

MRV Technologies, Inc.

**GIGABIT ETHERNET
SINGLEMODE
TRANSCEIVER – 5HD9D
DC-COUPLED
Wide Temperature**

THE SOURCE FOR YOUR SOURCE

FEATURES

- 1300 /1550nm Wavelength
- For Singlemode Applications
- Data rate to 1.25 Gb/s

- Wide Temperature Operation
- Single Power Supply
- Available with SC/ST Connector

LASER TRANSMITTER CHARACTERISTICS (T=-20°C TO +85°C)

Parameter	Symbol	Minimum	Typical	Maximum	Unit
Spectral Width F.P	$\Delta\lambda$ (RMS)			4.0	nm
Spectral Width DFB	$\Delta\lambda$ (RMS)			0.2	nm
Output Power	P_0	SEE CHART BELOW			
Extinction Ratio		10			dB
Data Rate				1250	Mb/s
Supply Voltage	V _{cc}	4.75	5.0	5.25	V
Supply Current	I _{cc}			140	mA
Power Dissipation	P			700	mW
Input High Voltage	V _{IHS}	V _{cc} -1.16		V _{cc} -0.89	V
Input Low Voltage	V _{ILS}	V _{cc} -1.82		V _{cc} -1.48	V
Rise Time (10%-90%)	Tr			0.5	ns
Fall Time (90%-10%)	Tf			0.5	ns
Random Jitter				0.1	ns(p-p)
Duty Cycle Distortion				0.1	ns(p-p)
Data Dependent Jitter				0.1	ns(p-p)
EyeDiagram	IEEE-802.3 Compliant				

LASER TRANSMITTER AVERAGE OUTPUT POWER (T= -20°C to +85°C,50% DUTY CYCLE)

Part Number 1300 nm Singlemode	Min	Max	Unit	Min	Max	Unit	λ (nm)	Dist. (KM)
-001*(1.3um FP)	0.1	.05	mW	-10.0	-3.0	dBm	1310±10	6
-003(1.3um FP)	0.3	1.0	mW	-5.0	0.0	dBm	1305±3	10
-D005(1.3um DFB)	0.5	1.0	mW	-3.0	0.0	dBm	1310±10	20
-D5003(1.55um DFB)	0.3	1.0	mW	-5.0	0.0	dBm	1550±10	50

NOTE: * Meets 802.3 Giga bit Ethernet spec.

ABSOLUTE MAXIMUM RATINGS

PARAMETER	SYMBOL	RATING	UNIT
Supply Voltage	V _{cc}	5.50	VOLTS
Operating Temp(Case)		-20 - 85	°C
Storage Temp		-40 - 85	°C
Lead Soldering Temp/Time		240/10	°C/S

FEATURES

- 1300/1550 nm Wavelength
- For Singlemode
- Data rate 1.25 Gb/S

- Wide Temperature Operation
- Single Power Supply
- Available with SC/ST Connector

RECEIVER CHARACTERISTICS (T=-20°C TO +85°C)

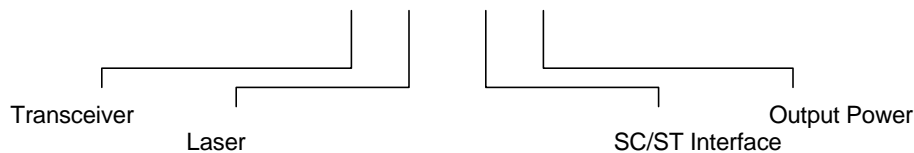
Parameter	Symbol	Minimum	Typical	Maximum	Unit
Wavelength	λ	1200		1550	nm
Average Optical Sensitivity		-24.0			dBm
Average max Input Power				-3	dBm
Data Rate				1250	Mb/s
Supply Voltage	V _{CC}	4.75	5.0	5.25	V
Supply Current	I _{CC}		110	125	mA
Power Dissipation	P		550	630	mW
Output High Voltage	V _{OH}	V _{CC} -1.03		V _{CC} -0.89	V
Output Low Voltage	V _{OL}	V _{CC} -1.82		V _{CC} -1.63	V
Signal Detect Load		5			K Ω
Rise/Fall Times	TrTf			0.5	ns
Signal Detect Threshold-Assertion				-22.0	dBm
Signal Detect Threshold -Deassertion		-31.0			dBm
Data dependent Jitter				0.1	ns
Hysteresis		2.0			dB
Duty Cycle Distortion				0.1	ns(p-p)
Signal Detect Timing-Assertion				100	μ s
Signal Detect Timing-Deassertion				100	μ s

ABSOLUTE MAXIMUM RATINGS

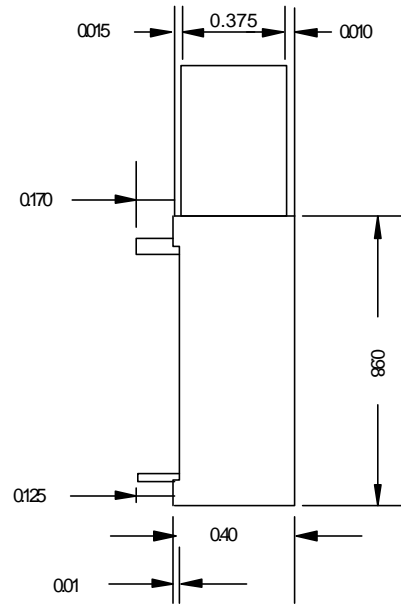
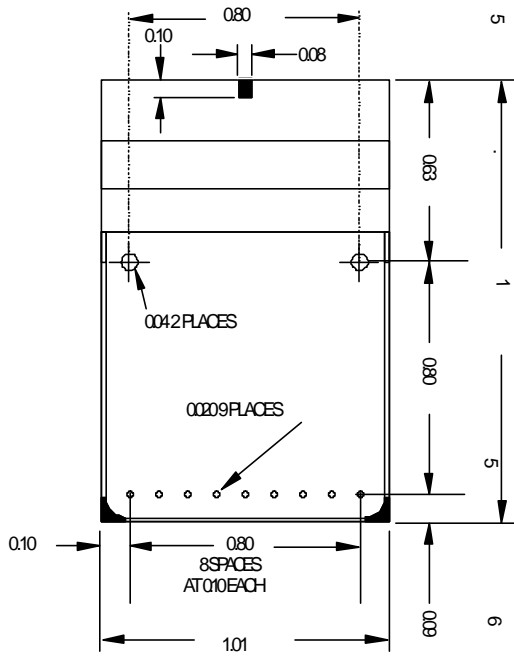
PARAMETER	SYMBOL	RATING	UNIT
Supply Voltage	V _{CC}	5.25	VOLTS
Output Current	I _O	50	mA
Operating Temp(case)		-20 - 85	°C
Storage Temp		-40 - 85	°C
Lead Soldering Temp/Time		240/10	°C

Ordering Information

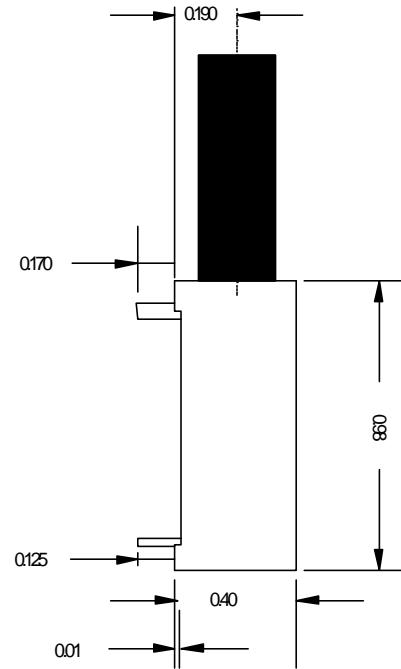
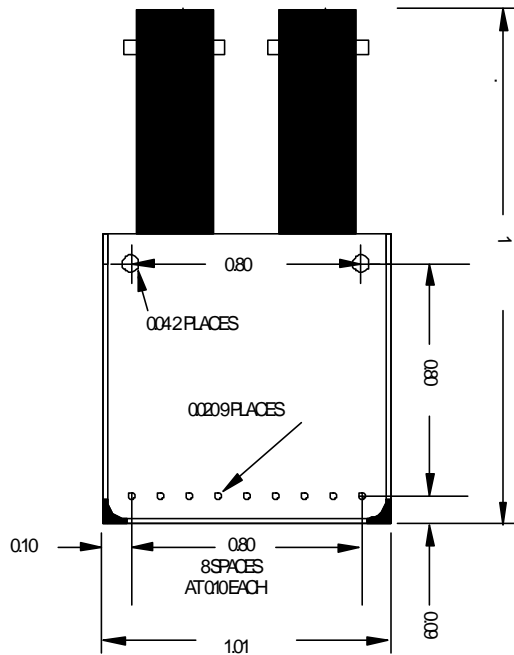
MR TR L xx XXXX – 5HD9D



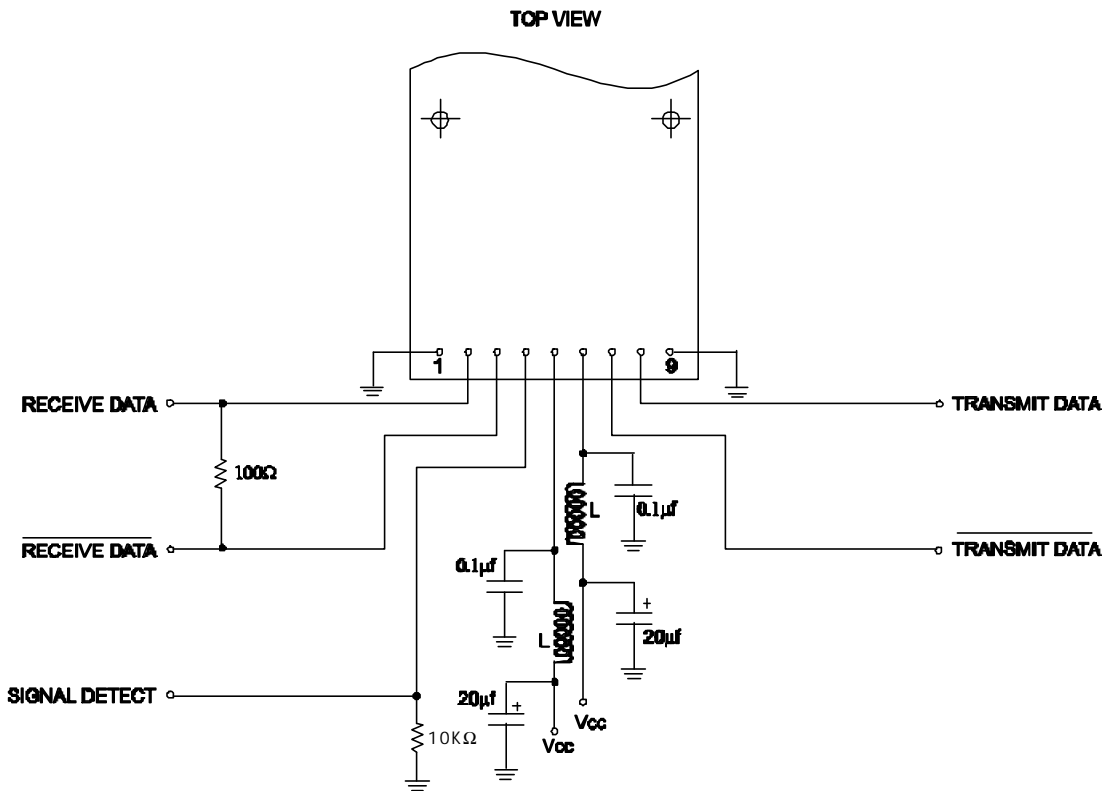
Outline Drawing



Outline Drawing - Bottom view



Pinout Diagram



1. L IS A FERRITE BEAD; FAIR-RITE PRODUCTS CORP., PART NUMBER 2743002111 OR EQUIVALENT
2. CLASS 1 DEVICE. THIS PRODUCT CONFORMS TO THE APPLICABLE REQUIREMENTS OF 21 CFR1040 AT THE DATE OF MANUFACTURE (CDRH).THIS PRODUCTS ALSO MEETS THE REQUIREMENTS OF EN 60950 AND EN 60825 (TUV). APPLICABLE TO DEVICES WITH MAXIMUM OUTPUT OF 1mW.
3. PIN 2 AND 3 ARE INTERNALLY TERMINATED THROUGH 390 OHM RESISTORS. IF THE LOAD IMPEDANCE IS NOT 50 OHMS USE THE TERMINATION AS SHOWN. THE OUTPUTS AT THESE PINS ARE DC-COUPLED.
4. TRANSMIT PINS 7 AND 8 ARE AC – COUPLED AND TERMINATED THROUGH 50 OHM RESISTORS.