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General-Purpose High-Frequency Transistors (classification table)

Frequency (MHz)	Application	Type	Features		Large Signal
			Amplification	Oscillation	
0.55		→TV AGC	2SC1825, 2SA1015, 2SC2458, 2SA1048	2SC1815 2SC2458	
		BC band radio	2SC1815, 2SC2458, 2SC380TM, 2SC2669 2SK709, 2SK710, 2SK711, 2SK1875	2SC380TM 2SC2669	
1.0		TV video amp	2SC1959, 2SC1815, 2SC2458		2SC3333, 2SC3334 2SC3619 2SA1320, 2SA1321
2.0					
3.0					
5.0		TV SIF		2SC380TM 2SC2669 2SC2995	
10		Short-wave radio	2SC380TM, 2SC2669, 2SC2995		
20		FM IF	2SC380TM, 2SC2669, 2SC2995 2SC2668, 2SC2669, 2SC2995, 2SC2714, 2SC4215, 2SC4915 2SC1923, 2SC380TM	2SC2995 2SC380TM 2SC2669	
		AM, SSB Transceiver	2SK161, 2SK192A, 2SK210, 2SK211, 2SK881 2SK241, 2SK302, 2SK882		
30					
50		TV PIF (Europe) TV PIF (U.S.A.) Transceiver	2SC3125, 2SC4253 2SC2216		
		TV PIF (Japan) FM	2SC1923, 2SC2668, 2SC2995, 2SC2714 2SC4215, 2SC4915, 2SK161, 2SK192A, 2SK210, 2SK211 2SK881, 2SK241, 2SK302, 2SK882, 2SK1771 3SK126, 3SK195, 3SK225, 3SK257 3SK226, 3SK258	2SC1923 2SC2668 2SC2995	
100					
200		VHF	3SK126, 3SK195 3SK225, 3SK226, 3SK257, 3SK258	2SC2349 2SC3124	
			2SC3122, 2SC4249 2SC2347, 2SC3123, 2SC4250 3SK153, 3SK195, 3SK226, 3SK259, 3SK258	2SC4251 2SC4252 2SC4255	
300					
500		UHF	2SC2498, 2SC2499, 2SC2644 2SC3098, 2SC3099 2SC3120, 2SC3862, 2SC4214, 2SC4244 2SC4245, 3SK292, 3SK294 3SK199, 3SK207, 3SK232, 3SK256, 3SK249 3SK240, 3SK274, 3SK291, 3SK293	2SC3120 2SC4245 2SC3121 2SC4246 2SC4527 2SC2347 2SC3547A 2SC4247 2SC3547B 2SC4248	
1000					
5000		SHF	2SA1161, 2SA1245 2SC2753, 2SC3011, 2SC3268 2SC5064, 2SC5065, 2SC5066, 2SC5066FT, 2SC5084 2SC5085, 2SC5086, 2SC5087, 2SC5088, 2SC5086FT, 2SC5089 2SC5090, 2SC5091, 2SC5092, 2SC5093, 2SC5091FT, 2SC5094 2SC5095, 2SC5096, 2SC5097, 2SC5098, 2SC5096FT, 2SC5254 2SC5255, 2SC5256, 2SC5256FT, 2SC5257, 2SC5258, 2SC5259 2SC5260, 2SC5261, 2SC5261FT, 2SC5262, 2SC5263 2SC5315, 2SC5316, 2SC5317, 2SC5317FT, 2SC5318, 2SC5319, 2SC5319 2SC5320, 2SC5321, 2SC5322, 2SC5322FT, 2SC5323, 2SC5324 2SK3179, 2SC5463, 2SC5464, 2SC5464FT 3SK320, MT3S06S, MT3S06T, MT3S07S, MT3S07T MT4S32U	2SC5084 2SC5085 2SC5106 2SC5107 2SC5108 2SC5108FT 2SC5111FT 2SC5109 2SC5110 2SC5111 2SC5463 MT3S03S MT3S03T MT3S04S MT3S04T MT3S07S MT3S07T	
10000			2SK3179		

AM/FM Tuners

Application		Package	TO-92 (SC-43)	MINI	S-MINI (SC-59)	USM (SC-70)	SSM	SMQ (SC-61)	USQ	SMV	FM8
FM	RF		2SC1923	2SC2668	2SC2714	2SC4215	2SC4915	3SK126 3SK195 2SK1771 3SK226		TA4007F	
	MIX		2SC1923	2SC2668	2SC2714	2SC4215	2SC4915	3SK151	3SK258	3SK260	
	LO		2SC1923	2SC2668	2SC2714	2SC4215	2SC4915				
	IF		2SC380TM	2SC2669	2SC2715						
	AFC				1SV160◆						
AM	RF		2SC941TM 2SK709	2SC2670 2SK710	2SC2716 2SK711	2SK1875				HN3G01J	
	CONV & IF		2SC1815 2SC380TM 2SC941TM	2SC2458 2SC2669 2SC2670 2SC2995	2SC2712 2SC2715 2SC2716 2SC2996	2SC4116	2SC4738			2SC4207	
AM tuning				1SV102◆ 1SV149◆							HN1V01H◆ HN1V02H◆ HN2V02H◆
FM tuning				1SV101◆ 1SV103◆ 1SV147◆	1SV225◆ 1SV228◆ JDV3C11						
FM AGC					1SV128◆	1SV252◆		1SV237◆	1SV312◆		

◆: Diodes

Tuners

Application		Package	S-MINI (SC-59)	USM (SC-70)	SSM	SMQ (SC-61)	USQ	SMV	USC	ESC
UHF	RF			2SC4244		3SK153 3SK199 2SC4214	3SK207 3SK240◆◆ 3SK232 3SK291	3SK256 3SK249 3SK259 3SK274◆◆ 3SK293 3SK320◆◆	TA4006F	
	Mixer		2SC3121 2SC3120 2SC3862	2SC4246 2SC4245						1SS315◆
	OSC		2SC3121 2SC3547A 2SC3547B	2SC4246 2SC4527 2SC4247 2SC4248						
	Tuning								1SV214◆	1SV278◆
	AFC								1SV216◆	
VHF	RF		2SC3122	2SC4249		3SK126 3SK195	3SK225 3SK226 3SK292	3SK257 3SK258 3SK294	TA4006F TA4007F	
	Mixer		2SC3123	2SC4250		3SK151		3SK260		
	OSC		2SC3124 2SC4255	2SC4251 2SC4252						
	Tuning		1SV242◆						1SV214◆ 1SV215◆ 1SV217◆ 1SV231◆ 1SV232◆ 1SV238◆ 1SV262◆ 1SV269◆ 1SV288◆ 1SV302◆	1SV278◆ 1SV282◆ 1SV283◆ 1SV290◆ 1SV303◆
	AFC								1SV216◆	
	Band switch		1SS268◆ 1SS269◆	1SS312◆ 1SS313◆	1SS364◆					1SS314◆

◆: Diodes, ◆◆: GaAs MESFETs

PIF, SIF, AGC, Sync. Separation and Sync. Amplification

PIF	SIF	AGC	Sync. Separation	Sync. Amplification
2SC383TM 2SC388ATM 2SC2216 2SC3125 2SC4253	2SC380TM	2SC1815 2SA1015	2SC1815 2SA1015	2SC1815 2SA1015

Microwave Transistors and Diodes

Application	Package	S-MINI (SC-59)	USM (SC-70)	SSM	TESM	SMQ (SC-61)	USQ	USC	ESC	TESC	sESC	SM6	US6	
VHF/UHF band low-noise amp	PNP + transistor	2SA1245												
	NPN + transistor	2SC5064	2SC5065	2SC5066	2SC5066FT								HN3C09F	HN3C09FU
		2SC5084	2SC5085	2SC5086	2SC5086FT	2SC5087	2SC5088						HN3C10F	HN3C10FU
				2SC5313 E-B reversed										
		2SC5089	2SC5090	2SC5091	2SC5091FT	2SC5092	2SC5093						HN3C11F	HN3C11FU
		2SC5094	2SC5095	2SC5096	2SC5096FT	2SC5097	2SC5098						HN3C12F	HN3C12FU
		2SC5259	2SC5260	2SC5261	2SC5261FT	2SC5262	2SC5263							HN3C16FU
		2SC5254	2SC5255	2SC5256	2SC5256FT	2SC5257	2SC5258							HN3C15FU
		2SC5315	2SC5316	2SC5317	2SC5317FT	2SC5318	2SC5319							HN3C17FU
		2SC5320	2SC5321	2SC5322	2SC5322FT	2SC5323	2SC5324							HN3C18FU
			2SC5463	2SC5464	2SC5464FT									
		MT3S03A	MT3S03AU	MT3S03AS	MT3S03AT	MT4S03A	MT4S03AU							
		MT3S04A	MT3S04AU	MT3S04AS	MT3S04AT	MT4S04A	MT4S04AU							
					MT3S05T									
			MT3S06U	MT3S06S	MT3S06T	MT4S06	MT4S06U							
	MT3S07U	MT3S07S	MT3S07T	MT4S07	MT4S07U									
			MT3S08T											
						MT4S32U								
VHF/UHF band oscillator	NPN + transistor	2SC3547A/B 2SC5106 2SC5109	2SC4247/48 2SC5107 2SC5110	2SC5108 2SC5111	2SC5108FT 2SC5111FT									
Tuner	VCD						1SV306◆	1SV245◆ 1SV229◆ 1SV230◆ 1SV239◆ 1SV270◆ 1SV276◆ 1SV277◆ 1SV287◆ 1SV293◆ 1SV310◆ 1SV313◆ 1SV322◆ 1SV324◆ 1SV328◆ 1SV330◆	1SV309◆ 1SV279◆ 1SV286◆ 1SV280◆ 1SV281◆ 1SV284◆ 1SV285◆ 1SV291◆ 1SV311◆ 1SV314◆ 1SV323◆ 1SV325◆ 1SV329◆ 1SV331◆ JDV2S01E◆ JDV2S02E◆ JDV2S05E◆ JDV2S14E◆	JDV2S06S◆ JDV2S07S◆ JDV2S09S◆ JDV2S10S◆ JDV2S13S◆ JDV2S01S◆ JDV2S02S◆ JDV2S05S◆				
Pin attenuator Switch	Single	1SV128◆						1SV271◆ 1SV307◆	JDP2S04E◆ 1SV308◆ JDP2S01E◆	JDP2S02T◆ JDP2S01T◆	JDP2S02S◆ JDP2S01S◆			
	Twin	1SV172◆	1SV252◆			1SV237◆	1SV312◆ JDP4P02U◆							
Band Switch	Single							1SS314◆	1SS381◆	JDS2S03T◆	JDS2S03S◆			
	Twin	1SS268◆ 2SS269◆	1SS312◆ 1SS313◆	1SS364◆										
Schottky mixer	Single	1SS154◆						1SS315◆		JDH2S01T◆				
	Twin	1SS271◆ 1SS295◆												

◆: Diode

GaAs MODFETs

Product No.	Application	Electrical Characteristics (Ta = 25°C)		Mark	Package
		NF/GA (typ.) (dB/dB)	F (GHz)		
2SK3179	UHF-band low-noise amp	0.55/19.5	1.5	U6	USQ

High-Frequency Cell Pack Series

Product No.	Package	Structure	Applications	Electrical Characteristics (Ta = 25°C)
TA4000F	SM6	Bipolar linear wideband amp	BS tuners, communications equipment, VHF/UHF amps	B/W = 1.3 GHz GP = 15 dB @f = 400 MHz
TA4001F	SMQ	Bipolar linear wideband amp	BS tuners, communications equipment, VHF/UHF amps	B/W = 2.4 GHz GP = 12.5 dB @f = 500 MHz
TA4002F	SMQ	Bipolar linear wideband amp	BS tuners, communications equipment, VHF/UHF amps	B/W = 1.3 GHz GP = 23 dB @f = 500 MHz
TA4003F	SMV	Bipolar linear wideband amp	Communications equipment, VHF/UHF amps	B/W = 1.5 GHz GP = 11 dB @f = 500 MHz
TA4004F	SMV	Bipolar linear wideband amp	Communications equipment, VHF/UHF amps	B/W = 1.2 GHz GP = 10.5 dB @f = 400 MHz
TA4011AFE	ESV	Bipolar linear wideband amp	Mobile communications preamp, buffer amp	B/W = 2.4 GHz GP = 10 dB @f = 1.5 GHz
TA4011F	SMV	Bipolar linear wideband amp	Mobile communications preamp, buffer amp	B/W = 2.4 GHz GP = 10 dB @f = 1.5 GHz
TA4011FU	USV	Bipolar linear wideband amp	Mobile communications preamp, buffer amp	B/W = 2.4 GHz GP = 10 dB @f = 1.5 GHz
TA4012AFE	ESV	Bipolar linear wideband amp	Mobile communications preamp, buffer amp	B/W = 2.0 GHz GP = 12 dB @f = 1.5 GHz
TA4012F	SMV	Bipolar linear wideband amp	Mobile communications preamp, buffer amp	B/W = 2.0 GHz GP = 12 dB @f = 1.5 GHz
TA4012FU	USV	Bipolar linear wideband amp	Mobile communications preamp, buffer amp	B/W = 2.0 GHz GP = 12 dB @f = 1.5 GHz
TA4014FT TA4014FE	TU6 ES6	Bipolar linear OSC & buffer	OSC for X'tal or ceramic	Icc = 1.2 mA, Vcc = 3 V Vout = 1.2Vpp
TA4015FT TA4015FE	TU6 ES6	Bipolar linear OSC & buffer	OSC for X'tal or ceramic	Icc = 1.3 mA, Vcc = 3 V Vout = 1.2Vpp
TA4016AFE	ES6	Bipolar linear wideband amp	Mobile communications preamp, buffer amp	B/W = 3.2 GHz GP = 18 dB @f = 1.5 GHz
TA4017FT	TU6	Bipolar linear wideband amp	Cable modem IF amp	S21 ² = 13 dB @f = 45 MHz, Vcc = 5 V
TA4018F	SM8	Bipolar linear Gain control amp	Cable modem IF amp	S21 ² = 11 dB, GR = 37 dB @f = 45 MHz, Vcc = 5 V
TA4019F	SM8	Bipolar linear wideband amp	Cable modem IF amp	S21 ² = 30 dB @f = 45 MHz, Vcc = 5 V
TA4100F	SM6	Bipolar linear differential type	Communications equipment, VHF/UHF mixers	hFE = 100 (typ.) ft = 5 GHz
TA4101F	SM8	Bipolar linear double-balanced type	VHF/UHF mixers, communications equipment	GmIX = -3.5 dB, NFmIX = 9.0 dB @fRF = 800 MHz
TA4103F	SM8	Bipolar linear up-converter	Up-converter for PHS, 1.9 GHz U/C mixers	PO1 dB = -17 dB Gc = 3 dB @fif = 240 MHz @Vcc = 3 V, Icc = 26.5 mA
TA4303F	SSOP20	Bipolar linear down-converter	Down-converter for BS, CS mixers	Gc = +18 dB, @fif = 400 MHz @fin = 1.6 GHz, Vcc = 5 V, Icc = 74 mA
TG2006F	SM8	GaAs linear power amp	Power amp for PHS, 1.9 GHz band amp	Po > 21 dBmW, Gp > 17 dB @f = 1.9 GHz, It < 130 mA @ Vd = 3 V
TG2202F	SM6	GaAs linear attenuator	PHS attenuator, 1.9 GHz band SPST switch	Loss = 0.7 dB, ATT = 22 dB @f = 1.9 GHz, Vc = 0 V/3.0 V
TG2205F	SM6	GaAs linear antenna switch	PHS antenna switch, 1.9 GHz band SPDT switch	Loss = 0.5 dB, ISL = 25 dB @f = 1.9 GHz, Vc = 0 V/3.0 V
TG2206F	SM6	GaAs linear SPDT switch	Wide-band SPDT switch	Loss = 0.4 dB, ISL = 28 dB @f = 1 GHz, Vc = 0 V/2.5 V
TG2210FT	TU6	GaAs linear SPDT switch	Wide-band SPDT switch	Loss = 0.4 dB, ISL = 30 dB @f = 1 GHz, Vc = 0 V/2.5 V
** TG2211FT	TU6	GaAs linear SPDT switch	Bluetooth class 2/3 antenna switch	Loss = 0.6 dB, ISL = 22 dB @f = 2.5 GHz, Vc = 0 V/2.7 V
** TG2401F	HSOP	GaAs linear Power AMP + antenna switch	Power AMP & antenna switch for PHS(1.9 GHz band)	Ga ≥ 32 dB (Po = 20.5 dBmW) Ihold ≤ 170 mA @ (Po = 20.5 dBmW) @f = 1.893 GHz

** : Under development

High-Frequency Surface-Mount Type Transistors

Super-Mini Transistors (TO-236MOD equivalent, SC-59s)

Product No.	Application	Absolute Maximum Ratings (Ta = 25°C)				Mark	Complementary Device	No. of Equivalent TO-92 Product	Remarks (mini transistors)
		V _{CEO} (V)	I _c (mA)	P _c (mW)	T _j (°C)				
2SC2714	FM band high-frequency amp	30	20	100	125	Q□	—	2SC1923	2SC2668
2SC2715	AM frequency converter, FM IF amp	30	50	150	125	R□	—	2SC380TM	2SC2669
2SC2716	AM high-frequency amp	30	100	150	125	F□	—	2SC941TM	2SC2670
2SC2996	FM oscillator	30	50	150	125	G□	—	—	2SC2995
2SC3011	UHF/C band low-noise amp	7	30	150	125	MA	—	—	fr = 6.5 GHz
2SC3098	VHF/UHF band low-noise amp	20	50	150	125	MB	—	2SC2498	fr = 3.5 GHz
2SC3099	VHF/UHF band low-noise amp	20	30	150	125	MC	—	2SC2499	fr = 4 GHz
2SC3429	VHF/UHF band low-noise amp	12	70	150	125	ME	—	2SC2753	fr = 5 GHz
2SC3606	VHF/UHF band low-noise amp	12	80	150	125	MH	—	2SC3605	fr = 7 GHz
2SA1245	VHF/UHF band low-noise amp	−8	−30	150	125	MD	—	2SA1161	fr = 4 GHz
2SC3120	UHF TV frequency converter	15	50	150	125	HB	—	—	fr = 2.4 GHz
2SC3121	UHF TV oscillator	15	50	150	125	HC	—	—	fr = 1.5 GHz
2SC3122	UHF TV high-frequency amp	30	20	150	125	HD	—	2SC2348	fr = 400 MHz (min)
2SC3123	VHF TV frequency converter	20	50	150	125	HE	—	2SC3136	fr = 900 MHz (min)
2SC3124	VHF TV oscillator	15	50	150	125	HF	—	2SC2349	fr = 650 MHz (min)
2SC3125	Video IF amp	25	50	150	125	HH	—	2SC388TM	fr = 600 MHz
2SC3547A	UHF TV oscillator	12	30	150	125	HI	—	—	fr = 4 GHz
2SC3547B	UHF TV oscillator	12	30	150	125	HM	—	—	fr = 4 GHz
2SC3862	UHF TV frequency converter	15	50	150	125	HL	—	—	2SC3120 with emitter and base pins reversed
2SC4214	UHF TV high-frequency amp	20	20	150	125	HN	—	—	fr = 850 MHz, 4-pin
2SC4255	UHF TV oscillator	12	30	150	125	HO	—	—	fr = 2 GHz
2SC5064	VHF/UHF band low-noise amp	12	30	150	125	MA□	—	—	fr = 7 GHz
2SC5084	VHF/UHF band low-noise amp	12	80	150	125	MC□	—	—	fr = 7 GHz
★ 2SC5087	VHF/UHF band low-noise amp	12	80	150	125	C□	—	—	fr = 7 GHz
2SC5089	VHF/UHF band low-noise amp	10	40	150	125	MD□	—	—	fr = 10 GHz
★ 2SC5092	VHF/UHF band low-noise amp	10	40	150	125	D□	—	—	fr = 10 GHz
2SC5094	VHF/UHF band low-noise amp	10	15	150	125	ME□	—	—	fr = 10 GHz
★ 2SC5097	VHF/UHF band low-noise amp	10	15	150	125	E□	—	—	fr = 10 GHz
2SC5106	VHF/UHF oscillator	10	30	150	125	MF□	—	—	fr = 6 GHz
2SC5109	VHF/UHF oscillator	10	60	150	125	MG□	—	—	fr = 5 GHz
2SC5254	VHF/UHF band low-noise amp	7	40	150	125	MH□	—	—	fr = 12 GHz
★ 2SC5257	VHF/UHF band low-noise amp	7	40	150	125	MH□	—	—	fr = 12 GHz
2SC5259	VHF/UHF band low-noise amp	7	15	150	125	MI□	—	—	fr = 12 GHz
★ 2SC5262	VHF/UHF band low-noise amp	7	15	150	125	MI□	—	—	fr = 12 GHz
2SC5315	VHF/UHF band low-noise amp	5	20	150	125	MT	—	—	fr = 16 GHz
★ 2SC5318	VHF/UHF band low-noise amp	5	20	150	125	MT	—	—	fr = 16 GHz
2SC5320	VHF/UHF band low-noise amp	5	10	150	125	MU	—	—	fr = 16 GHz
★ 2SC5323	VHF/UHF band low-noise amp	5	10	150	125	MU	—	—	fr = 16 GHz
MT3S03A	VHF/UHF band low-noise amp	5	40	150	125	MR	—	—	fr = 10 GHz
MT4S03A	VHF/UHF band low-noise amp	5	40	150	125	MR	—	—	fr = 10 GHz
MT3S04A	VHF/UHF band low-noise amp	5	40	150	125	AE	—	—	fr = 7 GHz
MT4S04A	VHF/UHF band low-noise amp	5	40	150	125	AE	—	—	fr = 7 GHz
MT4S06	VHF/UHF band low-noise amp	5	15	150	125	AC	—	—	τ = 10 GHz
MT4S07	VHF/UHF band low-noise amp	5	25	150	125	AC	—	—	fr = 12 GHz

★: 4 leads

□: Denotes hFE classification symbol.

Super-Mini FETs (TO-236 equivalent, SC-59s)

Product No.	Application	Absolute Maximum Ratings (Ta = 25°C)					Mark	No. of Equivalent Product	Remarks
		VDSX⇄⇄ VGD0⇄ VbSS⇄⇄ VGDS (V)	Ic, Id⇄ (mA)	Pd (mW)	IbSS (mA)	Yfs (typ.) (mS)			
2SK210	FM high-frequency amp	-18⇄	10	100	3.0 to 24	7	Y□	2SK192A	
2SK211	FM high-frequency amp	-18⇄	10	100	1.0 to 10	9	K□	2SK161	
2SK302	VHF band amp	20⇄⇄	30⇄	150	1.5 to 14	10	T□	2SK241	MOSFET
2SK711	AM high-frequency amp	-20	10	150	6 to 32	25	RB	2SK709, 710	
★ 2SK1771	FM high-frequency amp	12.5⇄⇄	30⇄	150	0 to 0.1	15	UB	-	MOSFET
★ 3SK126	TV FM high-frequency amp	15⇄⇄	30⇄	150	0 to 6	20	UC	-	MOSFET
★ 3SK127	TV UHF high-frequency amp	15⇄⇄	30⇄	150	0 to 6	17	UD	-	MOSFET
★ 3SK151	TV VHF MIX	15⇄⇄	30⇄	150	3 to 14	27	UH	-	MOSFET
★ 3SK153	TV VHF/UHF high-frequency amp	13.5⇄⇄	30⇄	150	0 to 2	21	UI	-	MOSFET
★ 3SK195	TV VHF high-frequency amp	13.5⇄⇄	30⇄	150	0 to 0.1	13	UJ	-	MOSFET
★ 3SK199	TV UHF high-frequency amp	13.5⇄⇄	30⇄	150	0 to 0.1	21.5	UM	-	MOSFET
★ 3SK207	TV UHF high-frequency amp	13.5⇄⇄	30⇄	150	0 to 0.1	21.5	UR	-	MOSFET
★ 3SK225	TV VHF high-frequency amp	13.5⇄⇄	30⇄	150	0 to 0.1	21	UT	-	MOSFET
★ 3SK226	TV VHF high-frequency amp	13.5⇄⇄	30⇄	150	0 to 0.1	13	UU	-	MOSFET
★ 3SK232	TV UHF high-frequency amp	12.5⇄⇄	30⇄	150	0 to 0.1	21	UO	-	MOSFET
★ 3SK240	TV UHF high-frequency amp	-9⇄	25⇄	150	6 to 20	19	UN	-	GaAs MESFET
★ 3SK291	TV UHF high-frequency amp	12.5⇄⇄	30⇄	150	0 to 0.1	26	UF	-	MOSFET
★ 3SK292	TV VHF/UHF high-frequency amp	12.5⇄⇄	30⇄	150	0 to 0.1	23.5	UK	-	MOSFET

★: 4 leads (SC-61 equivalent)

□: Denotes loss classification symbol.

Ultra-Super-Mini Transistors (SC-70s, USMs)

Product No.	Application	Absolute Maximum Ratings (Ta = 25°C)				Mark	Complementary Device	No. of Equivalent TO-92 Product	Remarks (super-mini transistor)
		V _{CEO} (V)	I _c (mA)	P _c (mW)	T _j (°C)				
2SC4215	FM band high-frequency amp	30	20	100	125	Q□	—	2SC1923	2SC2668
2SC4245	UHF TV frequency converter	15	50	100	125	HB	—	—	fr = 2.4 GHz
2SC4246	UHF TV oscillator	15	50	100	125	HC	—	2SC2347	fr = 1.5 GHz
2SC4249	UHF TV high-frequency amp	30	20	100	125	HD	—	2SC4248	fr = 400 MHz (min)
2SC4250	UHF TV frequency converter	20	50	100	125	HE	—	2SC3136	fr = 900 MHz (min)
2SC4251	UHF TV oscillator	15	50	100	125	HF	—	2SC2349	fr = 650 MHz (min)
2SC4253	Video IF amp	25	50	100	125	HH	—	2SC388ATM	fr = 600 MHz
2SC4247	UHF TV oscillator	12	30	100	125	HM	—	—	fr = 4 GHz
2SC4248	UHF TV oscillator	12	30	100	125	HM	—	—	fr = 4 GHz
2SC4244	UHF TV high-frequency amp	20	20	100	125	HN	—	—	fr = 850 MHz
2SC4252	UHF TV oscillator	12	30	100	125	HO	—	—	fr = 2 GHz
2SC5065	VHF/UHF band low-noise amp	12	30	100	125	MA□	—	—	fr = 7 GHz
2SC5085	VHF/UHF band low-noise amp	12	80	100	125	MC□	—	—	fr = 7 GHz
★ 2SC5088	VHF/UHF band low-noise amp	12	80	100	125	MC□	—	—	fr = 7 GHz
2SC5090	VHF/UHF band low-noise amp	10	40	100	125	MD□	—	—	fr = 10 GHz
★ 2SC5093	VHF/UHF band low-noise amp	10	40	100	125	MD□	—	—	fr = 10 GHz
2SC5095	VHF/UHF band low-noise amp	10	15	100	125	ME□	—	—	fr = 10 GHz
★ 2SC5098	VHF/UHF band low-noise amp	10	15	100	125	ME□	—	—	fr = 10 GHz
2SC5107	VHF/UHF oscillator	10	30	100	125	MF□	—	—	fr = 6 GHz
2SC5110	VHF/UHF oscillator	10	60	100	125	MG□	—	—	fr = 5 GHz
2SC5255	VHF/UHF band low-noise amp	7	40	100	125	MH□	—	—	fr = 12 GHz
★ 2SC5258	VHF/UHF band low-noise amp	7	40	100	125	MH□	—	—	fr = 12 GHz
2SC5260	VHF/UHF band low-noise amp	7	15	100	125	MI□	—	—	fr = 12 GHz
★ 2SC5263	VHF/UHF band low-noise amp	7	15	100	125	MI□	—	—	fr = 12 GHz
2SC5316	VHF/UHF band low-noise amp	5	20	100	125	MT	—	—	fr = 16 GHz
★ 2SC5319	VHF/UHF band low-noise amp	5	20	100	125	MT	—	—	fr = 16 GHz
2SC5321	VHF/UHF band low-noise amp	5	10	100	125	MU	—	—	fr = 16 GHz
★ 2SC5324	VHF/UHF band low-noise amp	5	10	100	125	MU	—	—	fr = 16 GHz
2SC5463	VHF/UHF band low-noise amp	12	60	100	125	M□	—	—	fr = 7 GHz
★ MT4S32U	UHF band low-noise amp	4.5	15	67.5	125	U4	—	—	fr = 16 GHz
MTS303AU	VHF/UHF band low-noise amp	5	40	100	125	MR	—	—	fr = 10 GHz
★ MT4S03AU	VHF/UHF band low-noise amp	5	40	60	125	MR	—	—	fr = 10 GHz
MT3S04AU	VHF/UHF band low-noise amp	5	40	100	125	AE	—	—	fr = 7 GHz
★ MT4S04AU	VHF/UHF band low-noise amp	5	40	60	125	AE	—	—	fr = 7 GHz
MT3S06U	VHF/UHF band low-noise amp	5	15	100	125	AC	—	—	fr = 10 GHz
★ MT4S06U	VHF/UHF band low-noise amp	5	15	60	125	AC	—	—	fr = 10 GHz
MT3S07U	VHF/UHF band low-noise amp	5	25	100	125	AD	—	—	fr = 12 GHz
MT4S07U	VHF/UHF band low-noise amp	5	25	60	125	AD	—	—	fr = 12 GHz

★: 4 leads (USQ)

□: Denotes hFE classification symbol.

Ultra-Super-Mini FETs (SC-70s)

Product No.	Application	Electrical Characteristics (Ta = 25°C)					Mark	No. of Equivalent Product	Remarks
		V _{DSX} ↔ V _{GDO} ↔ V _{DSS} ↔ V _{GDS} (V)	I _c , I _D (mA)	P _D (mW)	I _{DSS} (mA)	Y _f s (typ.) (mS)			
2SK881	FM high-frequency amp	−18↔	10	100	1.0 to 10	9	K□	2SK161	
2SK882	VHF band amp	20↔↔	30↔	100	1.5 to 14	10	T□	2SK241	MOSFET
2SK1875	AM high-frequency amp	−20	10	100	6 to 32	25	RB	2SK711	
★ 3SK249	TV UHF high-frequency amp	12.5↔↔	30↔	100	0 to 0.1	21	UO	3SK232	MOSFET
★ 3SK256	TV UHF high-frequency amp	13.5↔↔	30↔	100	0 to 0.1	21.5	UR	3SK207	MOSFET
★ 3SK257	TV VHF high-frequency amp	13.5↔↔	30↔	100	0 to 0.1	21	UT	3SK225	MOSFET
★ 3SK258	TV VHF high-frequency amp	13.5↔↔	30↔	100	0 to 0.1	13	UU	3SK226	MOSFET
★ 3SK259	TV VHF/UHF high-frequency amp	13.5↔↔	30↔	100	0 to 2	21	UI	3SK153	MOSFET
★ 3SK260	TV VHF MIX	15↔↔	30↔	100	3 to 14	27	UH	3SK151	MOSFET
★ 3SK274	TV UHF high-frequency amp	−9↔	25↔	100	6 to 20	19	UN	3SK240	GaAs MESFET
★ 3SK293	TV UHF high-frequency amp	12.5↔↔	30↔	100	0 to 0.1	26	UF	3SK291	MOSFET
★ 3SK294	TV VHF/UHF high-frequency amp	12.5↔↔	30↔	100	0 to 0.1	23.5	UK	3SK292	MOSFET
★ 3SK320	UHF high-frequency amp	−6↔	18↔	100	9 to 18	22	U7	—	GaAs MESFET

★: 4 leads (SC-61 equivalent)

□: Denotes I_{DSS} classification symbol.

High-Frequency Small Super-Mini Transistors (SSMs)

Product No.	Application	Absolute Maximum Ratings (Ta = 25°C)				Mark	Complementary Device	No. of Equivalent TO-92 Product	Remarks (super-mini transistor)
		V _{CEO} (V)	I _c (mA)	P _c (mW)	T _j (°C)				
2SC4915	FM high-frequency amp	30	20	100	125	Q□	—	2SC1923	2SC2668
2SC5066	VHF/UHF band low-noise amp	12	30	100	125	M□	—	—	fr = 7 GHz
2SC5086	VHF/UHF band low-noise amp	12	80	100	125	M□	—	—	fr = 7 GHz
2SC5091	VHF/UHF band low-noise amp	10	40	100	125	M□	—	—	fr = 10 GHz
2SC5096	VHF/UHF band low-noise amp	10	15	100	125	M□	—	—	fr = 10 GHz
2SC5108	VHF/UHF oscillator	10	30	100	125	M□	—	—	fr = 6 GHz
2SC5111	VHF/UHF oscillator	10	60	100	125	M□	—	—	fr = 5 GHz
2SC5256	VHF/UHF band low-noise amp	7	40	100	125	MH□	—	—	fr = 12 GHz
2SC5261	VHF/UHF band low-noise amp	7	15	100	125	M□	—	—	fr = 12 GHz
2SC5313	VHF/UHF band low-noise amp	12	80	100	125	M□	—	2SC5086	2SC5086 with emitter and base pins reversed
2SC5317	VHF/UHF band low-noise amp	5	20	100	125	MT	—	—	fr = 16 GHz
2SC5322	VHF/UHF band low-noise amp	5	10	100	125	MU	—	—	fr = 16 GHz
2SC5464	VHF/UHF band low-noise amp	12	60	100	125	M□	—	—	fr = 7 GHz
MT3S03AS	VHF/UHF band low-noise amp	5	40	100	125	MR	—	—	fr = 10 GHz
MT3S04AS	VHF/UHF band low-noise amp	5	40	100	125	AE	—	—	fr = 7 GHz
MT3S06S	VHF/UHF band low-noise amp	5	15	100	125	AC	—	—	fr = 10 GHz
MT3S07S	VHF/UHF band low-noise amp	5	25	100	125	AD	—	—	fr = 12 GHz

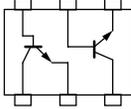
□: Denotes hFE classification symbol.

High-Frequency Extremely Thin Super-Mini Transistors (TESMs)

Product No.	Application	Electrical Characteristics (Ta = 25°C)				Mark	Complementary Device	No. of Equivalent Product	Remarks
		V _{CEO} (V)	I _c (mA)	P _c (mW)	T _j (°C)				
2SC5066FT	VHF/UHF band low-noise amp	12	30	100	125	M□	—	—	fr = 7 GHz
2SC5086FT	VHF/UHF band low-noise amp	12	80	100	125	M□	—	—	fr = 7 GHz
2SC5091FT	VHF/UHF band low-noise amp	10	40	100	125	M□	—	—	fr = 10 GHz
2SC5096FT	VHF/UHF band low-noise amp	10	15	100	125	M□	—	—	fr = 10 GHz
2SC5108FT	VHF/UHF band oscillator	10	30	100	125	M□	—	—	fr = 6 GHz
2SC5111FT	VHF/UHF band oscillator	10	60	100	125	M□	—	—	fr = 5 GHz
2SC5256FT	VHF/UHF band low-noise amp	7	40	100	125	M□	—	—	fr = 12 GHz
2SC5261FT	VHF/UHF band low-noise amp	7	15	100	125	M□	—	—	fr = 12 GHz
2SC5317FT	VHF/UHF band low-noise amp	5	20	100	125	MT	—	—	fr = 16 GHz
2SC5322FT	VHF/UHF band low-noise amp	5	10	100	125	MU	—	—	fr = 16 GHz
MT3S03AT	VHF/UHF band low-noise amp	5	40	100	125	MR	—	—	fr = 7 GHz
MT3S04AT	VHF/UHF band low-noise amp	5	40	100	125	AE	—	—	fr = 10 GHz
MT3S06T	VHF/UHF band low-noise amp	5	15	100	125	AC	—	—	fr = 10 GHz
MT3S07T	VHF/UHF band low-noise amp	5	25	100	125	AD	—	—	fr = 12 GHz

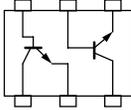
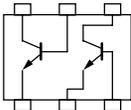
□: Denotes hFE classification symbol.

High-Frequency 6-Terminal Super-Mini Transistors (SM6s)

Product No.	Absolute Maximum Ratings (Ta = 25°C)			Structure	Internal Connections	Mark
	V _{CEO} (V)	I _c (mA)	P _c ★ (mW)			
HN3C01F	20	50	300	2SC3123 × 2		WA
HN3C02F	15	50	300	2SC3120 × 2		WB
HN3C03F	12	30	300	2SC3547A × 2		WC
HN3C09F	12	30	300	2SC5064 × 2		WK
HN3C10F	12	80	300	2SC5084 × 2		WL
HN3C11F	10	40	300	2SC5089 × 2		WM
HN3C12F	10	15	300	2SC5094 × 2		WN

★P_c: Total rating

High-Frequency 6-Terminal Ultra-Super-Mini Transistors (US6s)

Product No.	Absolute Maximum Ratings (Ta = 25°C)			Structure	Internal Connections	Mark	
	V _{CEO} (V)	I _c (mA)	P _c ★ (mW)				
HN3C01FU	20	50	200	2SC3123 × 2		WA	
HN3C02FU	15	50	200	2SC3120 × 2		WB	
HN3C03FU	12	30	200	2SC3547 × 2		WC	
HN3C09FU	12	30	200	2SC5064 × 2		WK	
HN3C10FU	12	80	200	2SC5084 × 2		WL	
HN3C11FU	10	40	200	2SC5089 × 2		WM	
HN3C12FU	10	15	200	2SC5094 × 2		WN	
HN3C13FU	10	30	200	2SC5107 × 2		WQ	
HN3C15FU	7	40	200	2SC5255 × 2		WT	
HN3C16FU	7	15	200	2SC5260 × 2		WU	
HN3C17FU	5	20	200	2SC5316 × 2		WV	
HN3C18FU	5	10	200	2SC5321 × 2		WW	
HN2C10FU	12	80	200	2SC5084 × 2			WO
HN2C12FU	10	15	200	2SC5094 × 2			WP

★P_c: Total rating

High-Frequency 6-Terminal Ultra-Super-Mini and Thin Transistors (TU6s)

Product No.	Absolute Maximum Ratings (Ta = 25°C)			Structure	fT (Q1/Q2) (GHz)	Internal Connections	Mark
	V _{CEO} (V)	I _c (mA)	P _c ★ (mW)				
HN2C10FT	12	80	200	2SC5085 × 2	7/7		WO
HN2C12FT	10	15	200	2SC5095 × 2	10/10		WP
MT6P03AT	5/5	40/40	200	MT3S03AS/MT3S03AS	10/10		ZW
MT6P04AT	5/5	40/40	200	MT3S04AS/MT3S04AS	7/7		ZC
MT6P06T	5/5	40/40	120	MT3S06S/MT3S06S	10/10		AY
MT6P07T	5/5	40/40	200	MT3S07S/MT3S07S	12/12		TD
HN3C10FT	12	80	200	2SC5086 × 2	7/7		
HN3C12FT	10	15	200	2SC5095 × 2	10/10	WN	
HN3C14FT	10	60	200	2SC5110 × 2	5/5	WS	
HN9C01FT	10 12	15 80	200	Q1 2SC5096 Q2 2SC5086	10/7		WW
HN9C08FT	10 10	40 40	200	2SC5091 × 2	10/10		ZE
HN9C14FT	12 12	30 30	200	2SC5066 × 2	7/7		ZK
HN9C15FT	10 7	40 40	200	Q1 2SC5091 Q2 2SC5256	10/12		ZL
HN9C22FT	10 10	15 30	200	Q1 2SC5096 Q2 2SC5066	10/7		ZS
MT6L03AT	5/5	100/100	200	MT3S03AS/MT3S03AS	10/10		TA
MT6L04AT	5/5	100/100	200	MT3S04AS/MT3S04AS	7/7		AV
MT6L50AT	7/5	40/100	200	2SC5256/MT3S04AS	12/7		ZN
MT6L51AT	7/5	40/100	200	2SC5256/MT3S03AS	12/10		AG
MT6L57AT	5/5	15/100	150	MT3S06S/MT3S04AS	10/7		AW
MT6L58AT	5/5	15/100	150	MT3S06S/MT3S03AS	10/10		AX
MT6L59T	5/5	15/25	150	MT3S06S/MT3S07S	10/12		TC
MT6L61AT	5/5	25/40	200	MT3S07S/MT3S04AS	12/7		TE
MT6L62AT	5/5	25/40	200	MT3S07S/MT3S03AS	12/10		TF

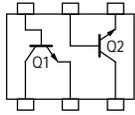
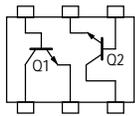
★Pc: Total rating

High-Frequency 6-Terminal Extreme-Super-Mini Transistors (ES6s)

Product No.	Absolute Maximum Ratings (Ta = 25°C)			Structure	fT (Q1/Q2) (GHz)	Internal Connections	Marking
	V _{CEO} (V)	I _c (mA)	P _c ★ (mW)				
MT6P03AE	5/5	40	100	MT3S03AT/MT3S03AT	10/10		ZW
MT6P04AE	5/5	40	100	MT3S04AT/MT3S04AT	7/7		ZC
MT6P06E	5/5	15/15	100	MT3S06T/MT3S06T	10/10		AY
MT6P07E	5/5	25/25	100	MT3S07T/MT3S07T	12/12		TD
HN3C10FE	12/12	80/80	100	2SC5086/2SC5086	7/7		WL
HN3C14FE	10/10	60/60	100	2SC5111/2SC5111	5/5		WS
MT6C03AE	5/5	40	100	MT3S03AT/MT3S03AT	10/10		AM
MT6C04AE	5/5	40	100	MT3S04AT/MT3S04AT	7/7	AL	
MT6C06E	5/5	15/15	100	MT3S06T/MT3S06T	10/10	AZ	
HN9C01FE	10/12	15/80	100	2SC5096/2SC5086	10/7		WX
MT6L03AE	5/5	40	100	MT3S03AT/MT3S03AT	10/10		TA
MT6L04AE	5/5	40	100	MT3S04AT/MT3S04AT	7/7		AV
MT6L50AE	7/5	40	100	2SC5256FT/MT3S04AT	12/7		ZN
MT6L51AE	7/5	40	100	2SC5256FT/MT3S03AT	12/10		AG
MT6L52AE	5/5	40	100	MT3S03T/MT3S04AT	10/7		AK
MT6L53E	5/5	15/40	100	MT3S06T/MT3S05T	10/7		WY
MT6L54E	5/8	15/40	100	MT3S06T/MT3S08T	10/7		ZD
MT6L55E	5/5	25/40	100	MT3S07T/MT3S05T	12/7		AR
MT6L56E	5/8	25/40	100	MT3S07T/MT3S08T	12/7		AS
MT6L57AE	5/5	15/100	100	MT3S06T/MT3S04AT	10/7		AW
MT6L58AE	5/5	15/100	100	MT3S06T/MT3S03T	10/10		AX
MT6L59E	5/5	15/25	100	MT3S06T/MT3S07T	10/12		TC
MT6L61AE	5/5	25/40	100	MT3S07T/MT3S04AT	12/10		TE
MT6L62AE	5/5	25/40	100	MT3S07T/MT3S03AT	12/10		TF

★Pc: Total rating

High-Frequency 6-Terminal Extreme-Super-Mini Transistors (sES6s)

Product No.	Absolute Maximum Ratings (Ta = 25°C)			Structure	fT (Q1/Q2) (GHz)	Internal Connections	Marking
	VCE0 (V)	Ic (mA)	Pc★ (mW)				
MT6C03AS	5/5	40/40	150	MT3S03AT/MT3S03AT	10/10		AM
MT6C04AS	5/5	40/40	150	MT3S04AT/MT3S04AT	7/7		AL
MT6L53S	5/5	15/40	150	MT3S06T/MT3S05T	10/7		WY
MT6L54S	5/8	15/40	150	MT3S06T/MT3S08T	10/7		ZD
MT6L55S	5/5	25/40	150	MT3S07T/MT3S05T	12/7		AR
MT6L56S	5/8	25/40	150	MT3S07T/MT3S08T	12/7		AS
MT6L57AS	5/5	15/40	150	MT3S06T/MT3S04AT	10/7		AW
MT6L58AS	5/5	15/40	150	MT3S06T/MT3S03AT	10/10		AX
MT6L61AS	5/5	25/40	150	MT3S07T/MT3S04AT	12/7		TE
MT6L62AS	5/5	25/40	150	MT3S07T/MT3S03AT	12/10		TF

★Pc: Total rating

High-Frequency Power Transistors & MOSFETs

Applications	Product No.	Absolute Maximum Ratings (T _c = 25°C)			P _o (W)			
		V _{CB0} (V)	P _c (T _c = 25°C) (W)	I _c (A)	Min	Test Conditions		
						V _{cc} (V)	f (MHz)	P _i (W)
27 MHz to 50 MHz CB Amateur radio	2SC2290	45	175	20	60 PEP	12.5	28	4 PEP
	2SC2879	45	250	25	100 PEP	12.5	28	8 PEP
	2SC2510	60	250	20	150 PEP	28	28	9 PEP
175 MHz Marine radio Professional radio Amateur radio	2SC2782	36	220	20	80	12.5	175	18

RF Power MOSFETs

Application		Product No.	Absolute Maximum Ratings (T _c = 25°C)			P _o (W)			
			V _{DSS} (V)	P _D (W)	I _{DD} (A)	Min	Test Conditions		
							V _{DD} (V)	f (MHz)	P _i (W)
TV broadcast	VHF	2SK1310A	100	250	12	190	50	230	10
	UHF	2SK1739A	80	250	11	90	40	770	10
Portable telephone	800 MHz	2SK2854	10	0.5	0.5	0.4	6	849	0.02
		2SK2855	10	0.5	1.0	1.26	6	849	0.4
Professional radio	520 MHz	2SK3074	30	3	1	0.5	9.6	520	0.02
		2SK3075	30	20	5	7.0	9.6	520	0.5
Portable telephone	900 MHz	2SK3077	10	0.1	0.1	0.06	4.8	900	0.001
		2SK3078	10	3	0.5	0.7	4.8	900	0.06
		2SK3079	10	20	5	3.3	4.8	900	0.7
FRS	470 MHz	2SK3077A	10	0.1	0.1	0.1	4.5	470	0.01
		2SK3078A	10	3	0.5	0.63	4.5	470	0.1
		2SK3079A	10	20	3	2.23	4.5	470	0
Professional radio	520 MHz	2SK3475	20	3	1	0.63	7.2	520	0.02
		2SK3476	20	20	3	7	7.2	520	0.5

RF Power Amplifier Modules

Product No.	Application	Frequency Range f (MHz)	P _o (W)	η _T (%)	ρ _i	Test Conditions P _i (mW)	V _{cc} (V)	
S-AV6	VHF	25-W FM marine radio	154 to 162	28	45	2.0	200	12.5/12.5
S-AV7		25-W FM amateur-use radio	144 to 148	28	45	2.0	200	12.5/12.5
S-AV10L		10-W FM professional-use radio	135 to 155	14	40	2.0	200	12.5/12.5
S-AV10H			150 to 175	14	40	2.0	200	12.5/12.5
S-AV17		50-W FM amateur-use radio	144 to 148	60	45	2.0	400	12.5/12.5
S-AU27AL	UHF	25-W FM professional-use radio	400 to 430	32	35	2.5	200	12.5/12.5/12.5
S-AU27AM			450 to 490	32	35	2.5	200	12.5/12.5/12.5
S-AU27AH			490 to 512	32	35	2.5	200	12.5/12.5/12.5
S-AU50L	UHF	5-W FM professional-use radio	400 to 430	7	40	3.0	50	4/9.6
S-AU50M			430 to 480	7	40	2.5	50	4/9.6
S-AU50H			470 to 520	6.5	40	4.5	50	4/9.6
S-AU57		5-W FM handy amateur-use radio	430 to 450	7	40	3.0	20	4/9.6
S-AU68L		5-W FM handy professional-use radio	400 to 420	7	35 (@P _o = 7 W)	5.0 (@P _o = 7 W)	20	4/9.6
			450 to 470	7	40 (@P _o = 7 W)	2.5 (@P _o = 7 W)	20	4/9.6
S-AU68M								

Micro PA

Module type

Product No.	Application	Frequency Range f (MHz)	Gp (Ave.) (dB)	Current (Ave.) (mA)	ACPR (Ave.) (dB) $\Delta f = 900$ kHz	Test condition	
						Po (dBmW)	Vcon/Vcc
S-AU81	for cdmaOne only Japan	887 to 925	28	380	-50	27	2.85/3.6

MMIC type

Product No.	Application	Frequency Range f (MHz)	Gp (Ave.) (dB)	Efficiency (Ave.) (%)	ACPR (Ave.) (dB) $\Delta f = 1.25$ MHz	Test condition	
						Po (dBmW)	Vcon/Vcc
TAG2014CS	for K-PCS (CDMA)	1850 to 1910	26	37	-47	28	2.75/3.6