



GIGABIT FIBER SMALL FORM FACTOR PLUGGABLE (SFP) TRANSCEIVERS-10G

SFPG+ SERIES



SYNOPSIS

- The SFPG+ transceivers are high-performance, cost-effective modules supporting data rate of 10Gbps and 20km transmission distance with SMF.
- The transceiver consists of three sections: a DFB laser transmitter, a PIN photodiode integrated with a trans-impedance preamplifier (TIA) and MCU control unit.
- All modules satisfy class I laser safety requirements.
- The transceivers are compatible with SFP Multi-Source Agreement and SFF-8472 digital diagnostics functions.

FEATURES

- Hot-pluggable SFP+ footprint
- Supports up to 10.7Gbps bit rates
- 1310nm DFB laser and PIN photodiode
- Compliant with SFP+ MSA and SFF-8472 with duplex LC receptacle
- Compatible with RoHS
- Single +3.3V power supply
- Real Time Digital Diagnostic Monitoring
- Operating case temperature:
 - Standard: 0 to +70°C
 - Industrial: -40 to +85°C

APPLICATION

- 10GBASE-ER/EW & 10G Ethernet
- 10G Fiber Channel

STANDARD

- Compliant with MSA SFP+ specification (SFF-8431)
- Compliant with SFF-8472
- Compliant to IEEE 802.3ae

ABSOLUTE MAXIMUM RATING

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	Tc	0		+70	°C
	Extended		-20		+80	°C
	Industrial		-40		+85	°C
Power Supply Voltage		Vcc	3.135	3.30	3.465	V
Power Supply Current		Icc			350	mA
Data Rate				10.3	10.7	Gbps
Transmission Distance				20		km

OPTICAL AND ELECTRICAL CHARACTERISITICS

Parameter	Symbol	Min	Typical	Max	Unit	Notes
Transmitter						
Centre Wavelength	λ_c	1270	1310	1350	nm	
Side-Mode Suppression Ratio	SMSR	30	-		dB	
Average Output Power	Pout	-6.5		-0.5	dBm	1
Extinction Ratio	ER	3.5			dB	
Data Input Swing Differential	VIN	180		850	mV	2
Input Differential Impedance	ZIN	90	100	110	Ω	
TX Disable	Disable		2.0	Vcc	V	
	Enable		0	0.8	V	
TX Fault	Fault		2.0	Vcc	V	
	Normal		0	0.8	V	
Receiver						
Centre Wavelength	λ_c	1260		1600	nm	
Receiver Sensitivity				-14.4	dBm	3
Receiver Overload		0.5			dBm	3
LOS De-Assert	LOSD			-17	dBm	
LOS Assert	LOSA	-30			dBm	
LOS Hysteresis		0.5			dB	
Data Output Swing Differential	Vout	300		900	mV	4
LOS	High	2.0	Vcc	V		
	Low		0.8	V		

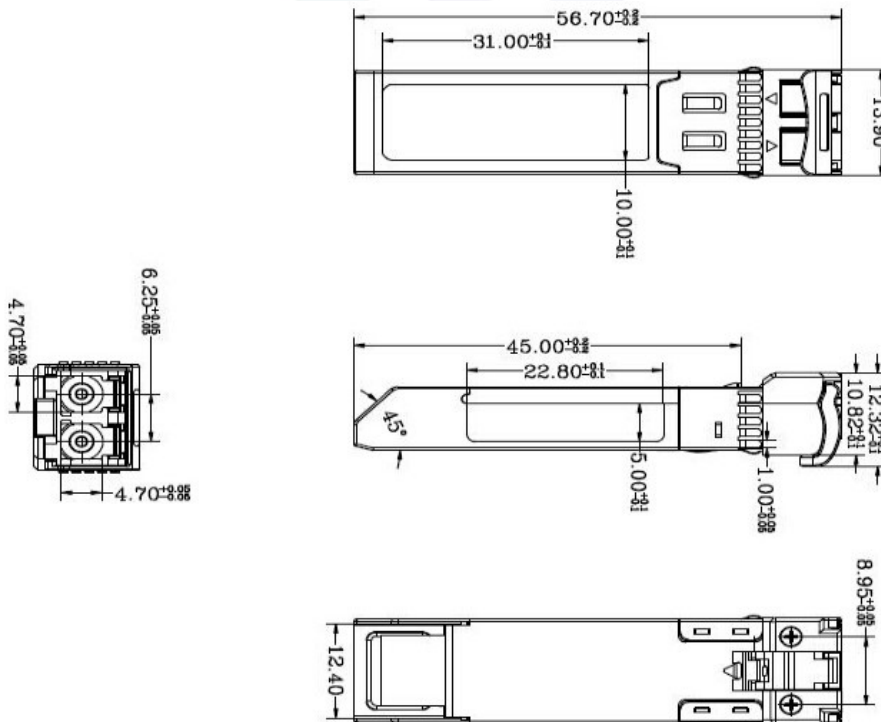
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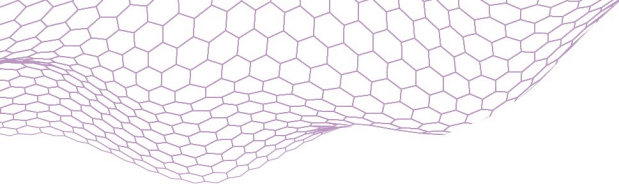
- The optical power is launched into SMF.
- PECL input, internally AC-coupled and terminated.
- Measured with a PRBS 231-1 test pattern @10312Mbps, BER $\leq 1 \times 10^{-12}$.
- Internally AC-coupled.

DIGITAL DIAGNOSTICS MEMORY MAP

- The transceivers provide serial ID memory contents and diagnostic information about the present operating conditions by the 2-wire serial interface (SCL, SDA)
- The diagnostic information with internal calibration or external calibration all are implemented, including received power monitoring, transmitted power monitoring, bias current monitoring, supply voltage monitoring and temperature monitoring

MECHANICAL DIMENSIONS

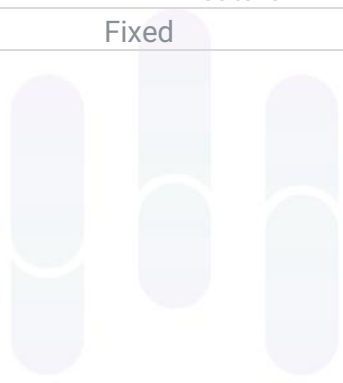




ORDERING CODE

SFPG+ XXX E D A

SFPG+	Base model for 10G SFP
XXXX	S020: 20Km Single Mode, Wavelength: 1310nm S040: 40Km Single Mode, Wavelength: 1310nm S080: 80Km Single Mode, Wavelength: 1550nm S100: 100Km Single Mode Wavelength: 1550nm
E	Extended Temperature -40 to 85 Deg C
D	DDMI Feature
A	Fixed



DATA BRIDGE
D Y N A M I C