

GRR-3G-xxx 3Gbps Video SFP Optical Receiver, PIN photodetector

Features

- ◆ HD-SDI SFP Receiver available
- ◆ SD-SDI SFP Receiver available
- ◆ 3G-SDI SFP Receiver available
- ◆ SMPTE 297-2006 Compatible.
- ◆ Metal enclosure for Lower EMI
- ◆ PIN photodetector
- ◆ Supports video pathological patterns for SD-SDI, HD-SDI and 3G-SDI
- ◆ Digital Diagnostic functions available through the I2C interface
- ◆ Compatible with RoHS
- ◆ +3.3V single power supply
- ◆ Operating case temperature:
Standard : 0 to +70°C



Applications

- ◆ SMPTE 297-2006 Compatible Electrical-to-Optical Interfaces.
- ◆ HDTV/SDTV Service Interfaces.

Description

The video series transceivers are high performance, cost effective modules for duplex video transmission application over single mode fiber.

The receiver is designed to receive data rates from 50Mbps to 2.97Gbps and is specifically designed for robust performance in the presence of SDI pathological patterns for SMPTE 259M,

SMPTE 344M, SMPTE 292M and SMPTE 424M serial rates. The module is fully compliant with SMPTE 297M-2006.

The receiver is consists of a PIN photodiode integrated with a trans-impedance preamplifier (TIA). All modules satisfy class I laser safety requirements.

Absolute Maximum Ratings

Parameter	Symbol	Min	Max	Unit
Supply Voltage	Vcc	-0.5	4.5	V
Storage Temperature	Ts	-40	+85	°C
Operating Humidity	-	5	85	%

Recommended Operating Conditions

Parameter	Symbol	Min	Typical	Max	Unit
Operating Case Temperature	Tc	0		+70	°C
					°C
Power Supply Voltage	Vcc	3.13	3.3	3.47	V
Power Supply Current	Icc			150	mA
Data Rate			3		Gbps

Optical and Electrical Characteristics

Parameter	Symbol	Min	Typical	Max	Unit	Notes
Receiver						
Rise/Fall Time (20%~80%)	SD-SDI	tr/tf		1500	ps	1
	HD-SDI			270		
	3G-SDI			135		
Total Output	PRBS and colour	SD-SDI	70	200	ps	
		HD-SDI	50	135		

Jitter	bar	3G-SDI	70	100			
	pathological	SD-SDI	200	300			
		HD-SDI	115				
		3G-SDI	120				
Centre Wavelength		λ_c	1260	1580	nm		
Receiver Sensitivity (PRBS)	SD-SDI			-22	dBm		
	HD-SDI			-22	dBm		
	3G-SDI			-22	dBm		
Receiver Sensitivity (Pathological)	SD-SDI			-20	dBm		
	HD-SDI			-22	dBm		
	3G-SDI			-22	dBm		
Receiver Overload			0		dBm	3	
LOS De-Assert		LOS_D			dBm		
LOS Assert		LOS_A			dBm		
LOS Hysteresis					dB		
Data Output Swing Differential		Vout	650	800	1000	mV	2
LOS		High	2.0		Vcc	V	
		Low			0.8	V	

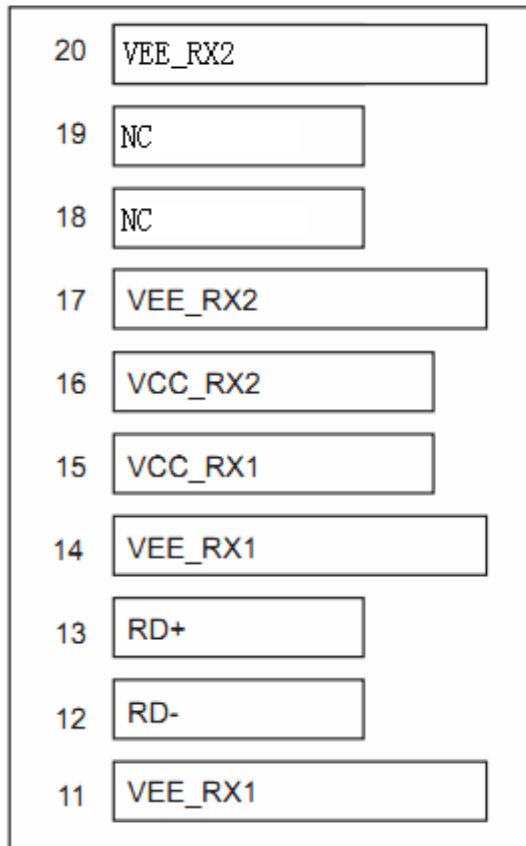
Notes:

1. Rise and fall times, 20% to 80%, are measured following a fourth-order Bessel-Thompson filter with a bandwidth of 0.75 x clock frequency corresponding to the serial data rate
2. PECL input, internally AC-coupled and terminated.
3. Internally AC-coupled.

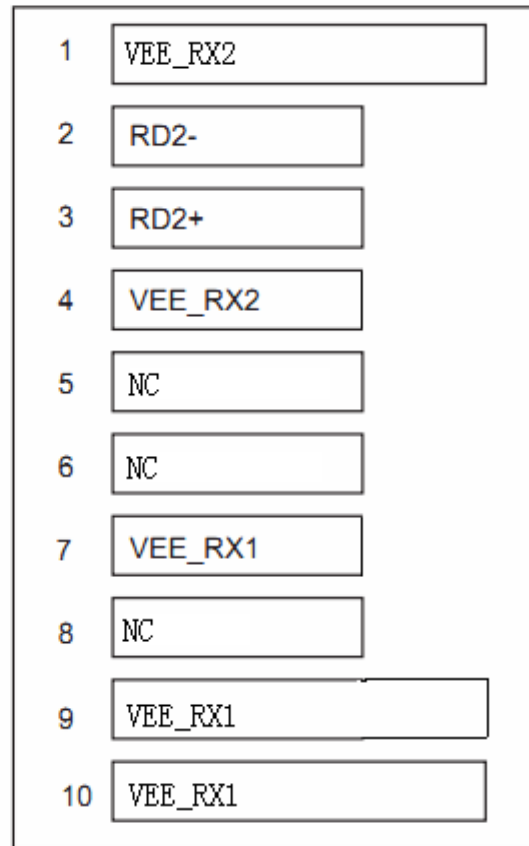
Pin Definitions

Pin Diagram

Top of Board



Bottom of Board
(as viewed through top of board)



Pin Descriptions

Pin	Signal Name	Description	Plug Seq.	Notes
1	VEE_RX2	Receiver2 Ground	1	
2	RD2-	Inv. Received2 Data Out	3	Note 1
3	RD2+	Received2 Data Out	3	Note 1

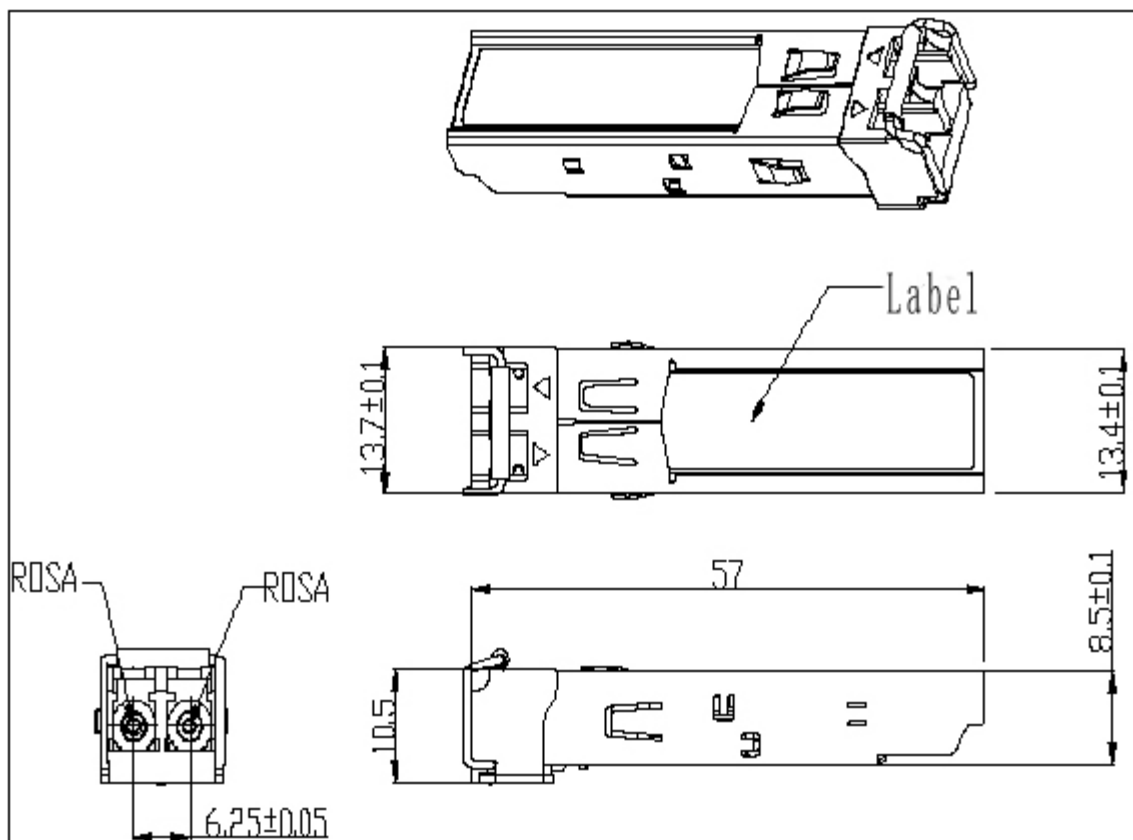


4	VEE_RX2	Receiver2 Ground	3	
5	NC	Not Connected	3	
6	NC	Not Connected	3	
7	VEE_RX1	Receiver1 Ground	3	
8	NC	Not Connected	3	
9	VEE_RX1	Receiver1 Ground	1	
10	VEE_RX1	Receiver1 ground	1	
11	VEE_RX1	Receiver1 ground	1	
12	RD-	Inv. Received Data Out	3	Note 1
13	RD+	Received Data Out	3	Note 1
14	VEE_RX1	Receiver1 ground	1	
15	VCC_RX1	Receiver1 Power Supply	2	
16	VCC_RX2	Receiver2 Power Supply	2	
17	VEE_RX2	Receiver2 Ground	1	
18	NC	Not Connected	3	
19	NC	Not Connected	3	
20	VEE_RX2	Receiver2 Ground	1	

Notes:

- 1) RD-/+: These are the differential receiver outputs. They are internally AC-coupled 100 differential lines which should be terminated with 100Ω (differential) at the user SERDES.

Mechanical Dimensions



Ordering information

Part Number	Product Description
GRR-3G-XXC	PIN, 3Gbps, 0°C ~ +70°C, No With Digital Diagnostic Monitoring

Important Notice

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