | na    | na    | na                               | na    | na  | na     |
| pb_sms_PZT2907_19961209   | PZT2907                | SOT223   | na          | bjt_gp | NPN       | na                               | na    | na    | na                               | na    | na  | na     |
| pb_sms_PZT3904_19961209   | PZT3904                | SOT223_3 | na          | bjt_gp | NPN       | na                               | na    | na    | na                               | na    | na  | na     |
| pb_sms_PZT3906_19961209   | PZT3906                | SOT223_3 | na          | bjt_gp | PNP       | na                               | na    | na    | na                               | na    | na  | na     |
| pb_sms_PZT43_19961209     | PZT43                  | SOT223_3 | na          | bjt_gp | NPN       | na                               | na    | na    | na                               | na    | na  | na     |
| pb_sms_PZTA42_19961209    | PZTA42                 | SOT223_3 | na          | bjt_gp | NPN       | na                               | na    | na    | na                               | na    | na  | na     |
| pb_sms_PZTA92_19961209    | PZTA92                 | SOT223_3 | na          | bjt_gp | PNP       | na                               | na    | na    | na                               | na    | na  | na     |
| pb_sms_PZTA93_19961209    | PZTA93                 | SOT223_3 | na          | bjt_gp | PNP       | na                               | na    | na    | na                               | na    | na  | na     |
| pb_sms_SMBT2222A_19961209 | SMBT2222A              | SOT23    | na          | bjt_gp | NPN       | na                               | na    | na    | na                               | na    | na  | na     |
| pb_sms_SMBT2907A_19961209 | SMBT2907A              | SOT23    | na          | bjt_gp | NPN       | na                               | na    | na    | na                               | na    | na  | na     |
| pb_sms_SMBT2907_19961209  | SMBT2907               | SOT23    | na          | bjt_gp | NPN       | na                               | na    | na    | na                               | na    | na  | na     |
| pb_sms_SMBT3903_19961209  | SMBT3903               | SOT23    | na          | bjt_gp | NPN       | na                               | na    | na    | na                               | na    | na  | na     |
| pb_sms_SMBT3904_19961209  | SMBT3904               | SOT23    | na          | bjt_gp | NPN       | na                               | na    | na    | na                               | na    | na  | na     |
| pb_sms_SMBT3906_19961209  | SMBT3906               | SOT23    | na          | bjt_gp | PNP       | na                               | na    | na    | na                               | na    | na  | na     |
| pb_sms_SMBT4124_19961209  | SMBT4124               | SOT23    | na          | bjt_gp | NPN       | na                               | na    | na    | na                               | na    | na  | na     |
| pb_sms_SMBT4126_19961209  | SMBT4126               | SOT23    | na          | bjt_gp | PNP       | na                               | na    | na    | na                               | na    | na  | na     |
| pb_sms_SMBT4401_19961209  | SMBT4401               | SOT23    | na          | bjt_gp | NPN       | na                               | na    | na    | na                               | na    | na  | na     |
| pb_sms_SMBT4403_19961209  | SMBT4403               | SOT23    | na          | bjt_gp | NPN       | na                               | na    | na    | na                               | na    | na  | na     |

Table D-2. Siemens Packaged BJTs (continued)

| Component Name           | Physical Specification |         |             |        |           | Maximum Electrical Specification |       |       | Typical Electrical Specification |       |     |        |
|--------------------------|------------------------|---------|-------------|--------|-----------|----------------------------------|-------|-------|----------------------------------|-------|-----|--------|
|                          | Part Number            | Package | Term . Type | Mode l | Polarit y | Pdiss mW                         | Vce V | Ic mA | Vce V                            | Ic mA | Hfe | Ft GHz |
| pb_sms_SMBT5086_19961209 | SMBT5086               | SOT23   | na          | bjt_gp | PNP       | na                               | na    | na    | na                               | na    | na  | na     |
| pb_sms_SMBT5087_19961209 | SMBT5087               | SOT23   | na          | bjt_gp | PNP       | na                               | na    | na    | na                               | na    | na  | na     |
| pb_sms_SMBT6428_19961209 | SMBT6428               | SOT23   | na          | bjt_gp | NPN       | na                               | na    | na    | na                               | na    | na  | na     |
| pb_sms_SMBT6429_19961209 | SMBT6429               | SOT23   | na          | bjt_gp | NPN       | na                               | na    | na    | na                               | na    | na  | na     |
| pb_sms_SMBTA05_19961209  | SMBTA05                | SOT23   | na          | bjt_gp | NPN       | na                               | na    | na    | na                               | na    | na  | na     |
| pb_sms_SMBTA06_19961209  | SMBTA06                | SOT23   | na          | bjt_gp | NPN       | na                               | na    | na    | na                               | na    | na  | na     |
| pb_sms_SMBTA20_19961209  | SMBTA20                | SOT23   | na          | bjt_gp | NPN       | na                               | na    | na    | na                               | na    | na  | na     |
| pb_sms_SMBTA42_19961209  | SMBTA42                | SOT23   | na          | bjt_gp | NPN       | na                               | na    | na    | na                               | na    | na  | na     |
| pb_sms_SMBTA43_19961209  | SMBTA43                | SOT23   | na          | bjt_gp | NPN       | na                               | na    | na    | na                               | na    | na  | na     |
| pb_sms_SMBTA55_19961209  | SMBTA55                | SOT23   | na          | bjt_gp | PNP       | na                               | na    | na    | na                               | na    | na  | na     |
| pb_sms_SMBTA56_19961209  | SMBTA56                | SOT23   | na          | bjt_gp | PNP       | na                               | na    | na    | na                               | na    | na  | na     |
| pb_sms_SMBTA70_19961209  | SMBTA70                | SOT23   | na          | bjt_gp | PNP       | na                               | na    | na    | na                               | na    | na  | na     |
| pb_sms_SMBTA92_19961209  | SMBTA92                | SOT23   | na          | bjt_gp | PNP       | na                               | na    | na    | na                               | na    | na  | na     |
| pb_sms_SMBTA93_19961209  | SMBTA93                | SOT23   | na          | bjt_gp | PNP       | na                               | na    | na    | na                               | na    | na  | na     |
| pb_sms_SXT2222A_19961209 | SXT2222A               | SOT89   | na          | bjt_gp | NPN       | na                               | na    | na    | na                               | na    | na  | na     |
| pb_sms_SXT2907A_19961209 | SXT2907A               | SOT89   | na          | bjt_gp | NPN       | na                               | na    | na    | na                               | na    | na  | na     |
| pb_sms_SXT3904_19961209  | SXT3904                | SOT89   | na          | bjt_gp | NPN       | na                               | na    | na    | na                               | na    | na  | na     |
| pb_sms_SXT3906_19961209  | SXT3906                | SOT89   | na          | bjt_gp | PNP       | na                               | na    | na    | na                               | na    | na  | na     |
| pb_sms_SXTA42_19961209   | SXTA42                 | SOT89   | na          | bjt_gp | NPN       | na                               | na    | na    | na                               | na    | na  | na     |
| pb_sms_SXTA43_19961209   | SXTA43                 | SOT89   | na          | bjt_gp | NPN       | na                               | na    | na    | na                               | na    | na  | na     |
| pb_sms_SXTA92_19961209   | SXTA92                 | SOT89   | na          | bjt_gp | PNP       | na                               | na    | na    | na                               | na    | na  | na     |
| pb_sms_SXTA93_19961209   | SXTA93                 | SOT89   | na          | bjt_gp | PNP       | na                               | na    | na    | na                               | na    | na  | na     |
| na = not available       |                        |         |             |        |           |                                  |       |       |                                  |       |     |        |

Table D-3. Toshiba Packaged BJTs

| Component Name          | Physical Specification |         |            |        |          | Maximum Electrical Specification |       |       | Typical Electrical Specification |       |        |        |
|-------------------------|------------------------|---------|------------|--------|----------|----------------------------------|-------|-------|----------------------------------|-------|--------|--------|
|                         | Part Number            | Package | Term. Type | Model  | Polarity | Pdiss mW                         | Vce V | Ic mA | Vce V                            | Ic mA | Hfe    | Ft GHz |
| pb_tsb_2SC2753_19921210 | 2SC2753                | TO92    | 3          | eebjt2 | NPN      | 300                              | 12    | 70    | 10                               | 20    | 30-180 | 5      |
| pb_tsb_2SC3011_19921213 | 2SC3011                | SOT23   | 3          | eebjt2 | NPN      | 150                              | 7     | 30    | 5                                | 10    | 120    | 6.5    |
| pb_tsb_2SC3124_19921213 | 2SC3124                | SOT23   | 3          | eebjt2 | NPN      | 150                              | 15    | 50    | 10                               | 8     | 100    | 1.1    |
| pb_tsb_2SC3429_19921213 | 2SC3429                | SOT23   | 3          | eebjt2 | NPN      | 150                              | 12    | 70    | 10                               | 20    | >25    | 5      |
| pb_tsb_2SC3606_19921214 | 2SC3606                | SOT23   | 3          | eebjt2 | NPN      | 150                              | 12    | 80    | 10                               | 20    | 30-250 | 7      |
| pb_tsb_2SC3609_19921214 | 2SC3609                | 2D3J1C  | 4          | eebjt2 | NPN      | 150                              | 12    | 80    | 10                               | 20    | 30-250 | 7      |
| pb_tsb_2SC4248_19921214 | 2SC4248                | SOT323  | 3          | eebjt2 | NPN      | 100                              | 12    | 30    | 10                               | 10    | 70-300 | 4      |
| pb_tsb_2SC4315_19921214 | 2SC4315                | 2D3J1C  | 4          | eebjt2 | NPN      | 150                              | 12    | 80    | 10                               | 20    | 30-250 | 7      |
| pb_tsb_2SC4320_19921214 | 2SC4320                | 2D3J1C  | 4          | eebjt2 | NPN      | 150                              | 10    | 40    | 8                                | 20    | 50-250 | 10     |
| pb_tsb_2SC4321_19921214 | 2SC4321                | SOT323  | 3          | eebjt2 | NPN      | 100                              | 10    | 40    | 8                                | 20    | 50-250 | 10     |
| pb_tsb_2SC4322_19921215 | 2SC4322                | SOT23   | 3          | eebjt2 | NPN      | 150                              | 10    | 15    | 6                                | 7     | 50-250 | 10     |
| pb_tsb_2SC4394_19921211 | 2SC4394                | SOT323  | 3          | eebjt2 | NPN      | 100                              | 12    | 80    | 10                               | 20    | 30-250 | 7      |
| pb_tsb_RN2405_19930119  | RN2405                 | SOT23   | 3          | eebjt2 | PNP      | 200                              | -50   | -100  | -10                              | -5    | 80     | 0.2    |