

1.25Gbps Single Fiber Bi-Directional Optical Transceiver

Features

- Intermediate and long reach
- Industrial standard 1x9 pin footprint
- Single SC/ST/FC connector interface
- Receiver signal detect function
- Wide dynamic rang receiver with AGC
- PECL/LVPECL logic interface, DC or AC coupling
- Single supply 5V/3.3V
- Low power consumption



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Specifications

Parameter	Symbol	Min.	Typical	Max.	Unit	
Transmitter						
Data Rate (NRZ)	B	-	-	1.3	Gb/s	
Optical Output Power (avg.) (1) (3)	P_o	-	-	-	dBm	
-1	P_o	-15	-	-8	dBm	
-2	P_o	-8	-	-3	dBm	
-3	P_o	-3	-	0	dBm	
Extinction Ratio	-	9	-	-	dB	
Optical Wavelength FP LD	TR13R15	λ	1260	1310	1360	nm
	TR15R13					
Spectral Width	$\Delta\lambda$	-	1	4	nm	
Output Rise Time (10-90%)	t_r	-	0.4	0.5	ns	
Output Fall Time (10-90%)	t_f	-	0.4	0.5	ns	
Data Input (6)	V_{IL}	$V_{cc}-1.810$	-	$V_{cc}-1.475$	V	
	V_{IH}	$V_{cc}-1.165$	-	$V_{cc}-0.88$		
Supply Voltage	V_{cc}	4.75	5.0	5.25	V	
		3.10	3.3	3.50		
Supply Current	I_{cc}	-	-	110	mA	
Receiver						
Data Rate (NRZ)	B	-	-	1.3	Gb/s	
Optical Input (avg.) Sensitivity (1) (5)						
-1	S	-	-19	-17	dBm	
-2	S	-	-23	-20	dBm	
Saturation	-	-3	0	-	dBm	
Optical Wavelength	TR13R15	λ	1500	1550	1600	nm
	TR15R13					
Output Rise Time (10-90%)	t_r	-	-	0.4	ns	
Output Fall Time (10-90%)	t_f	-	-	0.4	ns	
Data Output (6)	V_{OL}	$V_{cc}-1.840$	-	$V_{cc}-1.62$	V	
	V_{OH}	$V_{cc}-1.045$	-	$V_{cc}-0.88$		
Signal Detect Asserted (avg)	P_A	-	-	-17	dBm	
Signal Detect Deasserted (avg)	P_D	-32	-	-	dBm	
Hysteresis	-	-	2	-	dB	
Supply Voltage	V_{cc}	4.75	5.0	5.25	V	
		3.10	3.3	3.50		
Supply Current	I_{cc}	-	-	100	mA	
Optical Return Loss		50	-	-	dB	
Optical Cross Talk		20	-	-	dB	

Note:

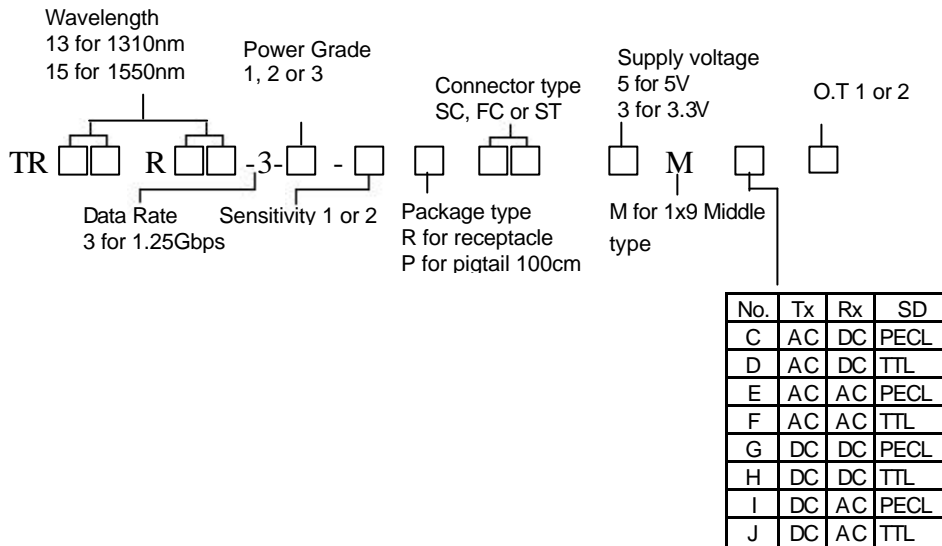
- (1) With 0.275 NA, 9/125 μ m fiber.
- (2) Driven with a differential signal.
- (3) Class 1 eye safe per FDA and IEC.
- (4) Eye mask diagram is compliant to IEEE802.3z Eye Diagram
- (5) 2⁷-1 PRBS, BER= 10⁻¹².
- (6) Compatible with 10K, 10KH and 100K Series LVPECL and PECL logic levels.
- (7) The transmitter output should not be viewed directly.

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Absolute Maximum Ratings

Parameter	Min.	Max.	Unit	
Operating Temperature				
-1	0	70	°C	
-2	-40	85	°C	
Storage Temperature	-40	100	°C	
Lead Soldering Limits	-	240/10	°C/sec	
Supply Voltage	5V	-0.2	7	V
	3.3V	-0.2	4	V

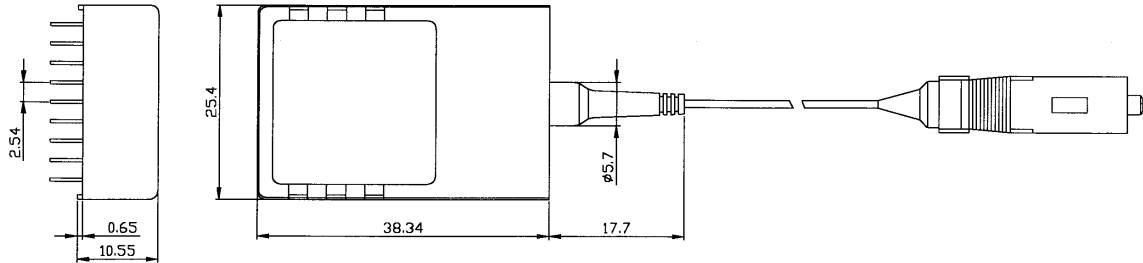
Ordering Information



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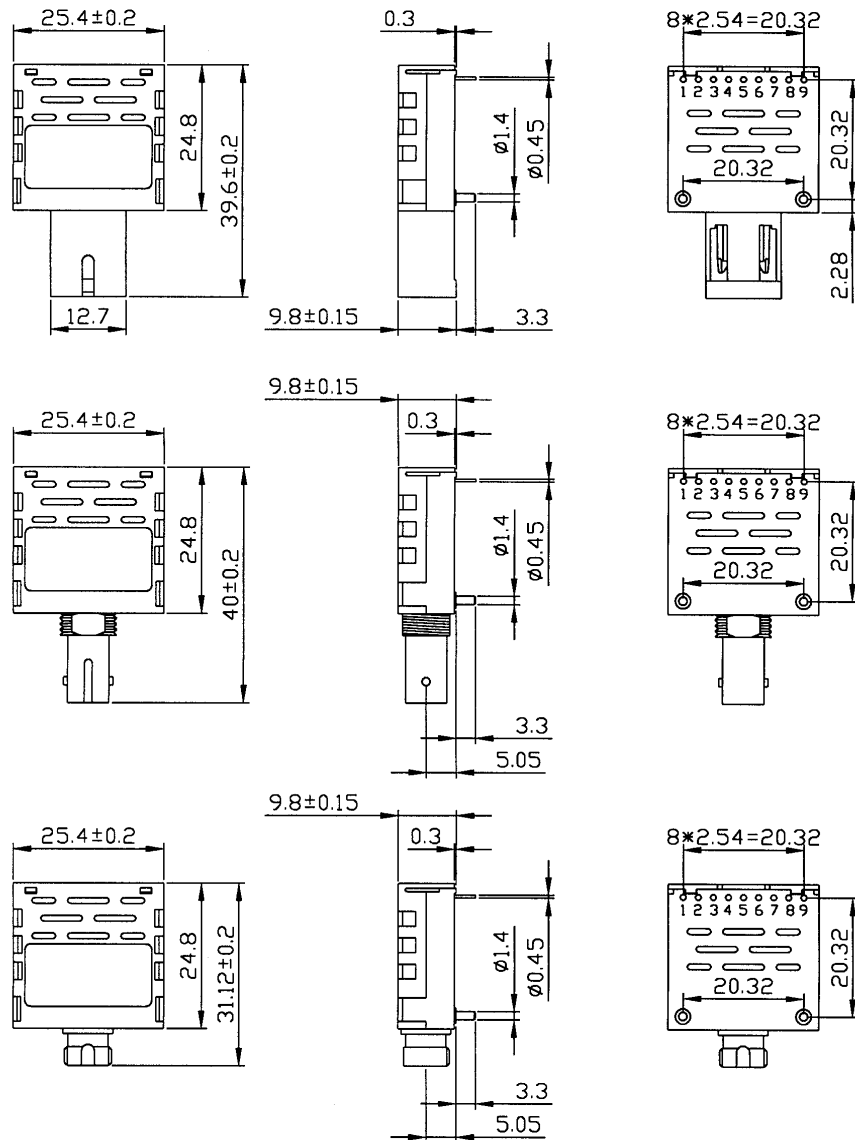
Outline Drawing

Pigtail



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Receptacle



Pin No.	PIN Name	
1	V_{EER}	Rx Ground
2	RD	Rx Data Out
3	\overline{RD}	Rx Data Out (Inverted)
4	SD	Rx Signal Detect
5	V_{CCR}	Rx Power Supply
6	V_{CCT}	V_{CC} Power Supply
7	\overline{TD}	Tx Data In (Inverted)
8	TD	Tx Data In
9	V_{EET}	Tx Ground

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