OPTRONICS 10 Gigabit SFP+ Transceivers

PRODUCT FEATURES

- ♦ Optical interface compliant to IEEE 802.3ae 10GBASE-LR
- ♦ Electrical interface compliant to SFF-8431
- ♦ Hot Pluggable
- ♦ 1310nm DFB transmitter, PIN photo-detector
- ♦ Operating case temperature: 0 to 70 °C
- ♦ Low power consumption
- ♦ Applicable for 10km SMF connection
- ♦ All-metal housing for superior EMI performance
- ♦ Advanced firmware allow customer system encryption information to be stored in transceiver
- ♦ Cost effective SFP+ solution, enables higher port densities and greater bandwidth
- ♦ RoHS6 compliant (lead free)

APPLICATIONS

- ♦ 10GBASE-LR at 10.3125Gbps
- ♦ Other optical links

This 1310 nm DFB 10Gbps SFP+ transceiver is designed to transmit and receive optical data over single mode optical fiber for link length 10km (1550nm for 40Km).

The SFP+ 10km module electrical interface is compliant to SFI electrical specifications. The transmitter input and receiver output impedance is 100 Ohms differential. Data lines are internally AC coupled. The module provides differential termination and reduce differential to common mode conversion for quality signal termination and low EMI. SFI typically operates over 200 mm of improved FR4 material or up to about 150mmof standard FR4 with one connector.

Optical characteristics

The following optical characteristics are defined over the Recommended Operating Environment unless otherwise specified.

	Unit	Values	
Operating Reach	m	**10K**	
Transmit			
Center wavelength (range)	nm	1260 -1355	
Side Mode Suppression Ratio (min)	dB	30	
Launched power			
– maximum	dBm	+0.5	
– minimum	dBm	-8.2	Notes1
– OMA	dBm	-5.2	
– OMA-TDP (min)	dBm	-6.2	
Transmitter and dispersion penalty	dB	0	Notes4
Average launch power of OFF transmitter (max)	dBm	-30	
Extinction ratio (min)	dB	3.5	Notes2
RIN12 OMA (max)	dB/Hz	-128	
Optical Return Loss Tolerance (min)	dB	12	
Receiver			
Center wavelength (range)	nm	1260-1355	
Receive overload (max) in average power[1]	dBm	0.5	
Receive sensitivity (min) in average power[1]	dBm	-14.4	Notes3
Receiver sensitivity (max) in OMA (footnote 2)	dBm	-12.6	Notes3
Receiver Reflectance (max)	dB	-12	
Stressed receiver sensitivity (max) in OMA[2]	dBm	-10.3	
Vertical eye closure penalty (min)[3]	dB	2.2	
Stressed eye jitter (min)[2]	Ulp-p	0.7	
Receive electrical 3dB upper cutoff frequency (max)	GHz	12.3	
Receiver power (damage, Max)	dBm	1.5	

Notes:

1. The optical power is launched into SMF
2. Measured with a PRBS 2^{31}-1 test pattern@10.3125Gbps
3. Measured with a PRBS 2^{31}-1 test pattern@10.3125Gbps BER≤10^{-12}
4. In G.652 and G.655(NDSF)

ORDER CODES

OPSFP+10G-LR-SM	OPTRONICS 10.3 Gigabit Singlemode SFP Transceivers 1310 nm, up to 10Km
OPSFP+10G-ER-SM	OPTRONICS 10.3 Gigabit Singlemode SFP Transceivers 1550 nm, up to 40Km

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