



## 3Gbps Video SFP Optical Receiver **FRR-3G-xxx**

### 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).

### 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	Standard	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
<b>Receiver</b>						
Rise/Fall Time (20%~80%)	SD-SDI	tr/tf		1500	ps	1
	HD-SDI			270		
	3G-SDI			135		
Total Output Jitter	PRBS and colour bar	SD-SDI	70	200	ps	
		HD-SDI	50	135		
		3G-SDI	70	100		
	pathological	SD-SDI	200	300		
		HD-SDI	115			
		3G-SDI	120			
Centre Wavelength	$\lambda_c$	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	



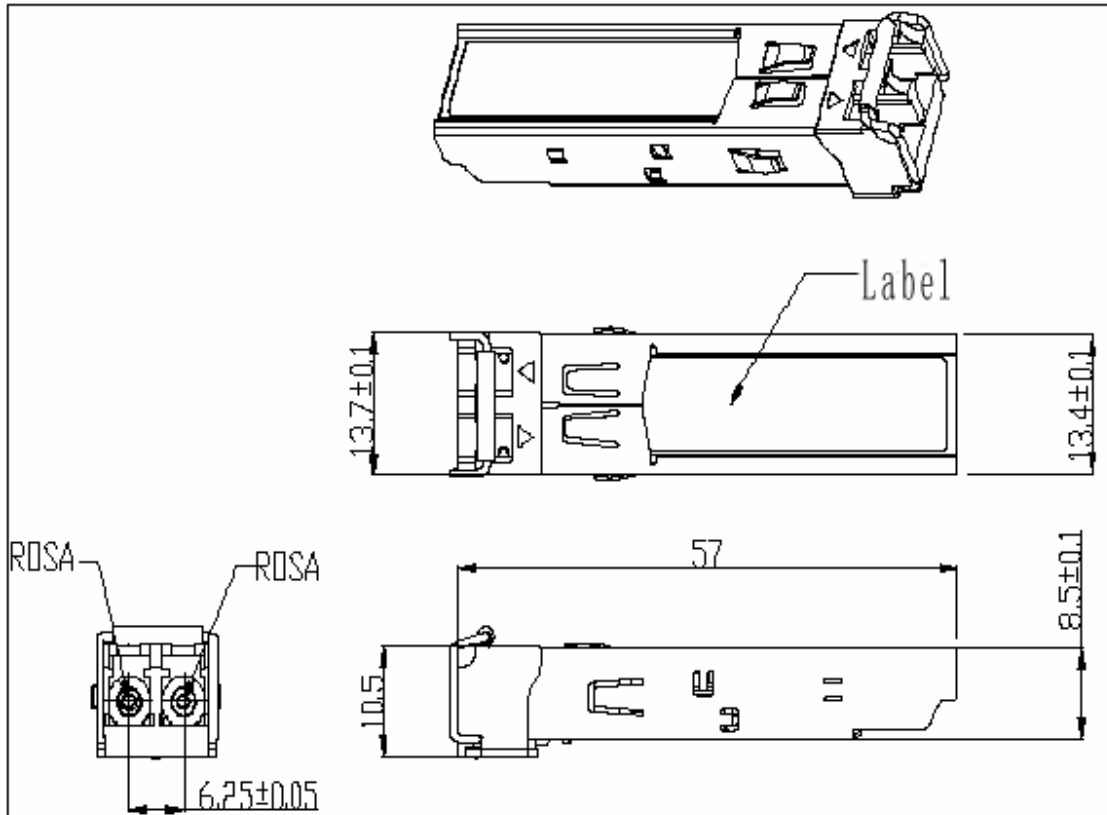


1	VEE_RX2	Receiver2 Ground	1	
2	RD2-	Inv. Received2 Data Out	3	Note 1
3	RD2+	Received2 Data Out	3	Note 1
4	VEE_RX2	Receiver2 Ground	3	
5	NC	Not Connected	3	
6	NC	Not Connected	3	
7	VEE_RX1	Receiver1 Ground	3	
8	NC	Not Connected	3	
9	VEE_RX1	Receiver1 Ground	1	
10	VEE_RX1	Receiver1 ground	1	
11	VEE_RX1	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
FRR-3G-XXC	PIN, 3Gbps, 0°C ~ +70°C, No With Digital Diagnostic Monitoring

## Important Notice

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