



**ATM
SINGLEMODE
TRANSCEIVER – 4HD18C**
Wide Temperature

THE SOURCE FOR YOUR SOURCE

FEATURES

- 1300 nm Wavelength
- For Singlemode Applications
- Data rate 622 Mb/s
- Clock Recovery Function
- Wide Temperature Operation
- Single Power Supply
- Available with SC or ST Connector
- 18 Pin Footprint

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

Parameter	Symbol	Minimum	Typical	Maximum	Unit
Wavelength ¹	λ	1293	1310	1334	nm
Spectral Width @ 622 Mb/s ¹	$\Delta\lambda(\text{RMS})$			4	nm
Wavelength ²	λ	1300	1310	1325	nm
Spectral Width @ 622 Mb/s ²	$\Delta\lambda(\text{RMS})$			2	nm
Wavelength ³	λ	1280	1310	1335	nm
Spectral Width @ 622 Mb/s ³	$\Delta\lambda(\text{RMS})$			1	nm
Wavelength ⁴	λ	1480	1550	1580	nm
Spectral Width @ 622 Mb/s ⁴	$\Delta\lambda(\text{RMS})$			1	nm
Output Power	P ₀	SEE CHART BELOW			
Extinction Ratio		10			dB
Data Rate			622		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%)	T _r			0.7	ns
Fall Time (90%-10%)	T _f			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= -20°C to 85°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 _{cc}	5.50	VOLTS
Operating Temp(Case)		-20 - 85	°C
Storage Temp		-40 - 85	°C
Lead Soldering Temp/Time		240/10	°C/S

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- 1300 nm Wavelength
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RECEIVER CHARACTERISTICS (T= -20°C TO +85°C)

Parameter	Symbol	Minimum	Typical	Maximum	Unit
Wavelength	λ	1200		1550	nm
Average Optical Sensitivity		-28	-30		dBm
Average max Input Power				-3	dBm
Data Rate			622		Mb/s
Supply Voltage	V _{CC}	4.75	5.0	5.25	V
Supply Current	I _{CC}		150	200	mA
Power Dissipation	P		750	1050	mW
Data/CLK Output High Voltage	V _{OH}	V _{CC} -1.03		V _{CC} -0.80	V
Data/CLK Output Low Voltage	V _{OL}	V _{CC} -1.82		V _{CC} -1.63	V
Clock Jitter		Per Bellcore GR-253			
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

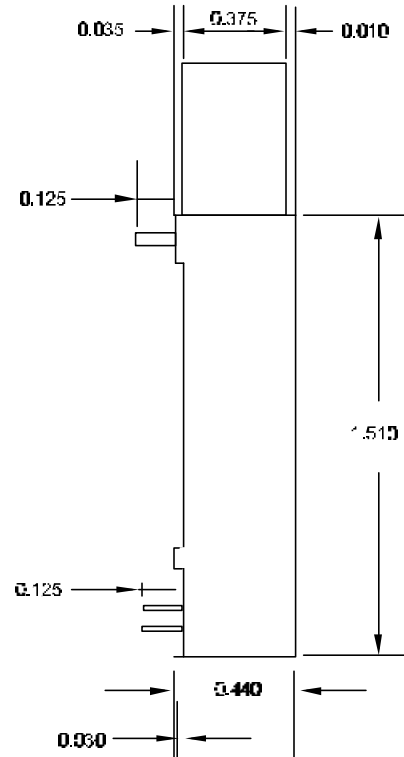
ABSOLUTE MAXIMUM RATINGS

PARAMETER	SYMBOL	RATING	UNIT
Supply Voltage	V _{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: MRTRL XX XXX – 4HD18C

SC = SC Interface
 ST = ST Interface

Output Power

[illegible]

Pin	Function	Pin	Function
1	N/C	10	GND
2	N/C	11	TRANSMIT DATA
3	CLOCK	12	TRANSMIT DATA
4	CLOCK	13	TX Vcc
5	LD BIAS MONITOR(-)	14	RX Vcc
6	LD BIAS MONITOR(+)	15	SIGNAL DETECT
7	TX DISABLE	16	RECEIVE DATA
8	TX ALARM	17	RECEIVE DATA
9	BACK FACE MONITOR	18	GND

0.675

0.80

0.062 PLACES

0.020 18 PLACES

0.120

9

0.100

0.80

8 SPACES
AT 0.10 EACH

1.600

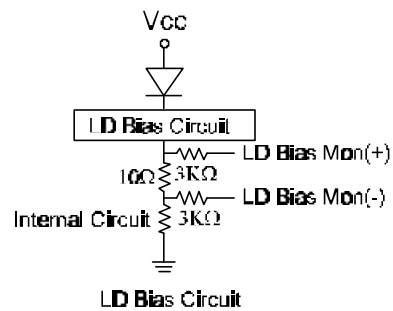
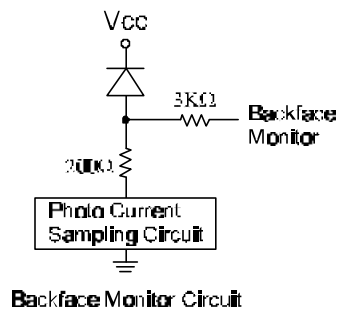
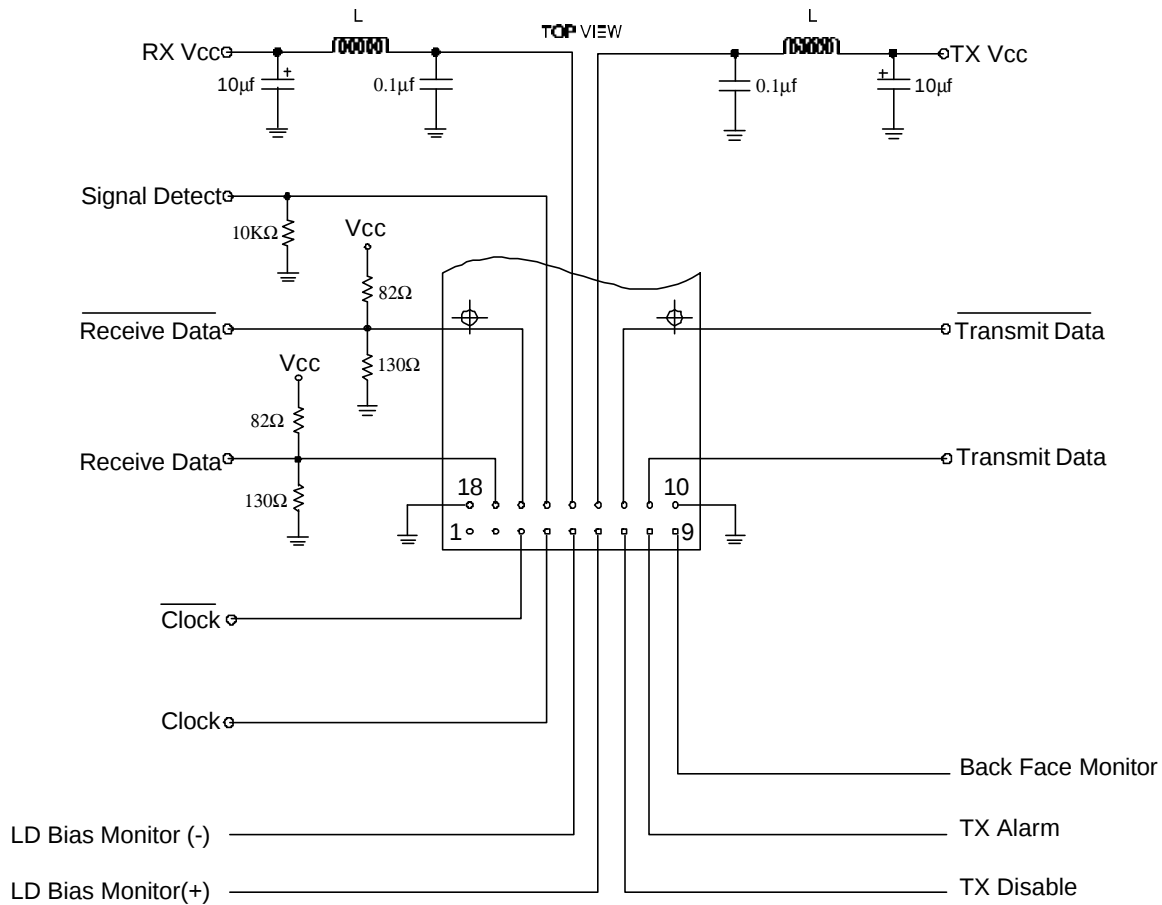
0.100

18

1



Pinout Diagram



NOTES:

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 POWER OF 1mW.