

B-15/13-1250-TDPM-Sxx-60



Features

- Coaxial single mode single fiber package with optional SC/FC/ST/MU connector
- Wavelength Tx 1550 nm/ Rx 1310nm
- Compliant with IEEE 802.3z Gigabit Ethernet
- Single +5V Power Supply
- PECL Differential Inputs and Outputs
- Wave Solderable and Aqueous washable
- Class 1 Laser Int. Safety Standad IEC 825 Compliant
- Uncooled laser diode with MQW structure
- Complies with Telcordia (Bellcore) GR-468-CORE
- Temperature Range: 0 to 70°C
- Optical Isolation >30 dB
- Cross Talk < -33 dB
- Optical Return Loss > 14dB

Absolute Maximum Rating

Parameter	Symbol	Min.	Max.	Unit	Note
Power Supply Voltage	V_{CC}	0	6	V	
Input Voltage		GND	V_{CC}	V	
Output Current	I_{out}	-	30	mA	
Soldering Temperature	-	-	260	°C	10 seconds on leads only
Operating Temperature	T_{opr}	0	70	°C	
Storage Temperature	T_{stg}	-40	85	°C	

Recommended Operating Condition

Parameter	Symbol	Min.	Typ.	Max.	Unit
Power Supply Voltage	V_{CC}	4.75	5	5.25	V
Operating Temperature	T_{opr}	0	-	70	°C
Data Rate	-	-	1250	-	Mbps

Transmitter Specifications, (0°C< T_{opr} <70°C, 4.75V< V_{CC} <5.25V)

Parameter	Symbol	Min	Typical	Max	Unit	Notes
Optical						
Optical Transmit Power	P_o	-10	-	-4	dBm	Output power is coupled into a 9/125 μ m single mode fiber
Output center Wavelength	λ	1500	1550	1600	nm	
Output Spectrum Width	$\Delta\lambda$	-	-	1	dB	-20dB width
Side Mode Suppression Ratio	Sr	30	35	1	dB	CW, $P_o=5mW$
Extinction Ratio	ER	9	-	-	dB	
Output Eye		Compliant with IEEE 802.3z				
Optical Rise Time	T_r	-	-	0.26	ns	20% to 80% Values
Optical Fall Time	T_f	-	-	0.26	ns	20% to 80% Values
Optical Isolation	-	30	-	-	dB	Tx:1550 nm/ Rx:1310 nm
Optical Return Loss	-	14	-	-	dB	
Relative Intensity Noise	RIN	-	-	-120	dB/Hz	
Total Jitter	TJ	-	-	0.27	ns	Measured with 27-1

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Transmitter Specifications, (0°C<T_{opr}<70°C, 4.75V<V_{CC}<5.25V)

Parameter	Symbol	Min	Typical	Max	Unit	Notes
Electrical						
Power Supply Current	I _{CC}	-	-	160	mA	Maximum current is specified at V _{CC} = Maximum @ maximum temperature
Data Input Current-Low	I _{IL}	-350	-	-	μA	
Data Input Current-High	I _{IH}	-	-	350	μA	
Differential Input Voltage	V _{IH} -V _{IL}	300	-	-	mV	
Data Input Voltage-Low	V _{IL} -V _{CC}	-2.0	-	-1.58	V	These inputs are compatible with 10K, 10KH and 100K ECL and PECL inputs
Data Input Voltage-High	V _{IH} -V _{CC}	-1.1	-	-0.74	V	

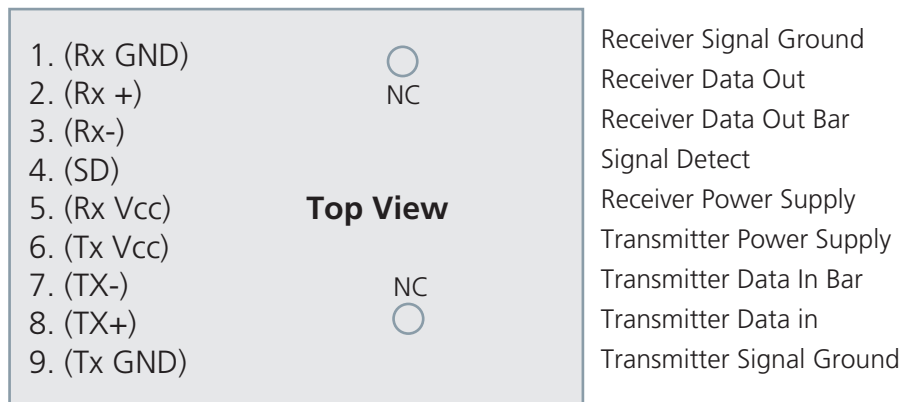
Receiver Specifications, (0°C<T_{opr}<70°C, 4.75V<V_{CC}<5.25V)

Parameter	Symbol	Min	Typical	Max	Unit	Notes
Optical						
Sensitivity	-	-	-	-22	dBm	Measured with 2 ⁷ -1 PRBS, BER=10 ⁻¹²
Maximum Input Power	P _{in}	-3	-	-	dBm	
Signal Detect-Asserted	P _a	-	-	-22	dBm	Measured on transition: low to high
Signal Detect-Deasserted	P _d	-35	-	-	dBm	Measured on transition: high to low
Signal Detect-Hysteresis		-	3.0	-	dB	
Cross Talk	-	-	-	-33	dB	
Wavelength of Operation		1260	-	1360	nm	

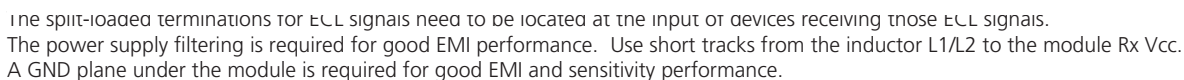
Receiver Specifications, (0°C<T_{opr}<70°C, 4.75V<V_{CC}<5.25V)

Parameter	Symbol	Min	Typical	Max	Unit	Note
Electrical						
Power Supply Current	I _{CC}	-	-	100	mA	The current excludes the output load current
Data Output Voltage-Low	V _{OL} -V _{CC}	-1.9	-	-1.6	V	These outputs are compatible with 10K, 10KH and 100KECL and LVPECL outputs
Data Output Voltage-High	V _{OH} -V _{CC}	-1.1	-	-0.8	V	
Signal Detect Output Voltage-Low	V _{SDL} -V _{CC}	-1.9	-	-1.6	V	
Signal Detect Output Voltage-High	V _{SDH} -V _{CC}	-1.1	-	-0.8	V	

Connection Diagram

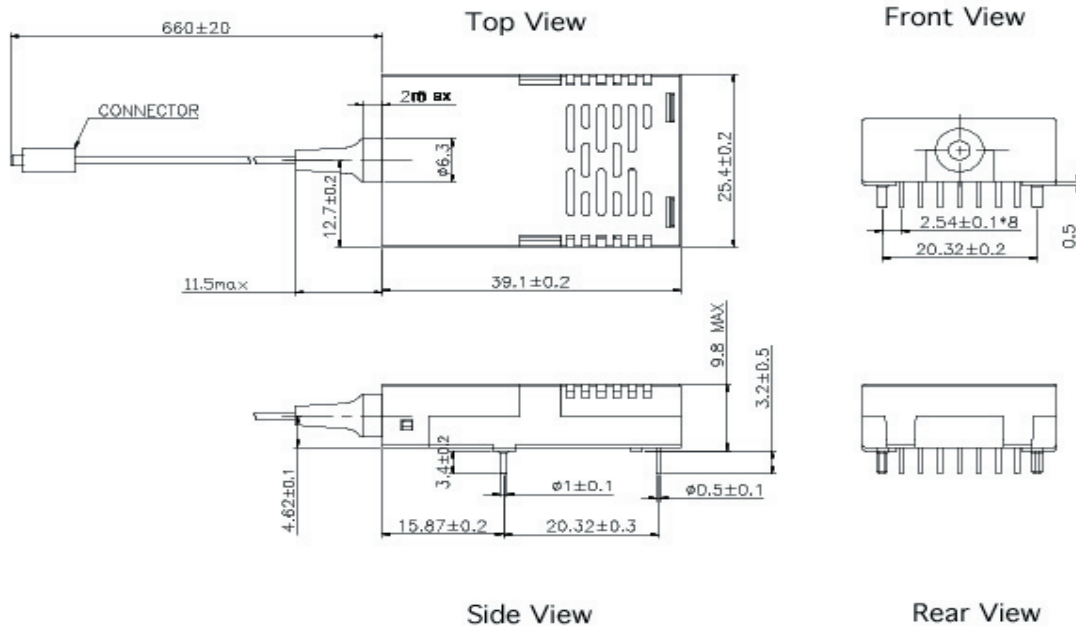


PIN	Symbol	Notes
1	RxGND	Directly connect this pin to the receiver ground plane
2	RD+	See recommended circuit schematic
3	RD-	See recommended circuit schematic
4	SD	Active high on this indicates a received optical signal
5	RxVcc	+5V dc power for the receiver section
6	TxVcc	+5V dc power for the transmitter section
7	TD-	See recommended circuit schematic
8	TD+	See recommended circuit schematic
9	TxGND	Directly connect this pin to the transmitter ground plane



Package Diagram

Diplexer Transceiver Assembly



B-15/13-1250-TDPM-Sxx-60

Ordering Information

B - 15/13 -1250 - TDPM - S xx-60

- Wavelength
Tx Wavelength=1550nm
Rx Wavelength = 1310nm

- Communication protocol
(1250 Mbps)

- +5V Transceiver

- Single mode fiber

- Connector options
SC/FC/ST/MU

- Fiber Length 60cm

Warnings

Handling Precautions: This device is susceptible to damage as a result of electrostatic discharge (ESD). A static free environment is highly recommended. Follow guidelines according to proper ESD procedures.

Laser Safety: Radiation emitted by laser devices can be dangerous to human eyes. Avoid eye exposure to direct or indirect radiation.

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