

622Mbps LC Singlemode Optical Transceiver (SFF)

Features

- LC duplex receptacle
- Standard 2 x 5 footprint
- 1310nm or 1550nm laser transmitter with automatic power control function
- AC or DC coupled PECL/LVPECL compatible data input and output
- Transmitter disable input
- PECL or TTL signal detect output
- Single 3.3V or 5V power supply



Specifications

Parameter	Symbol	Min.	Typical	Max.	Unit	
Transmitter						
Data Rate (NRZ)	B	-	622	-	Mb/s	
Optical Output Power (avg.) (1) (3)						
TR13SM2-1L	P_o	-12	-	-6	dBm	
TR13SM2-2L	P_o	-6	-	0	dBm	
TR15SM2-2F	P_o	-3	-	2	dBm	
Extinction Ratio						
TR13SM2-1L		8.3	-	-	dB	
TR13SM2-2L		10	-	-	dB	
TR15SM2-2F		10	-	-	dB	
Optical Wavelength						
	λ	1260 1530	1310 1550	1360 1570	nm	
Spectral Width						
TR13SM2-1L	$\Delta\lambda$	-	1	4	nm	
TR13SM2-2L	$\Delta\lambda$	-	1	4	nm	
TR15SM2-2F	$\Delta\lambda$	-	0.1	1	nm	
Output Rise Time (10-90%)						
	t_r	-	0.5	0.8	ns	
Output Fall Time (10-90%)						
	t_f	-	0.5	0.8	ns	
Data Input (6)	DC Coupled	V_{IL} N_{IH}	$V_{CC}-1.810$ $V_{CC}-1.165$	- -	$V_{CC}-1.475$ $V_{CC}-0.880$	V V
	AC Coupled (Differential)	V_I	0.25	-	1.6	V
Tx Disable Input		V_{DIL} V_{DIH}	0 2	- -	0.8 V_{CC}	V V
Supply Voltage		V_{CC}	3.10 4.75	3.3 5.0	3.50 5.25	V V
Supply Current		I_{CC}	-	-	110	mA

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Receiver						
Data Rate (NRZ)	B	-	622	-	Mb/s	
Optical Input (avg.) Sensitivity (1) (5)	P_{IN}	-	-	-29	dBm	
Saturation	-	-3	0	-	dBm	
Optical Wavelength	λ	1100	-	1600	nm	
Output Rise Time (10-90%)	t_r	-	0.5	0.8	ns	
Output Fall Time (10-90%)	t_f	-	0.5	0.8	ns	
Data Output (6)	DC Coupled	V_{OL} V_{OH}	$V_{cc}-1.840$ $V_{cc}-1.045$	- -	$V_{cc}-1.62$ $V_{cc}-0.88$	V V
	AC Coupled (Differential)	V_I	0.6	-	1.8	V
Signal Detect Asserted (avg)	P_A	-	-	-29	dBm	
Signal Detect Deasserted (avg)	P_D	-38	-	-	dBm	
Hysteresis	-	-	2	-	dB	
Supply Voltage	V_{cc}	3.10	3.3	3.50	V	
		4.75	5.0	5.25	V	
Supply Current	I_{cc}	-	-	100	mA	

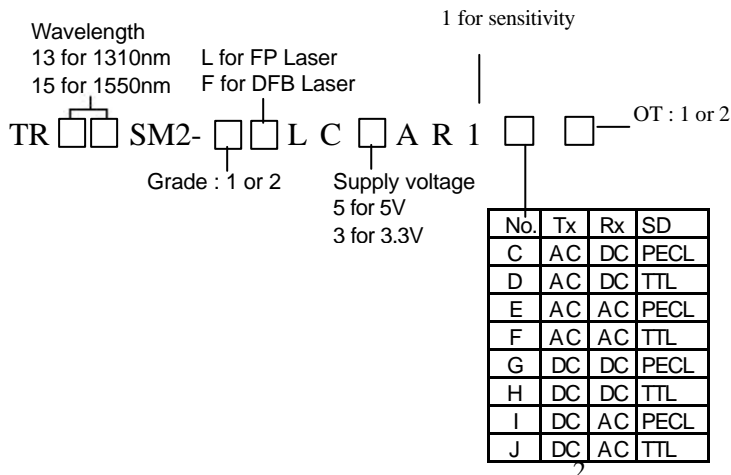
Note:

- (1) With 0.275 NA, 9/125 μ m fiber.
- (2) Driven with a differential signal.
- (3) Class 1 eye safe per FDA and IEC.
- (4) Eye mask diagram is compliant to ITU-T G.957 Eye Diagram.
- (5) $2^{23}-1$ PRBS, BER= 10^{-10} .
- (6) Compatible with PECL and LVPECL logic levels.
- (7) The transmitter output should not be viewed directly.

Absolute Maximum Ratings

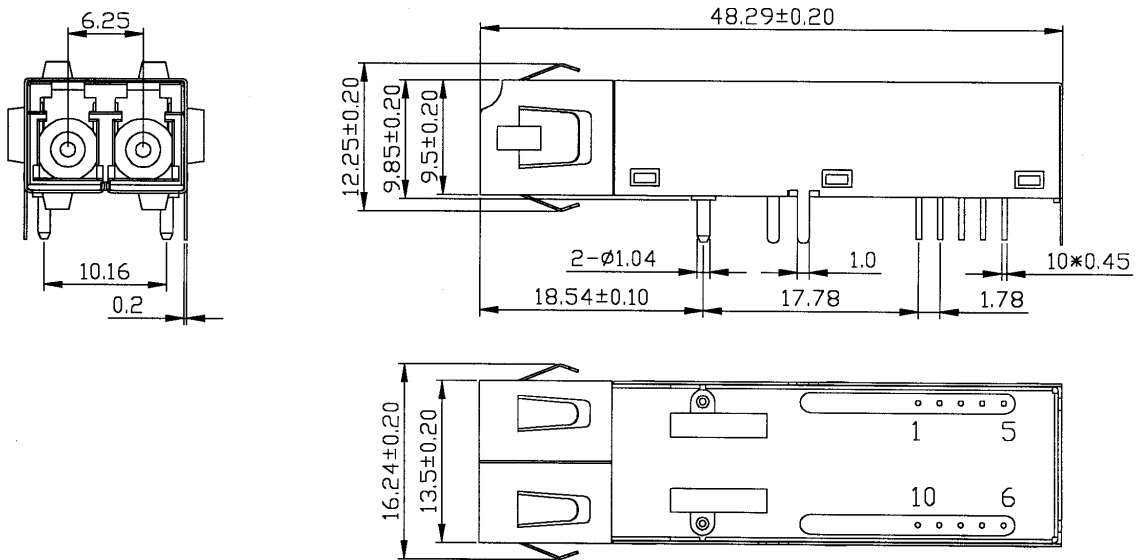
Parameter	Min.	Max.	Unit	
Operating Temperature	-1	0	$^{\circ}$ C	
	-2	-40	85	$^{\circ}$ C
Storage Temperature	-40	100	$^{\circ}$ C	
Lead Soldering Limits	-	240/10	$^{\circ}$ C /sec	
Supply Voltage	5V	-0.2	7	V
	3.3V	-0.2	4	V

Ordering Information



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Outline Drawing



Pin No.	PIN Name	
1	V_{ERR}	Rx Ground
2	V_{CCX}	Rx Power Supply
3	SD	Rx Signal Detect
4	\overline{RD}	Rx Data Out (Inverted)
5	RD	Rx Data Out
6	V_{CCT}	Vcc Power Supply
7	V_{ERR}	Tx Ground
8	TDis	Tx Disable
9	TD	Tx Data In
10	\overline{TD}	Tx Data In (Inverted)