



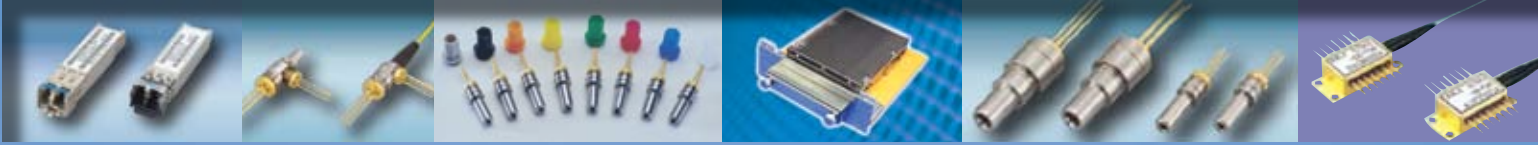
**电子元器件系列** (中国.厦门)

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# Optical Transmission Components

Data Links | Active Devices

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## SFP Transceivers



- Enhanced diagnostics on all modules
- Up to 80-km transmission available on all modules
- Complete family of SONET OC-3, OC-12, and OC-48 compliant modules
- Complete family of Gigabit Ethernet and Fibre Channel modules
- Complete family of CWDM SFPs
- Standard, extended, and industrial temperature ranges available
- MSA standard package with LC interface

### OC-3 SFP Transceivers

| Part No. | Application | LD          | PD  | Ind Temp | Pout      | RX Sens    |
|----------|-------------|-------------|-----|----------|-----------|------------|
| SCP6G01  | SR/IR-1     | 1310 nm FP  | PIN | Yes      | -15 to -8 | -28 to -8  |
| SCP6G11  | LR-1        | 1310 nm DFB | PIN | Yes      | -5 to 0   | -34 to -8  |
| SCP6G61  | LR-2        | 1550 nm DFB | PIN | Yes      | -5 to 0   | -34 to -10 |

### OC-12

| Part No. | Application | LD          | PD  | Ind Temp | Pout      | RX Sens   |
|----------|-------------|-------------|-----|----------|-----------|-----------|
| SCP6G02  | SR/IR-1     | 1310 nm FP  | PIN | Yes      | -15 to -8 | -28 to -8 |
| SCP6G12  | LR-1        | 1310 nm DFB | PIN | Yes      | -3 to +2  | -28 to -8 |
| SCP6G62  | LR-2        | 1550 nm DFB | PIN | Yes      | -3 to +2  | -28 to -8 |

### OC-48

| Part No. | Application | LD          | PD  | Ind Temp | Pout      | RX Sens   |
|----------|-------------|-------------|-----|----------|-----------|-----------|
| SCP6G28  | SR-1        | 1310 nm FP  | PIN | Yes      | -10 to -3 | -19 to -3 |
| SCP6G08  | IR-1        | 1310 nm DFB | PIN | Yes      | -5 to 0   | -18 to 0  |
| SCP6G18  | LR-1        | 1310 nm DFB | APD | Yes      | -2 to +3  | -27 to -9 |
| SCP6G78  | LR-2        | 1550 nm DFB | APD | Yes      | -2 to +3  | -28 to -9 |

### Fast Ethernet: 125 Mb/s

| Part No. | Application  | LD          | PD  | Ind Temp | Pout      | RX Sens   |
|----------|--------------|-------------|-----|----------|-----------|-----------|
| SCP6G03  | 100Base-LX10 | 1310 nm FP  | PIN | Yes      | -15 to -8 | -28 to -8 |
| SCP6G13  | 100Base-EX   | 1310 nm DFB | PIN | Yes      | -5 to 0   | -28 to -8 |
| SCP6G63  | 100Base-ZX   | 1550 nm DFB | PIN | Yes      | -3 to +2  | -30 to -8 |

### Gigabit Ethernet and 2x Fibre Channel: 1.250 Gb/s

| Part No. | Application | LD          | PD  | Ind Temp | Pout       | RX Sens     |
|----------|-------------|-------------|-----|----------|------------|-------------|
| SCP6G44  | 10 km       | 1310 nm FP  | PIN | Yes      | -9.5 to -3 | -20.5 to -3 |
| SCP6G14  | 40 km       | 1310 nm DFB | PIN | Yes      | -4.5 to 0  | -22.5 to 0  |
| SCP6G74  | 80 km       | 1550 nm DFB | PIN | Yes      | -2 to +3   | -24 to -0   |
| SCP6G94  | 80 km       | 1550 nm DFB | PIN | Yes      | 0 to +5    | -24 to 0    |

## SFP Transceivers

### 3.072 Gb/s CPRI

| Part No. | LD          | PD  | Ext Temp | Ind Temp | Pout      | RX Sens   |
|----------|-------------|-----|----------|----------|-----------|-----------|
| SCP6G29  | 1310 nm FP  | PIN | Yes      | Yes      | -10 to -3 | -18 to -3 |
| SCP6G09  | 1310 nm DFB | PIN | Yes      | Yes      | -5 to 0   | -18 to 0  |
| SCP6G19  | 1550 nm DFB | APD | Yes      | Yes      | -3 to +2  | -24 to -9 |

### 6.144 Gb/s CPRI

| Part No.  | LD           | PD  | Ext Temp | Ind Temp | Pout     | RX Sens   | Note   |
|-----------|--------------|-----|----------|----------|----------|-----------|--------|
| SPP5200SH | 850 nm VCSEL | PIN | Yes      | Yes      | -5.2 min | -11.2 min | in OMA |
| SPP5200LH | 1310 nm DFB  | PIN | Yes      | No       | -5.2 min | -11.2 min | in OMA |

### CWDM SFP Transceivers | 18 Standard CWDM Wavelengths from 1270 to 1610 nm

| Part No. | Bit Rate | Link Budget | LD  | PD  | Pout     | Pr        |
|----------|----------|-------------|-----|-----|----------|-----------|
| SCP6NK1  | OC-3     | 34dB        | DFB | PIN | 0 to +5  | -34 to -3 |
| SCP6NL2  | OC-12    | 28dB        | DFB | PIN | 0 to +5  | -28 to -8 |
| SCP6NB8  | OC-48    | 18dB        | DFB | PIN | 0 to +5  | -18 to 0  |
| SCP6NE8  | OC-48    | 28dB        | DFB | APD | 0 to +5  | -28 to -9 |
| SCP6NG4  | GbE      | 24dB        | DFB | PIN | 0 to +5  | -24 to 0  |
| SCP6NP4  | GbE      | 32dB        | DFB | APD | +1 to +5 | -31 to -8 |

## SFP+ Transceivers



- Hot pluggable 10 Gb/s serial optical interface
- High quality optical sub-assemblies
- 850-nm VCSEL for MMF application
- 1310-nm FP for LRM application
- 1310-nm DFB for 10-km transmission
- SFP+ MSA compliant
- Duplex LC receptacle
- 2-wire interface for management and diagnostics
- Standard and extended temperature ranges available
- Low power consumption (<1 W)

### SFP+ Multimode Transceivers

| Part No.   | Type       | Laser        | Distance | Temp (°C) | RoHS |
|------------|------------|--------------|----------|-----------|------|
| SPP5100SR  | 10GbE-SR   | 850 nm VCSEL | 300 m    | 0 to 70   | 6/6  |
| SPP5100SX  | 2/4/8G FC  | 850 nm VCSEL | 150 m    | 0 to 70   | 6/6  |
| SPP5200SR  | 10GbE-SR   | 850 nm VCSEL | 300 m    | -5 to 85  | 6/6  |
| SPP5200SX  | 2/4/8G FC  | 850 nm VCSEL | 150 m    | -5 to 85  | 6/6  |
| SPP5400SX* | 4/8/16G FC | 850 nm VCSEL | 100 m    | 0 to 70   | 6/6  |

\*16G FC in development

### SFP+ Single-Mode Transceivers

| Part No.   | Type       | Laser          | Distance | Temp (°C) | RoHS |
|------------|------------|----------------|----------|-----------|------|
| SPP5100LR  | 10GbE-LR   | 1310 nm DFB    | 10 km    | 0 to 70   | 6/6  |
| SPP5100LX  | 2/4/8G FC  | 1310 nm DFB    | 10 km    | 0 to 70   | 6/6  |
| SPP5200LR  | 10GbE-LR   | 1310 nm DFB    | 10 km    | -5 to 85  | 6/6  |
| SPP5200LX  | 2/4/8G FC  | 1310 nm DFB    | 10 km    | -5 to 85  | 6/6  |
| SPP5400LX* | 4/8/16G FC | 1310 nm DFB    | 10 km    | 0 to 70   | 6/6  |
| SPP5100ER  | 10GbE-ER   | 1550 nm EA-DFB | 40 km    | 0 to 70   | 6/6  |
| SPP5100ZR  | 10GbE-ZR   | 1550 nm EA-DFB | 80 km    | 0 to 70   | 6/6  |
| SPP5100DM  | 10GbE-ZR   | DWDM EA-DFB    | 80 km    | 0 to 70   | 6/6  |
| SPP5100CP  | 10GbE-ER   | CWDM EA-DFB    | 40 km    | 0 to 70   | 6/6  |

\*16G FC in development

## XFP Transceivers



- Hot pluggable 10-Gb/s serial optical interface
- In-house high quality optical sub-assemblies
- 1550-nm EML for 40 and 80-km transmission
- 1310-nm DFB for 10-km transmission
- CWDM and DWDM EA-DFB
- XFP MSA compliant
- 2-wire interface for digital diagnostics and management
- Multiprotocol: SONET, GbE, 10G FC

### XFP Multimode Transceivers

| Part No.  | Type     | Laser        | Distance | Temp (°C) | RoHS | DDM |
|-----------|----------|--------------|----------|-----------|------|-----|
| SXP3100SX | 10GbE-SR | 850 nm VCSEL | MMF 300m | -5 to 85  | 6/6  | Yes |

### XFP Single-Mode Transceivers

| Part No.     | Type                | Laser          | Distance | Temp (°C) | RoHS | DDM |
|--------------|---------------------|----------------|----------|-----------|------|-----|
| SXP3100LX    | 10GbE-LR            | 1310 nm DFB    | 10 km    | -5 to 70  | 6/6  | Yes |
| SXP3100LX-M  | 10GbE-LR            | 1310 nm DFB    | 10 km    | -5 to 85  | 6/6  | Yes |
| SXP3100NV    | SONET SR-1/10GbE-LR | 1310 nm DFB    | 10 km    | -5 to 70  | 6/6  | Yes |
| SXP3100NV-M  | SONET SR-1/10GbE-LR | 1310 nm DFB    | 10 km    | -5 to 85  | 6/6  | Yes |
| SXP3101EX-03 | 10GbE-ER            | 1550 nm EA-DFB | 40 km    | -5 to 70  | 5/6  | Yes |
| SXP3100EX    | 10GbE-ER            | 1550 nm EA-DFB | 40 km    | -5 to 70  | 6/6  | Yes |
| SXP3100EX-M  | 10GbE-ER            | 1550 nm EA-DFB | 40 km    | -5 to 85  | 6/6  | Yes |
| SXP3100S5    | SONET IR-2          | 1550 nm EA-DFB | 40 km    | -5 to 70  | 6/6  | Yes |
| SXP3100S5-M  | SONET IR-2          | 1550 nm EA-DFB | 40 km    | -5 to 85  | 6/6  | Yes |
| SXP3100SV    | SONET IR-2/10GbE-ER | 1550 nm EA-DFB | 40 km    | -5 to 70  | 6/6  | Yes |
| SXP3100SV-M  | SONET IR-2/10GbE-ER | 1550 nm EA-DFB | 40 km    | -5 to 85  | 6/6  | Yes |
| SXP3102ZX    | 10GbE-ZR            | 1550 nm EA-DFB | 80 km    | -5 to 70  | 6/6  | Yes |
| SXP3102ZX-M  | 10GbE-ZR            | 1550 nm EA-DFB | 80 km    | -5 to 85  | 6/6  | Yes |
| SXP3102L2    | SONET LR-2          | 1550 nm EA-DFB | 80 km    | -5 to 70  | 6/6  | Yes |
| SXP3102L2-M  | SONET LR-2          | 1550 nm EA-DFB | 80 km    | -5 to 85  | 6/6  | Yes |
| SXP3102LV    | SONET LR-2/10GbE-ZR | 1550 nm EA-DFB | 80 km    | -5 to 70  | 6/6  | Yes |
| SXP3102LV-M  | SONET LR-2/10GbE-ZR | 1550 nm EA-DFB | 80 km    | -5 to 85  | 6/6  | Yes |

### XFP CWDM Transceivers

| Part No.    | Type                | Laser       | Distance | Temp (°C) | RoHS | DDM |
|-------------|---------------------|-------------|----------|-----------|------|-----|
| SXP3102CP   | SONET IR-2/10GbE-ER | CWDM EA-DFB | 40 km    | -5 to 70  | 6/6  | Yes |
| SXP3102CP-M | SONET IR-2/10GbE-ER | CWDM EA-DFB | 40 km    | -5 to 85  | 6/6  | Yes |
| SXP3102CA   | SONET LR-2/10GbE-ZR | CWDM EA-DFB | 70 km    | -5 to 70  | 6/6  | Yes |

### XFP DWDM Transceivers

| Part No.  | Type                | Laser       | Distance | Temp (°C) | RoHS | DDM |
|-----------|---------------------|-------------|----------|-----------|------|-----|
| SXP3102DA | SONET LR-2/10GbE-ZR | DWDM EA-DFB | 80 km    | -5 to 70  | 6/6  | Yes |

## Tunable XFP-E Transceivers



- Hot pluggable 10 Gb/s serial optical interface
- Full C-band tunable operation
- Zero or negative chirp options
- Diagnostic optical monitoring
- 80 km dual rate (SONET OC-192, 10GbE)

### Tunable XFP-E Transceivers

| Part No.  | Type                | Laser                              | Distance | Temp (°C) | RoHS | DDM |
|-----------|---------------------|------------------------------------|----------|-----------|------|-----|
| SXP3202ZW | SONET LR-2/10GbE-ZR | Tunable DFB + MZM (Zero chirp)     | 80 km    | -5 to 70  | 6/6  | Yes |
| SXP3202NW | SONET LR-2/10GbE-ZR | Tunable DFB + MZM (Negative chirp) | 80 km    | -5 to 70  | 6/6  | Yes |

## CFP Transceivers



- 40 and 100 Gb/s Ethernet
- CFP MSA-compatible transceivers
- 10 km over SMF
- MDIO for management and diagnostic monitor
- Flat top or integrated heat sink
- IEEE802.3 100GBase-LR4 or 40Gbase-LR4

### CFP Transceivers

| Part No.  | Type       | Laser                  | Distance | Temp (°C) | RoHS | DDM |
|-----------|------------|------------------------|----------|-----------|------|-----|
| SCF0400L4 | 40GbE-LR4  | 1310 nm CWDM-DFB       | 10 km    | 0 to 70   | 6/6  | Yes |
| SCF1000L4 | 100GbE-LR4 | 1310 nm LAN-WDM EA-DFB | 10 km    | 0 to 70   | 6/6  | Yes |

## X2 Transceivers



- Hot pluggable 10 Gb/s serial optical interface
- In-house high quality optical sub-assemblies
- 1550-nm EML laser for 40 and 80-km transmission
- 1310-nm DFB for 10-km transmission
- X2 MSA compliant
- Duplex SC receptacle
- Link status interrupt
- Diagnostic optical monitoring
- Low power consumption

### X2 Multimode Transceivers

| Part No.  | Type      | Laser      | Distance | Temp (°C) | RoHS | Diagnostics |
|-----------|-----------|------------|----------|-----------|------|-------------|
| SDX4101LM | 10GbE-LRM | 1310 nm FP | 220 m    | 0 to 70C  | 5/6  | Yes         |

### X2 Single-Mode Transceivers

| Part No.  | Type      | Laser          | Distance | Temp (°C) | RoHS | Diagnostics |
|-----------|-----------|----------------|----------|-----------|------|-------------|
| SDX4102LR | 10GbE-LR  | 1310 nm DFB    | 10 km    | 0 to 70   | 5/6  | Yes         |
| SDX4102FL | LR/10G FC | 1310 nm DFB    | 10 km    | 0 to 70   | 5/6  | Yes         |
| SDX4101ER | 10GbE-ER  | 1550 nm EA-DFB | 40 km    | 0 to 70   | 5/6  | Yes         |
| SDX4101ZR | 10GbE-ZR  | 1550 nm EA-DFB | 80 km    | 0 to 70   | 5/6  | Yes         |
| SDX4100LR | 10GbE-LR  | 1310 nm DFB    | 10 km    | 0 to 70   | 6/6  | Yes         |
| SDX4100FL | LR/10G FC | 1310 nm DFB    | 10 km    | 0 to 70   | 6/6  | Yes         |

## 10 Gb/s EML Lasers



- 10 Gb/s long-haul optical transmission
- Full lineup covering SR-1, IR-1, IR-2, LR-2, and DWDM
- Built-in optical isolator, monitor photodiode, thermistor, and TEC
- 7-pin butterfly package with GPO connector

### 10 Gb/s EML Lasers

| Part No.    | Peak Wavelength (nm), Typ. | Pf (dBm), Min. | Extinction Ratio (dB), Min. | Rise Time (ps), Max. 20%-80% | Fall Time (ps), Max. 20%-80% | Fc (GHz) (Min.) | Dispersion (ps/nm) | Dispersion Penalty (dB) |
|-------------|----------------------------|----------------|-----------------------------|------------------------------|------------------------------|-----------------|--------------------|-------------------------|
| FLD5F20NP   | 1550                       | 0              | 10                          | 25                           | 25                           | 10              | 800                | 2                       |
| FLD5F20NP-C | 1550                       | 0              | 10                          | 25                           | 25                           | 10              | 1600               | 2                       |
| ELD5401NP-C | 1550                       | 1              | 10                          | 25                           | 25                           | 10              | 1600               | 2                       |
| ELD5401NP-H | 1550                       | 4              | 10                          | 25                           | 25                           | 10              | 1600               | 2                       |
| FLD3F10NP   | 1310                       | -5             | 6.5                         | 25                           | 25                           | 10              | 6.6                | 1                       |
| FLD3F10NP-A | 1310                       | 0              | 8.2                         | 25                           | 25                           | 10              | 80                 | 1                       |
| FLD3F10NP-B | 1310                       | 2              | 8.2                         | 25                           | 25                           | 10              | 80                 | 1                       |

### 10 Gb/s DWDM EML Lasers

| Series Part No.      | Peak Wavelength (nm), Typ. | Pf (dBm), Min. | Extinction Ratio (dB), Min. | Rise Time (ps), Max. 20%-80% | Fall Time (ps), Max. 20%-80% | Fc (GHz) (Min.) | Dispersion (ps/nm) | Dispersion Penalty (dB) |
|----------------------|----------------------------|----------------|-----------------------------|------------------------------|------------------------------|-----------------|--------------------|-------------------------|
| FLD5F20NP-D18 to D60 | 1529.55 to 1563.05*        | -1             | 10                          | 25                           | 25                           | 10              | 800                | 2                       |
| FLD5F20NP-E21 to E60 | 1529.55 to 1560.61*        | 0              | 10                          | 25                           | 25                           | 10              | 1600               | 2                       |

\*±0.1 nm

## 10 Gb/s EML TOSA



- EML with built-in cooler in compact package
- Low power consumption
- High wavelength stability
- Full line-up covering SR-1, IR-1, IR-2, LR-2, and DWDM applications
- Variety of optical interfaces, including LC, SC, and pigtail
- Available XMD-MSA compliant TOSA with FPC (8-pin)

### 10 Gb/s EML TOSA

| Series Part No.      | Peak Wavelength (nm) | Pf (dBm), Min. | Laser Set Temp (°C) | Extinction Ratio (dB), Min. | TEC Power (W) Max.* | Case Temp (°C) | Dispersion (ps/nm) | Dispersion Penalty (dB) | Interface |
|----------------------|----------------------|----------------|---------------------|-----------------------------|---------------------|----------------|--------------------|-------------------------|-----------|
| ELD5401QK-M          | 1530 to 1565         | -1             | 40                  | 8.2                         | 1.3                 | 0 - 80         | 800                | 2                       | LC        |
| ELD5401QK-N          | 1530 to 1565         | 0              | 40                  | 9                           | 1.3                 | 0 - 80         | 1600               | 2                       | LC        |
| ELD5401QK-P18 to P61 | 1528.77 to 1563.05*  | -1             | 35 - 45             | 8.2                         | 2                   | 0 - 80         | 800                | 2                       | LC        |
| ELD5401QK-Q18 to Q61 | 1528.77 to 1563.05*  | 0              | 35 - 45             | 9                           | 2                   | 0 - 80         | 1600               | 2                       | LC        |
| ELD5401FP-M          | 1530 to 1565         | -1             | 40                  | 8.2                         | 1.3                 | 0 - 80         | 800                | 2                       | SC        |
| ELD5401FP-N          | 1530 to 1565         | 0              | 40                  | 9                           | 1.3                 | 0 - 80         | 1600               | 2                       | SC        |
| ELD5401FP-P18 to P61 | 1528.77 to 1563.05*  | -1             | 35 - 45             | 8.2                         | 2                   | 0 - 80         | 800                | 2                       | SC        |
| ELD5401FP-Q18 to Q61 | 1528.77 to 1563.05*  | 0              | 35 - 45             | 9                           | 2                   | 0 - 80         | 1600               | 2                       | SC        |
| ELD5401BH-M          | 1530 to 1565         | -1             | 40                  | 8.2                         | 1.3                 | 0 - 75         | 800                | 2                       | Pigtail   |
| ELD5401BH-N          | 1530 to 1565         | 0              | 40                  | 9                           | 1.3                 | 0 - 75         | 1600               | 2                       | Pigtail   |
| ELD5401BH-P          | 1528.77 to 1563.05*  | -1             | 35 - 45             | 8.2                         | 1.3                 | 0 - 75         | 800                | 2                       | Pigtail   |
| ELD5401BH-Q          | 1528.77 to 1563.05*  | 0              | 35 - 45             | 9                           | 1.3                 | 0 - 75         | 1600               | 2                       | Pigtail   |
| ELD5403QK-M          | 1530 to 1565         | -1             | 45                  | 8.2                         | 1.3                 | 0 - 90         | 800                | 2                       | LC        |
| ELD5403QK-R          | 1530 to 1565         | -1             | 45                  | 8.2                         | 1.3                 | -40 - 90       | 800                | 2                       | LC        |
| ELD5406QK-M          | 1530 to 1565         | -1             | 45                  | 8.2                         | 1.3                 | 0 - 90         | 800                | 2                       | LC        |
| ELD5406QK-N          | 1530 to 1565         | 0              | 40 - 45             | 9                           | 1.3                 | 0 - 90         | 1600               | 2                       | LC        |
| ELD5406QK-P          | 1528.77 to 1563.05*  | -1             | 35 - 45             | 8.2                         | 2                   | 0 - 90         | 800                | 2                       | LC        |

\*±0.1 nm

# 10 Gb/s EML TOSA

## 10 Gb/s EML TOSA

| Series Part No. | Peak Wavelength (nm) | Pf (dBm), Min. | Laser Set Temp (°C) | Extinction Ratio (dB), Min. | TEC Power (W) Max.* | Case Temp (°C) | Dispersion (ps/nm) | Dispersion Penalty (dB) | Interface |
|-----------------|----------------------|----------------|---------------------|-----------------------------|---------------------|----------------|--------------------|-------------------------|-----------|
| ELD5406QK-Q     | 1528.77 to 1563.05*  | 0              | 35 - 45             | 9                           | 2                   | 0 - 90         | 1600               | 2                       | LC        |
| ELD5406QK-R     | 1530 to 1565         | -1             | 45                  | 8.2                         | 1.3                 | -40 - 90       | 800                | 2                       | LC        |
| ELD5406QK-S     | 1530 to 1565         | 0              | 40 - 45             | 9                           | 1.3                 | -40 - 90       | 1600               | 2                       | LC        |
| ELD5406QK-Txy   | 1528.77 to 1563.05*  | -1             | 35 - 45             | 8.2                         | 1.9                 | -40 - 90       | 800                | 2                       | LC        |
| ELD5406QK-Uxy   | 1528.77 to 1563.05*  | 0              | 35 - 45             | 9                           | 2                   | -40 - 90       | 1600               | 2                       | LC        |
| FLD3F10QK-M     | 1260 to 1360         | -5             | 40                  | 6                           | 1.3                 | 0 - 80         | 6.6                | 1                       | LC        |
| FLD3F10BH-M     | 1260 to 1360         | -5             | 40                  | 6                           | 1.3                 | 0 - 75         | 6.6                | 1                       | Pigtail   |
| FLD3F10QK-N     | 1260 to 1360         | 2              | 35                  | 6                           | 1.3                 | 0 - 80         | 70                 | 1                       | LC        |
| FLD3F10BH-N     | 1260 to 1360         | 2              | 35                  | 6                           | 1.3                 | 0 - 75         | 70                 | 1                       | Pigtail   |

\*±0.1 nm

## 10 Gb/s DML TOSA



- Uncooled 5.6-mm coaxial package
- Sleeve and stem electrically isolated
- XMD-MSA compliant TOSA with FPC
- OC-192-SR1, 10GbE-LR, 10Gb/s x 4 (10GbE-LR4) applications
- LC and SC interfaces available

### 10 Gb/s DML TOSA

| Series Part No.      | Application | pF (dBm), Min. | Wavelength (nm)     | Extinction Ratio (dB), Typ. | Case Temp. (°C) |
|----------------------|-------------|----------------|---------------------|-----------------------------|-----------------|
| SLX2X4F-LP/RH2       | 10GbE-LR    | -2             | 1310                | 5                           | -5 - 85         |
| SLX2X4F-LP           | OC-192-SR1  | -3             | 1310                | 7                           | -5 - 75         |
| SLX2X4F-LP/RH2-XnnnS | 40GbE-LR4   | 2              | 1271/1291/1311/1331 | 5                           | -5 - 75         |

## 40 Gb/s EML Laser



- MSA package for 40 Gb/s
- MI-DFB-LD (Modulator Integrated DFB Laser Diode)
- Integrated modulator driver
- Integrated optical isolator, PIN-PD monitor, thermistor, and TEC
- Differential SMPM (GPPQ) connector for RF signal interface

### 40 Gb/s EML Laser

| Series Part No. | Peak Wavelength (nm) | Pf (dBm), Min. | Laser Set Temp (°C) | Extinction Ratio (dB), Min. | TEC Power (W) Max.* | Case Temp (°C) | Dispersion (ps/nm) | Dispersion Penalty (dB) |
|-----------------|----------------------|----------------|---------------------|-----------------------------|---------------------|----------------|--------------------|-------------------------|
| ETM5401NF       | 1530 to 1565         | 0              | 25 - 45             | 8.5                         | 4.0                 | 0 - 75         | 40                 | 2                       |

## 2.5 Gb/s DWDM Lasers and 622-Mb/s Supervisory-Channel Lasers



- Directly modulated up to 2.5 Gb/s
- CW for use with external modulator for high speed, long distance applications
- CW with wavelength locker for tight spacing and long distance
- EML integrated laser for very long distance
- Uncooled supervisory channel lasers

### DM Lasers

| Series Part No. | Peak Wavelength (nm)* | Pf (mW), Min. | dλ (nm), Max. | λ stability (pm/°C) | Dispersion (ps/nm) | Dispersion Penalty (dB), Max. |
|-----------------|-----------------------|---------------|---------------|---------------------|--------------------|-------------------------------|
| FLD5F15CX-E     | 1527.99 to 1563.05    | 2             | 0.1           | ±1                  | 1800               | 2                             |
| FLD5F15CX-J     | 1527.99 to 1563.05    | 10            | 0.1           | ±1                  | 1800               | 2                             |
| FLD5F15CX-A     | 1527.99 to 1563.05    | 10            | 0.1           | ±1                  | 3200               | 2                             |

\*±0.1 nm

### CW Lasers | Pigtailed with PMF 10 and 40 Gb/s Long-Haul DWDM Transmission Systems | C and L-Band

| Series Part No. | Peak Wavelength (nm)*      | Pf (mW), Min. | dλ (nm), Max. | λ stability (pm/°C) |
|-----------------|----------------------------|---------------|---------------|---------------------|
| FLD5F15CX-H     | 1528.773-1569.594 (C-band) | 40            | 0.2           | ±1                  |
| FLD5F15CX-L     | 1570.416-1608.329 (L-band) | 40            | 0.2           | ±1                  |
| FLD5F15CX-K     | 1528.773-1569.594 (C-band) | 20            | 0.1           | ±1                  |
| FLD5F15CX-N     | 1570.416-1608.329 (L-band) | 20            | 0.1           | ±1                  |

\*±0.1 nm

### 2.5 Gb/s Cooled EML Lasers

| Series Part No. | Peak Wavelength (nm)* | Pf (mW), Min. | dλ (nm), Max. | Threshold Current (mA) | Laser Set Temp (°C) | Extinction Ratio (dB), Min. | Dispersion (ps/nm) | Dispersion Penalty (dB) |
|-----------------|-----------------------|---------------|---------------|------------------------|---------------------|-----------------------------|--------------------|-------------------------|
| ELD5301CN-A     | 1530.33-1560.61       | 1             | 0.2           | 2 - 40                 | 15-35               | 10                          | 6500               | 1.5                     |
| ELD5301CN-E     | 1530.33-1560.61       | 1             | 0.2           | 2 - 40                 | 15-35               | 10                          | 10,000             | 1.5                     |
| ELD5301CN-H     | 1530.33-1560.61       | 1             | 0.2           | 2 - 40                 | 15-35               | 10                          | 12,800             | 2                       |

\*±0.1 nm

### 622-Mb/s Uncooled Laser for Supervisory Channel | 4-Pin Coaxial Package

| Part No.     | Type           | Pout   | Isolated            | Package    |
|--------------|----------------|--------|---------------------|------------|
| SLT1430-S460 | 1625 nm DFB-LD | 3 mW   | Aspherical lens cap | 5.6 mm can |
| SLT1430-S850 | 1510 nm DFB-LD | 3 mW   | Aspherical lens cap | 5.6 mm can |
| SLT4400-S460 | 1625nm DFB-LD  | 2.0 mW | No                  | Pigtail    |
| SLT4400-S850 | 1510 nm DFB-LD | 2.0 mW | No                  | Pigtail    |
| SLT4460-S460 | 1625nm DFB-LD  | 2.0 mW | Yes                 | Pigtail    |
| SLT4460-S850 | 1510 nm DFB-LD | 2.0 mW | Yes                 | Pigtail    |

## 2.5 Gb/s CWDM Lasers and 622-Mb/s Supervisory-Channel Lasers



### CWDM DFB Lasers | 18 Channels | 4-Pin Coaxial

| Series Part No. | Pout (mW) | Data_Rate (Gb/s) | Options                        | Package Type        |
|-----------------|-----------|------------------|--------------------------------|---------------------|
| SLT1430-XnnnX   | 5         | 2.5              | Aspherical lens cap            | 5.6 mm can          |
| SLT1440-XnnnX   | 4.0       | 2.5              | Aspherical lens with short FL  | 5.6 mm can          |
| SLT2420-XnnnX   | 1.5       | 2.5              | SC sleeve                      | 5.6 mm TOSA         |
| SLT2420-XnnnX   | 1.5       | 2.5              | SC sleeve                      | 5.6 mm TOSA         |
| SLT2470-XnnnX   | 1.5       | 2.5              | LC sleeve                      | 3.8 mm mini-TOSA    |
| SLT2480-XnnnX   | 1.5       | 2.5              | LC sleeve with single isolator | 3.8 mm mini-TOSA    |
| SLT4410-XnnnX   | 2.0       | 2.5              | no isolator                    | 5.6 mm with pigtail |
| SLT4460-XnnnX   | 2.0       | 2.5              | single isolator                | 5.6 mm with pigtail |

### CWDM DFB Laser | 4-Channel LX4 | 4-Pin Coaxial

| Part No.      | Pout (mW) | Data Rate (Gb/s) | Options                        | Package Type        |
|---------------|-----------|------------------|--------------------------------|---------------------|
| SLT2270-XnnnX | 1.5       | 3.125            | LC sleeve, no isolator         | 3.8 mm mini-TOSA    |
| SLT2280-XnnnX | 1.5       | 3.125            | LC sleeve with single isolator | 3.8 mm mini-TOSA    |
| SLT4210-XnnnX | 2.0       | 3.125            | no isolator                    | 5.6 mm with pigtail |
| SLT4260-XnnnX | 2.0       | 3.125            | single isolator                | 5.6 mm with pigtail |

## Analog Lasers



- Economical uncooled lasers designed for return path links.
- InGaAsP/InP, SMQW lasers (Fabry-Perot and DFB) provide excellent distortion performance
- Wide temperature operation from -40 to 85°C RoHS Compliant
- Cooled high power DFBs for forward path and narrowcast applications
- Designed to meet Telcordia (Bellcore) and ITU-T requirements
- RoHS compliant

### Cooled Lasers for Forward Path | 14-Pin Butterfly Package with Pigtail

| Part No. | Peak Wavelength (nm) | Pf (mW), Min. | CSO (dBc), Max. | CTB (dBc), Max. | CNR (dB), Min. | Channel No. |
|----------|----------------------|---------------|-----------------|-----------------|----------------|-------------|
| FLD3F7CZ | 1310                 | 8             | -60             | -65             | 50             | 78          |
| FLD3F8CZ | 1310                 | 2             | -60             | -65             | 50             | 78          |

### Uncooled Lasers for Return Path | 4-Pin Coaxial Package with Pigtail

| Part No.             | Type        | Pf (mW) | IMD2 (dBc) | IMD3 (dBc) | RIN (dB/Hz) | Isolator | SNon (dBc) | SNoFF (dBc) |
|----------------------|-------------|---------|------------|------------|-------------|----------|------------|-------------|
| SLV3710              | 1310 nm FP  | 1       | -30        | -40        | -130        | none     | -45        | -30         |
| SLV4710              | 1310 nm FP  | 2       | -30        | -40        | -120        | none     | -35        | -20         |
| SLV4760              | 1310 nm FP  | 2       | -30        | -40        | -135        | 1 stage  | -45        | -40         |
| SLV4260              | 1310 nm DFB | 2       | -40        | -55        | -145        | 1 stage  | -50        | -32         |
| SLV4270              | 1310 nm DFB | 2       | -40        | -55        | -150        | 2 stage  | -60        | -52         |
| SLV4460              | 1550 nm DFB | 2       | -40        | -60        | -145        | 1 stage  | -55        | -35         |
| SLV4470              | 1550 nm DFB | 2       | -40        | -55        | -150        | 2 stage  | -          | -           |
| SLV4460-XnnnX Series | CWDM DFB    | 2       | -40        | -50        | -145        | 1 stage  | -          | -           |

### Lasers for Wireless | 4-Pin Coaxial Package with Pigtail

| Part No.             | Type        | Pout (mW) | IMD3 (dBc) | Isolator |
|----------------------|-------------|-----------|------------|----------|
| SLW4260              | 1310 nm DFB | 3         | -65        | 1 stage  |
| SLW4760              | 1310 nm FP  | 2         | -55        | 1 stage  |
| SLW4270              | 1310 nm DFB | 3         | -65        | 2 stage  |
| SLW4460              | 1550 nm DFB | 3         | -65        | 1 stage  |
| SLW4860              | 1310 nm DFB | 3         | -65        | 1 stage  |
| SLW4470              | 1550 nm DFB | 3         | -65        | 2 stage  |
| SLW4460-XnnnX Series | CWDM DFB    | 3         | -65        | 1 stage  |
| SLW4470-XnnnX Series | CWDM DFB    | 3         | -65        | 2 stage  |

## Analog Lasers

### Analog Photodiodes | 3-Pin Coaxial Package with Pigtail

| Part No. | Type       | Responsivity (A/W) | Fc (dBc) | Cp (dBc) | IMD2 (dBc) | IMD3 (dBc) | Dark Current (nA) |
|----------|------------|--------------------|----------|----------|------------|------------|-------------------|
| SPV3200  | InGaAs/InP | 0.90               | > 2.5    | < 0.8    | -70        | -80        | <1                |
| SPV3210  | InGaAs/InP | 0.90               | > 2.5    | < 0.8    | -70        | -80        | <1                |

## Digital Lasers up to 2.5 Gb/s

### Coaxial Fabry-Perot Lasers | 4-Pin 5.6-mm TO Can

| Part No. | Wavelength | Pout (mW) | Data Rate | Package Option                    |
|----------|------------|-----------|-----------|-----------------------------------|
| SLT1100  | 1310 nm    | 5         | 622 Mb/s  | Flat window                       |
| SLT1130  | 1310 nm    | 5         | 2.5 Gb/s  | Aspherical lens cap               |
| SLT1730  | 1310 nm    | 8         | 2.5 Gb/s  | Aspherical lens cap               |
| SLT1740  | 1310 nm    | 8         | 2.5 Gb/s  | Aspherical lens cap with short FL |
| SLT1300  | 1550 nm    | 5         | 622 Mb/s  | Flat window                       |
| SLT1330  | 1550 nm    | 5         | 622 Mb/s  | Aspherical lens cap               |

### Coaxial DFB Lasers | 4-Pin 5.6-mm TO Can

| Part No.     | Wavelength | Pout (mW) | Data Rate (Gb/s) | Package Option                    |
|--------------|------------|-----------|------------------|-----------------------------------|
| SLT1200      | 1310 nm    | 7         | 2.5              | Flat window                       |
| SLT1230      | 1310 nm    | 7         | 2.5              | Aspherical lens cap               |
| SLT1240      | 1310 nm    | 7         | 2.5              | Aspherical lens cap with short FL |
| SLT12D0      | 1310 nm    | 7         | 2.5              | Ball lens                         |
| SLT1830      | 1310 nm    | 7         | 2.5              | Aspherical lens cap               |
| SLT1840      | 1310 nm    | 5         | 2.5              | Aspherical lens cap               |
| SLT1436-G120 | 1490 nm    | 6         | 2.5              | Aspherical lens cap               |
| SLT1446-G120 | 1490 nm    | 6         | 2.5              | Aspherical lens cap with short FL |
| SLT1400      | 1550 nm    | 5         | 2.5              | Flat window                       |
| SLT1430      | 1550 nm    | 3         | 2.5              | Aspherical lens cap               |
| SLT1440      | 1550 nm    | 5         | 2.5              | Aspherical lens cap with short FL |
| SLT14D0      | 1550 nm    | 5         | 2.5              | Ball lens                         |

### TOSA | 5.6 mm Package | SC Sleeve

| Part No.   | Type | Wavelength | Pout (mW) | Data Rate |
|------------|------|------------|-----------|-----------|
| SLT2000-CN | FP   | 1310 nm    | 0.16      | 155 Mb/s  |
| SLT2110-CN | FP   | 1310 nm    | 0.4       | 1.25 Gb/s |
| SLT2220-CN | DFB  | 1310 nm    | 1.5       | 2.5 Gb/s  |

## Digital Lasers up to 2.5 Gb/s

### Mini-TOSA | 3.8 mm Package | LC Sleeve

| Part No.   | Type | Wavelength | Pout (mW) | Data Rate (Gb/s) |
|------------|------|------------|-----------|------------------|
| SLT2070-LN | FP   | 1310 nm    | 0.16      | 2.5              |
| SLT2170-LN | FP   | 1310 nm    | 0.4       | 1.25             |
| SLT2770-LN | FP   | 1310 nm    | 0.4       | 2.5              |
| SLT2A70-LR | FP   | 1310 nm    | 0.4       | 4.25             |
| SLT2270-LN | DFB  | 1310 nm    | 1.5       | 2.5              |
| SLT2280-LN | DFB  | 1310 nm    | 1.5       | 2.5              |
| SLT2880-LN | DFB  | 1310 nm    | 2.5       | 2.5              |
| SLT2880-LR | DFB  | 1310 nm    | 0.4       | 4.25             |
| SLT2470-LN | DFB  | 1550 nm    | 1.5       | 2.5              |
| SLT2480-LN | DFB  | 1550 nm    | 1.5       | 2.5              |
| SLT2490-LN | DFB  | 1550 nm    | 1.5       | 2.5              |

### Pigtailed Coaxial Fabry-Perot Lasers

| Part No. | Wavelength | Pout (mW) | Data Rate | Isolated |
|----------|------------|-----------|-----------|----------|
| SLT3000  | 1310 nm    | 0.2       | 622 Mb/s  | No       |
| SLT3110  | 1310 nm    | 0.5       | 622 Mb/s  | No       |
| SLT3120  | 1310 nm    | 0.4       | 2.5 Gb/s  | No       |
| SLT4100  | 1310 nm    | 1.0       | 622 Mb/s  | No       |
| SLT4110  | 1310 nm    | 2.0       | 622 Mb/s  | No       |
| SLT4710  | 1310 nm    | 3.0       | 1.25 Gb/s | No       |
| SLT4760  | 1310 nm    | 3.0       | 1.25 Gb/s | Yes      |
| SLT4310  | 1550 nm    | 2.0       | 2.5 Gb/s  | No       |
| SLT4360  | 1550 nm    | 2.0       | 2.5 Gb/s  | Yes      |

### Pigtailed Coaxial DFB Lasers

| PN      | Wavelength | Pout (mW) | Data Rate (Gb/s) | Isolated |
|---------|------------|-----------|------------------|----------|
| SLT4210 | 1310 nm    | 2.0       | 2.5              | No       |
| SLT4260 | 1310 nm    | 2.0       | 2.5              | Yes      |
| SLT4810 | 1310 nm    | 3.0       | 2.5              | No       |
| SLT4860 | 1310 nm    | 3.0       | 2.5              | Yes      |
| SLT4410 | 1550 nm    | 2.0       | 2.5              | No       |
| SLT4440 | 1550 nm    | 4.0       | 2.5              | Yes      |
| SLT4460 | 1550 nm    | 2.0       | 2.5              | Yes      |
| SLT4210 | 1310 nm    | 2.0       | 2.5              | No       |

## Digital PIN Photodiodes up to 2.5 Gb/s

### PIN Photodiodes | 3-Pin Coaxial Package

| Part No.  | Type   | Responsivity (A/W) | Cp (pF) | Interface |
|-----------|--------|--------------------|---------|-----------|
| SPT2400   | InGaAs | 0.85               | <1.7    | FC or SC  |
| SPT2401-D | InGaAs | 0.85               | <1.7    | FC        |
| SPT3200   | InGaAs | 0.9                | 0.6     | Pigtail   |
| SPT3400   | InGaAs | 0.9                | <1.7    | Pigtail   |
| SPT3900   | InGaAs | 0.8                | <1.7    | Pigtail   |

## 10 Gb/s PIN Coaxial Mini-ROSAs



- Complete package – PIN, preamp, and pigtail, SC, or LC sleeve
- High sensitivity and wide dynamic range
- High gain and high transimpedance
- Excellent overload performance
- XMD compliant package available with FPC
- Single 3.3 V supply
- Sleeve and stem electrically isolated

### 10 Gb/s PIN Coaxial Mini-ROSAs

| Part No.    | Spot Size (um) | Fc (MHz) | Zt (kW) | Noise (pA/√Hz) | Input Power (dBm) | Interface | Application                    |
|-------------|----------------|----------|---------|----------------|-------------------|-----------|--------------------------------|
| SRD2145-LG1 | 30             | 10,000   | 2       | 10             | -19               | LC        | SFP+ LR, XFP multirate LR/SR-1 |
| SRD2145-LG3 | 30             | 8500     | 6       | 8              | -19               | LC        | XFP multirate ER/IR-2          |
| SRD2245-LZ3 | 30             | 7500     | 3.5     | 14.5           | -15.5             | LC        | Designed for 10GbE-LRM         |
| SRD2245-CG3 | 30             | 7500     | 3.5     | 14.5           | -15.5             | SC        | Designed for 10GbE-LRM         |
| SRD4142-CS1 | 30             | 10,000   | 2       | 10             | -20               | Pigtail   | 300 pin TRP                    |

## 10 Gb/s Receivers



- Compact 9-pin or 17-pin coplanar MSA package
- High sensitivity and excellent overload performance
- High transimpedance gain
- Threshold control function
- Maximum output voltage switching: 180 mVpp (single ended), 360 mV (differential)
- Response wavelength: 1270 to 1620 nm
- Operating case temperature: -5°C to 75°C
- Single 3.3 V supply voltage

### 10 Gb/s High-Gain, High-Sensitivity Receivers

High Transimpedance Gain : 4.5 k $\Omega$  (Single Ended), 9 k $\Omega$  (Differential)

Maximum Output Voltage Switching: 180 mVpp (Single Ended), 360 mV (Differential)

| Part No.  | Type | Responsivity (A/W), Typ. | Transimpedance Z <sub>t</sub> (k $\Omega$ ), Typ. | -3 dB Bandwidth (GHz), Typ. | Minimum Sensitivity (dBm) | Overload P <sub>max</sub> (dBm), Max. | Package |
|-----------|------|--------------------------|---------------------------------------------------|-----------------------------|---------------------------|---------------------------------------|---------|
| ERP1404GW | PIN  | 1                        | 4.5                                               | 9                           | -20.5                     | 0                                     | 9 pin   |
| ERP1404GT | PIN  | 1                        | 4.5                                               | 9                           | -20.5                     | 0                                     | 17 pin  |
| ERA1404GW | APD  | 0.9                      | 4.5                                               | 8                           | -28                       | 0                                     | 9 pin   |
| ERA1404GT | APD  | 0.9                      | 4.5                                               | 8                           | -28                       | 0                                     | 17 pin  |
| ERA1404PW | APD  | 0.9                      | 4.5                                               | 7                           | -28                       | 0                                     | XMD FPC |

### 10 Gb/s Linear Receivers

Transimpedance Gain: 0.9 k $\Omega$  (Single Ended), 1.8 k $\Omega$  (Differential)

Maximum Output Voltage Swing: 550 mVpp (Single Ended), 1100 mV (Differential) | PIN

| Part No.  | Type | Responsivity (A/W), Typ. | Transimpedance Z <sub>t</sub> (k $\Omega$ ), Typ. | -3 dB Bandwidth (GHz), Typ. | Minimum Sensitivity (dBm) | Overload P <sub>max</sub> (dBm), Max. | Package |
|-----------|------|--------------------------|---------------------------------------------------|-----------------------------|---------------------------|---------------------------------------|---------|
| ERP1402GW | PIN  | 1                        | 0.9                                               | 9                           | -20                       | 0                                     | 9-pin   |
| ERP1402GT | PIN  | 1                        | 0.9                                               | 9                           | -20                       | 0                                     | 17-pin  |
| ERA1402GW | APD  | 0.9                      | 0.9                                               | 8                           | -27.5                     | 0                                     | 9-pin   |
| ERA1402GT | APD  | 0.9                      | 0.9                                               | 8                           | -27.5                     | 0                                     | 17-pin  |

### 10 Gb/s Linear AGC Receivers

Maximum Output Voltage Swing: 550 mVpp (Single Ended), 1100 mV (Differential)

| Part No.  | Type | Responsivity (A/W), Typ. | Transimpedance Z <sub>t</sub> (k $\Omega$ ), Typ. | -3 dB Bandwidth (GHz), Typ. | Minimum Sensitivity (dBm) | Overload P <sub>max</sub> (dBm), Max. | Package |
|-----------|------|--------------------------|---------------------------------------------------|-----------------------------|---------------------------|---------------------------------------|---------|
| ERP1405GW |      | 1                        | 6                                                 | 8.5                         | -19                       | 3                                     | 9-pin   |
| ERP1405GT |      | 1                        | 6                                                 | 8.5                         | -19                       | 3                                     | 17-pin  |
| ERA1405GW | APD  | 0.9                      | 6                                                 | 7                           | -28                       | 0                                     | 9-pin   |
| ERA1405GT | APD  | 0.9                      | 6                                                 | 7                           | -28                       | 0                                     | 17-pin  |
| ERA1405PW | APD  | 0.9                      | 6                                                 | 7                           | -28                       | 0                                     | 8-pin   |

## 10 Gb/s Receivers

### 10 Gb/s Receivers with VOA

Transimpedance Gain: 0.9 k $\Omega$  (Single Ended), 1.8 k $\Omega$  (Differential)

Maximum Output Voltage Swing: 550 mVpp (Single Ended), 1100 mV (Differential) | 20 dB VOA Attenuation Range

| Part No.  | Type | Responsivity<br>(A/W), Typ. | Transimpedance<br>Z <sub>t</sub> (k $\Omega$ ), Typ. | -3 dB<br>Bandwidth<br>(GHz), Typ. | Minimum<br>Sensitivity<br>(dBm) | Overload<br>P <sub>max</sub> (dBm),<br>Max. | Package |
|-----------|------|-----------------------------|------------------------------------------------------|-----------------------------------|---------------------------------|---------------------------------------------|---------|
| ERA1452GT | APD  | 0.9                         | 0.9                                                  | 8                                 | -27.5                           | 0                                           | 17-pin  |
| ERA1453GT | APD  | 0.9                         | 1.5                                                  | 7                                 | -28                             | 0                                           | 17-pin  |
| ERA1454GT | APD  | 0.9                         | 4.5                                                  | 8                                 | -28                             | 0                                           | 17-pin  |
| ERA1455GT | APD  | 0.9                         | 6                                                    | 7                                 | -28                             | 0                                           | 17-pin  |

### 10 Gb/s Mid-Gain Receivers

Transimpedance Gain: 1.5 k $\Omega$  (Single Ended), 3 k $\Omega$  (Differential)

Maximum Output Voltage Swing: 600 mVpp (Single Ended), 1200 mV (Differential)

| Part No.  | Type | Responsivity<br>(A/W), Typ. | Transimpedance<br>Z <sub>t</sub> (k $\Omega$ ), Typ. | -3 dB<br>Bandwidth<br>(GHz), Typ. | Minimum<br>Sensitivity<br>(dBm) | Overload<br>P <sub>max</sub> (dBm),<br>Max. | Package |
|-----------|------|-----------------------------|------------------------------------------------------|-----------------------------------|---------------------------------|---------------------------------------------|---------|
| ERP1403GW | PIN  | 1                           | 1.5                                                  | 8                                 | -20                             | 0                                           | 9-pin   |
| ERP1403GT | PIN  | 1                           | 1.5                                                  | 8                                 | -20                             | 0                                           | 17-pin  |
| ERA1403GW | APD  | 0.9                         | 1.5                                                  | 7                                 | -28                             | 0                                           | 9-pin   |
| ERA1403GT | APD  | 0.9                         | 1.5                                                  | 7                                 | -28                             | 0                                           | 17-pin  |

## 2.5 Gb/s Mini-DIL Receivers



- Mini-DIL package type preamplifier modules
- Through hole or board mount package
- Built-in InGaAs APD and GaAs IC preamplifier
- Bandwidth: 2.2 GHz min.
- Minimum sensitivity: -34dBm typ.
- Overload input power: -5dBm min.
- Wide operating temperature: -40°C to 85°C

### 2.5 Gb/s Mini-DIL Receivers

| Part No.   | Responsivity<br>(A/W), Typ. | Transimpedance Z <sub>t</sub> (kΩ),<br>Typ. | -3 dB<br>Bandwidth<br>(GHz), Typ. | Minimum<br>Sensitivity<br>(dBm) | Overload P <sub>max</sub><br>(dBm), Max. | Application<br>Range |
|------------|-----------------------------|---------------------------------------------|-----------------------------------|---------------------------------|------------------------------------------|----------------------|
| FRM5W234BS | 0.85                        | 2.6                                         | 1.6                               | -35                             | -5                                       | 156 Mb/s to 2.7 Gb/s |

## 2.5 Gb/s Coaxial Receivers



- 5-pin coaxial compact package with LC receptacle
- APD and PIN receivers
- Built-in InGaAs PD and 3.3V GaAs preamplifier IC
- Differential output

### 1.25/2.5 Gb/s APD Coaxial Receivers, LC

| Part No.  | Responsivity (A/W), Typ. | Transimpedance $Z_t$ (k $\Omega$ ), Typ. | -3 dB Bandwidth (GHz), Typ. | Minimum Sensitivity (dBm) | Overload $P_{max}$ (dBm), Max. | Data Rate (Gb/s)    |
|-----------|--------------------------|------------------------------------------|-----------------------------|---------------------------|--------------------------------|---------------------|
| ERA2303PZ | 0.85                     | 0.6                                      | 2.1                         | -33                       | -8                             | 2.5                 |
| ERA2355PZ | 0.85                     | 2.6                                      | 1.8                         | -34                       | -5                             | 2.5 for DWDM        |
| ERA1302PZ | 0.85                     | 0.88                                     | 0.85                        | -34                       | -7                             | 1.25 for Burst Mode |

### 2.5 Gb/s PIN Preamp Coaxial Receivers

| Part No.   | Responsivity (A/W), Typ. | Transimpedance $Z_t$ (k $\Omega$ ), Typ. | -3 dB Bandwidth (GHz), Typ. | Minimum Sensitivity (dBm) | Overload $P_{max}$ (dBm), Max. | Data Rate (Gb/s)     |
|------------|--------------------------|------------------------------------------|-----------------------------|---------------------------|--------------------------------|----------------------|
| FRM3Z234LY | 0.85                     | 2.6                                      | 1.5                         | -26                       | 0                              | 156 Mb/s to 2.7 Gb/s |
| FRM3Z234HY | 0.85                     | 2.6                                      | 1.5                         | -26                       | 0                              | 156 Mb/s to 2.7 Gb/s |

### 2.5 Gb/s APD Preamp Coaxial Receivers, Pigtailed

| Part No.   | Responsivity (A/W), Typ. | Transimpedance $Z_t$ (k $\Omega$ ), Typ. | -3 dB Bandwidth (GHz), Typ. | Minimum Sensitivity (dBm) | Overload $P_{max}$ (dBm), Max. | Data Rate (Gb/s)          |
|------------|--------------------------|------------------------------------------|-----------------------------|---------------------------|--------------------------------|---------------------------|
| FRM5W234LY | 0.85                     | 2.6                                      | 1.8                         | -35                       | -5                             | 156 Mb/s to 2.7 Gb/s DWDM |
| FRM5W234HY | 0.85                     | 2.6                                      | 1.8                         | -35                       | -5                             | 156 Mb/s to 2.7 Gb/s DWDM |