

155Mbps 1X9 SC Duplex Receptacle Transceiver Module for ATM, SONET OC-3/SDH STM-1, Fast Ethernet

OPT-155A2H1

Feature

- Multisourced 1x9 package style with Duplex SC receptacle
- Full compliant with all major standard
- PECL Differential Inputs and Outputs
- Wave Solderable and Aqueous Washable
- For distance of up to 2km
- Single +3.3 V power supply

Applications

- SONET/SDH Equipment Interconnect
- 100Base Fast Ethernet
- 155Mbps ATM

Absolute Maximum Ratings

Parameter	Symbol	Min.	Typ.	Max.	Unit	Reference
Storage temperature	T _s	-40		85	°C	
Lead soldering temperature	T _{SOLD}			260	°C	
Lead soldering time	t _{SOLD}			10	sec.	
Supply voltage	V _{cc}	0		6	V	

Recommended Operating Conditions:

Parameter	Symbol	Min.	Typ.	Max.	Unit	Reference
Ambient Operating Temperature	T _A	0		70	°C	
Supply voltage	V _{cc}	3.135	3.3	3.465	V	
Transmitter Data input voltage-Low	V _{IL} - V _{CC}	-1.810		-1.475	V	
Transmitter Data input voltage-High	V _{IH} - V _{CC}	-1.165		-0.880	V	
Transmitter Differential Input Voltage	V _D	0.3		1.6	V	
Data Output Load	R _{DL}		50		Ω	

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Transmitter Performance Specifications:

Parameter	Symbol	Min.	Typ.	Max.	Unit	Reference
Power supply voltage	V _{CC}	3.135	3.3	3.465	V	
Supply current	I _{CC}			200	mA	
Output optical power (avg.)	P _O	-20		-14	dBm	Note (1)
Optical extinction ratio		9			dB	Note (1)
Center wavelength	λ c		1310		nm	
Spectral width	Δ λ			200	nm	
Optical risetime	t _r	0.6		3.0	ns	Note (2)
Optical falltime	t _f	0.6		3.0	ns	Note (2)
Duty Cycle Distortion	DCD			0.6	ns	
Jitter				1.0	ns	

Note (1). Measured at the end of 5 meters of 62.5/125 um Graded index fiber using 155Mbps, PRBS 2²³-1 signal at the beginning of life

Note (2). These are 10%~90% values

Receiver Performance Specifications:

Parameter	Symbol	Min.	Typ.	Max.	Unit	Reference
Power supply voltage	V _{CC}	3.135	3.3	3.465	V	
Supply current	I _{CC}			100	mA	
Data output voltage-Low	V _{OL} - V _{CC}	-1.85		-1.47	V _{CC}	
Data output voltage-High	V _{OH} - V _{CC}	-1.16		-0.88	V _{CC}	
Optical input sensitivity (avg.)	P _{IN}			-31	dBm	Note (1)
Optical input saturation (avg.)	P _{SAT}	-14			dBm	Note (1)
Optical wavelength	λ		1310		nm	
Output risetime	t _r	0.35		2.2	ns	Note (2)
Output falltime	t _f	0.35		2.2	ns	Note (2)
Jitter				1.0	ns	
Signal detect- Assert	P _A			-33	dBm	
Signal detect- Deassert	P _D	-48			dBm	
Signal detect Hysteresis	P _A -P _D	0.5			dB	

Note (1). With BER better than or equal 1x10⁻¹⁰, measured in the center of the eye opening with 2²³-1 PRBS at 155Mbps

Note (2). These are 20%~80% values

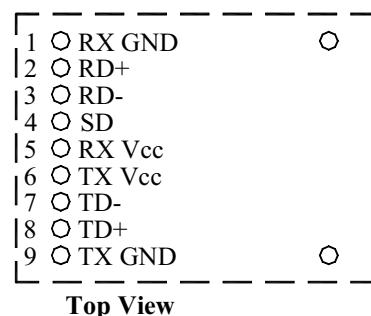
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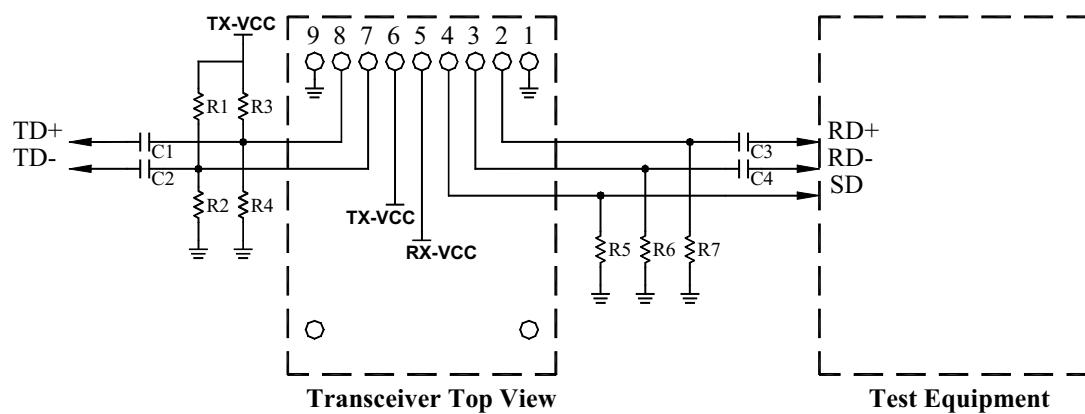
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Connection Diagram

Receiver Signal Ground	1 O RX GND
Receiver Data Out	2 O RD+
Receiver Data Out Bar	3 O RD-
Receiver Signal Detect	4 O SD
Receiver Power Supply	5 O RX Vcc
Transmitter Power Supply	6 O TX Vcc
Transmitter Data In Bar	7 O TD-
Transmitter Data In	8 O TD+
Transmitter Signal Ground	9 O TX GND

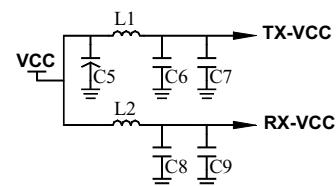


Recommended Circuit Schematic



Note:

$R_1=R_3=82\ \Omega$
 $R_2=R_4=130\ \Omega$
 $R_5=270\ \Omega$
 $R_6=R_7=150\ \Omega$
 $C_1=C_2=C_3=C_4=C_6=C_8=100\ nF$
 $C_5=100\ \mu F$
 $C_7=C_9=10\ \mu F$
 $L_1=L_2=15\ \mu H$ or ferrite inductor

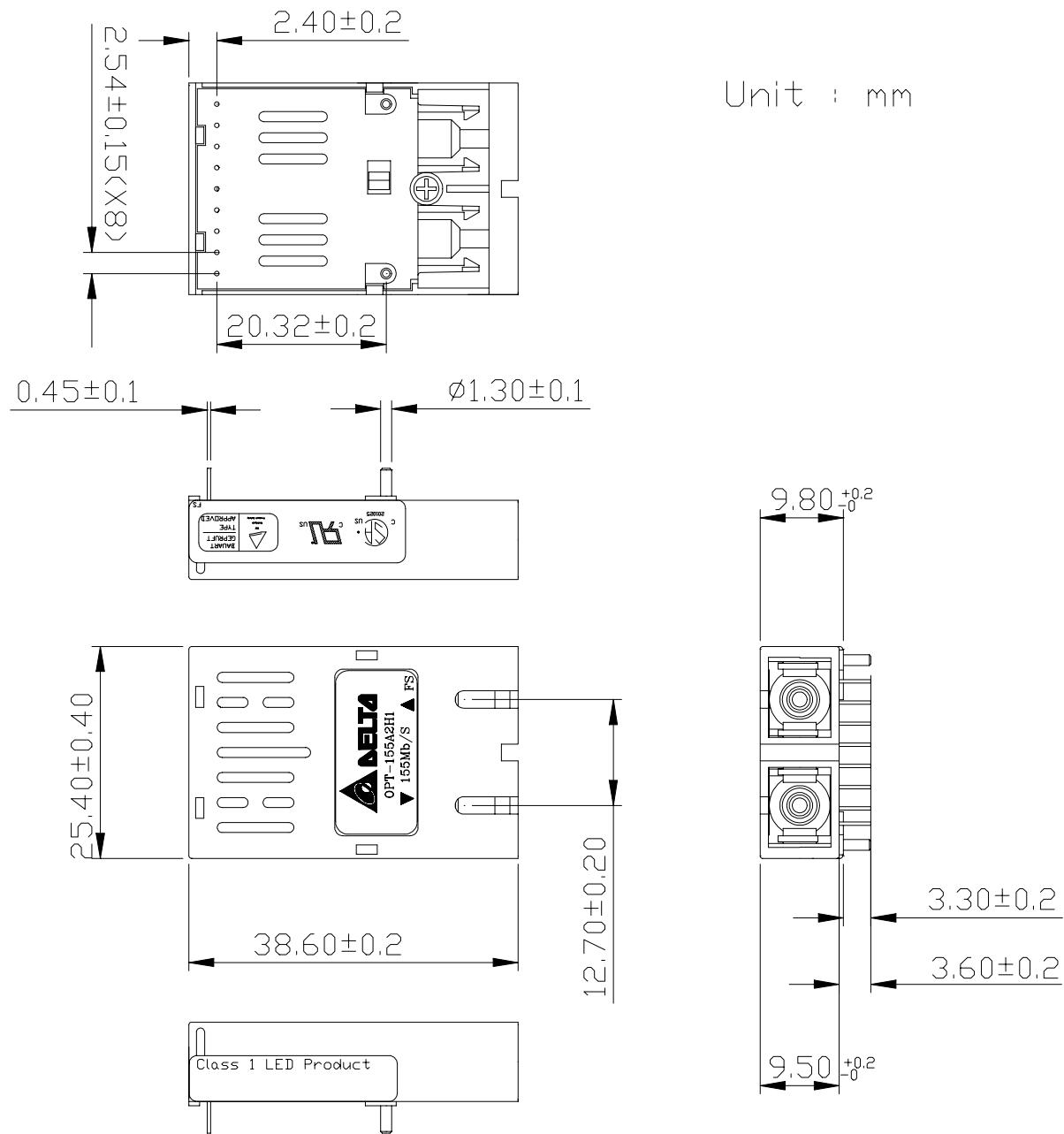


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Mechanical Dimensions



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**155Mbps 1X9 SC Duplex Receptacle Transceiver Module for ATM,
SONET OC-3/SDH STM-1, Fast Ethernet**

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Test Item	Reference	Qty'	Evaluation
(#1) Electromagnetic Interference EMC	FCC Class B EN 55022 Class B CISPR 22	5	
(#2) Immunity : Radio Frequency Electromagnetic Field	EN 61000-4-3 IEC 1000-4-3	5	
(#3) Immunity : Electrostatic Discharge to the Duplex SC Receptacle	EN 61000-4-2 IEC 1000-4-2 IEC 801.2	5	(1) Satisfied with electrical characteristics of product spec. (2) No physical damage
(#4) Electrostatic Discharge to the Electrical Pins	MIL-STD-883C Method 3015.4 EIAJ#1988.3.2B Version 2, Machine model	5	

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