



**ATM  
SINGLEMODE  
TRANSCEIVER - 4LD9**

**THE SOURCE FOR YOUR SOURCE**

**FEATURES**

- 1300/1550 nm Wavelength
- For Singlemode Applications
- Data rate 622 Mb/s
- Low power consumption
- Single Power Supply
- Available with SC or ST Connector

**LASER TRANSMITTER CHARACTERISTICS ( T= 25°C)**

Parameter	Symbol	Minimum	Typical	Maximum	Unit
Wavelength <sup>1</sup>	$\lambda$	1293	1310	1334	nm
Spectral Width @ 622 Mb/s <sup>1</sup>	$\Delta\lambda$ (RMS)			4	nm
Wavelength <sup>2</sup>	$\lambda$	1300	1310	1325	nm
Spectral Width @ 622 Mb/s <sup>2</sup>	$\Delta\lambda$ (RMS)			2	nm
Wavelength <sup>3</sup>	$\lambda$	1280	1310	1335	nm
Spectral Width @ 622 Mb/s <sup>3</sup>	$\Delta\lambda$ (RMS)			1	nm
Wavelength <sup>4</sup>	$\lambda$	1480	1550	1580	nm
Spectral Width @ 622 Mb/s <sup>4</sup>	$\Delta\lambda$ (RMS)			1	nm
Output Power	P <sub>0</sub>	SEE CHART BELOW			
Extinction Ratio		10			dB
Data Rate			622		Mb/s
Supply Voltage	V <sub>cc</sub>	4.75	5.0	5.25	V
Supply Current	I <sub>cc</sub>			140	mA
Power Dissipation	P			700	mW
Input High Voltage	V <sub>IHS</sub>	V <sub>cc</sub> -1.16		V <sub>cc</sub> -0.89	V
Input Low Voltage	V <sub>ILS</sub>	V <sub>cc</sub> -1.82		V <sub>cc</sub> -1.48	V
Rise Time (10%-90%)	T <sub>r</sub>			0.7	ns
Fall Time (90%-10%)	T <sub>f</sub>			0.7	ns
Random Jitter				0.1	ns(p-p)
Data Dependent Jitter				0.2	ns(p-p)
EyeDiagram	Bellcore GR253, Sonet OC-12				

- NOTES: 1) Intermediate Reach 1300nm (MLM) FP Laser,  
 2) Long Reach 1300nm (MLM) FP Laser  
 3) Long Reach 1300nm with (SLM)DFB Laser  
 4) Long Reach 1550nm with (SLM)DFB Laser

**LASER TRANSMITTER AVERAGE OUTPUT POWER ( T= -0°C to 70°C, 50% DUTY CYCLE )**

Part Number	Min	Typ	Max	Unit	Min	Typ	Max	Unit
-0003	.03	.05	.16	mW	-15.0	-13.0	-8.0	dBm
005	0.5	0.7	1.6	mW	-3.0	-1.6	2.0	dBm
-D005	0.5	0.7	1.6	mW	-3.0	-1.6	2.0	dBm
-D5005	0.5	0.7	1.6	mW	-3.0	-1.6	2.0	dBm

**ABSOLUTE MAXIMUM RATINGS**

PARAMETER	SYMBOL	RATING	UNIT
Supply Voltage	V <sub>cc</sub>	5.50	VOLTS
Operating Temp(Case)		0 - 70	°C
Storage Temp		-40 - 85	°C
Lead Soldering Temp/Time		240/6	°C/S

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- 1300/1550 nm Wavelength
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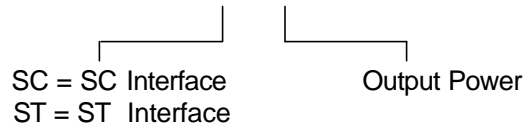
**RECEIVER CHARACTERISTICS ( T= 25°C )**

Parameter	Symbol	Minimum	Typical	Maximum	Unit
Wavelength	$\lambda$	1200		1550	nm
Average Optical Sensitivity		-28	-30		dBm
Average max Input Power				-5	dBm
Data Rate		100		700	Mb/s
Supply Voltage	V <sub>CC</sub>	4.75	5.0	5.25	V
Supply Current	I <sub>CC</sub>		110	150	mA
Power Dissipation	P		550	790	mW
Output High Voltage	V <sub>OH</sub>	V <sub>CC</sub> -1.03		V <sub>CC</sub> -0.80	V
Output Low Voltage	V <sub>OL</sub>	V <sub>CC</sub> -1.82		V <sub>CC</sub> -1.63	V
Rise/Fall Times	TrTf			0.7	ns
Signal Detect Threshold-Assertion				-28	dBm
Signal Detect Threshold -Deassertion		-39			dBm
Data dependent Jitter				0.20	ns
Hysteresis		1.0			dB
Signal Detect Timing-Assertion				100	μs
Signal Detect Timing-Deassertion				350	μs

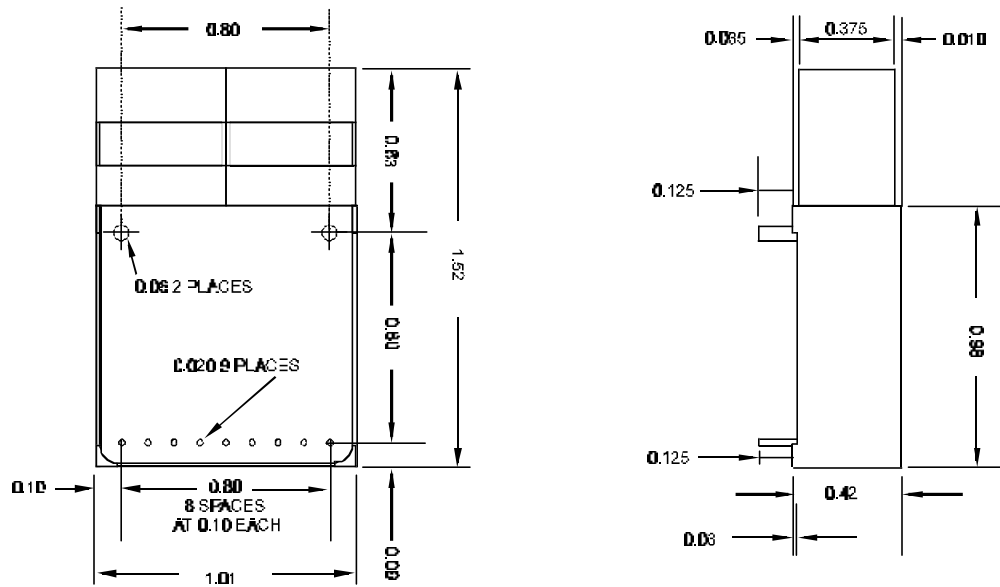
**ABSOLUTE MAXIMUM RATINGS**

PARAMETER	SYMBOL	RATING	UNIT
Supply Voltage	V <sub>CC</sub>	5.25	VOLTS
Output Current	I <sub>O</sub>	50	mA
Operating Temp(case)		0 - 70	°C
Storage Temp		-40 - 85	°C
Lead Soldering Temp/Time		240/6	°C

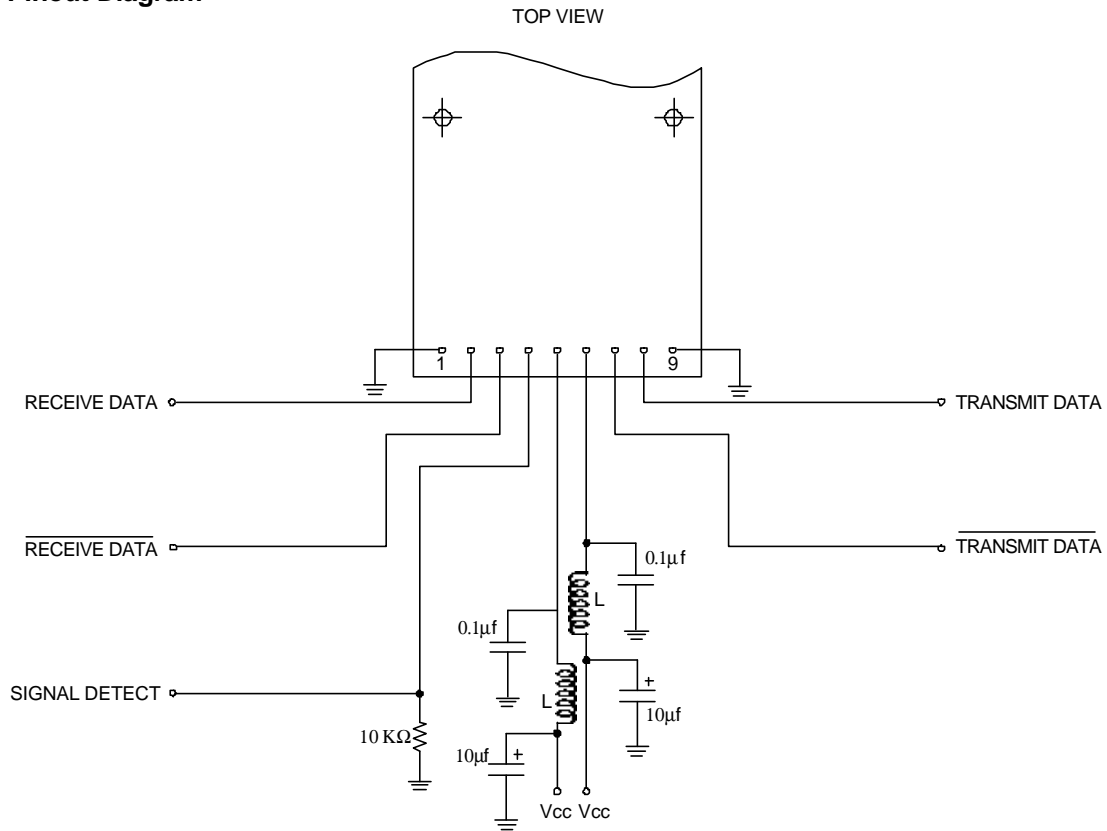
Ordering Information: MRTRL XX XXX – 4LD9



### Outline Drawing



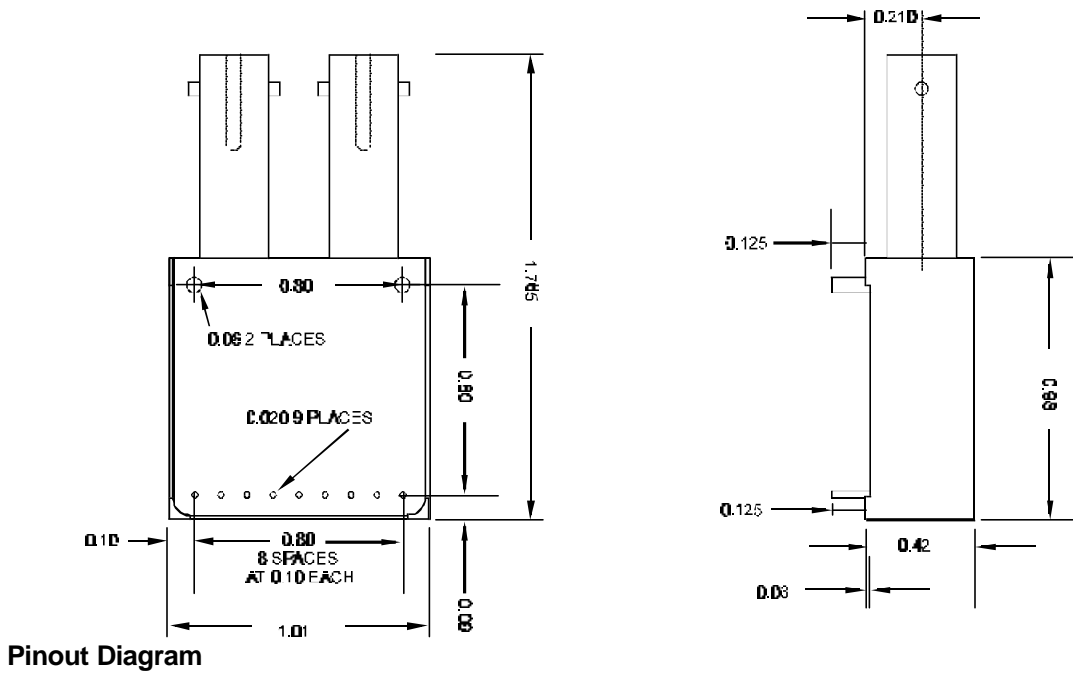
### Pinout Diagram



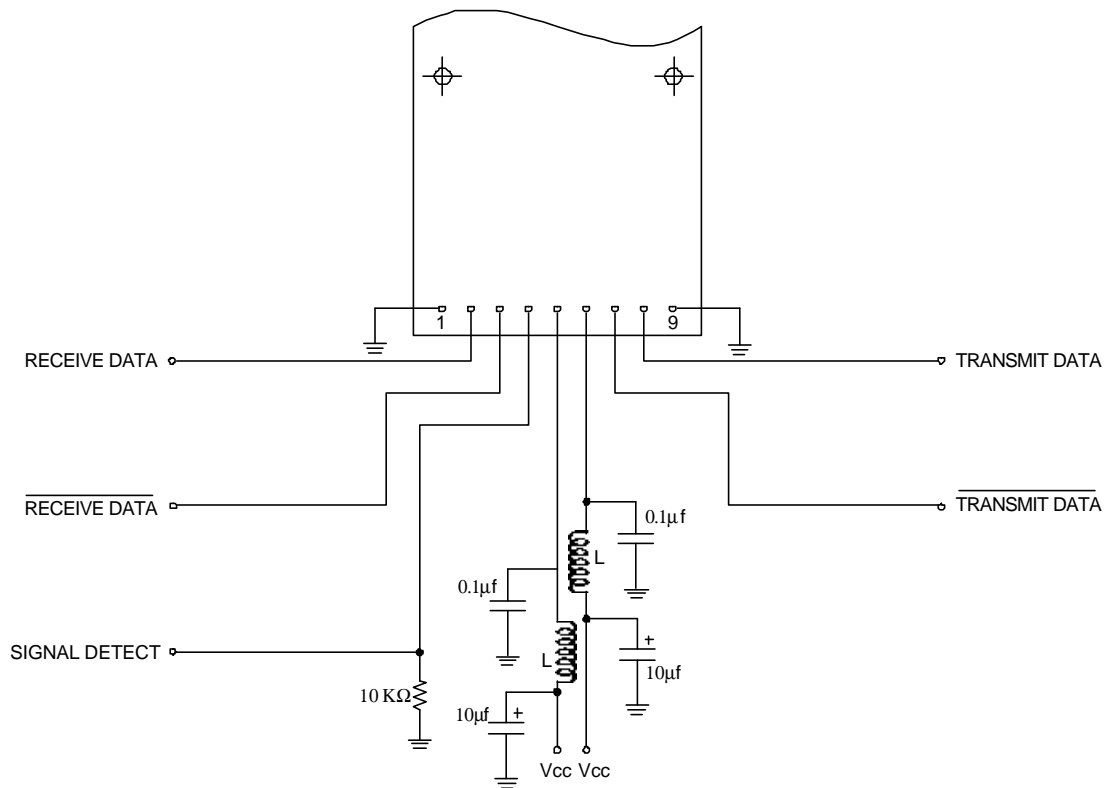
### NOTES:

1. L IS A FERRITE BEAD; FAIR-RITE PRODUCTS CORP., PART NUMBER 2743002111 OR EQUIVALENT 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)

### Outline Drawing - Bottom view



TOP VIEW



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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 PRODUCTS WITH MAXIMUM OUTPUT POWER OF 1mW.