

# SO-SFP-10GE-LR

SFP+, 10GBase-LR, 1310nm, SM, DDM, 6.2dB, 10km

## OVERVIEW

The SO-SFP-10GE-LR series single mode transceiver is a small form factor pluggable module for duplex optical data communications such as IEEE 802.3ae 10GBase-LR/LW. This module is designed for single mode fiber and operates at a nominal wavelength of 1310 nm.

## PRODUCT FEATURES

- Operating data rate up to 11.1Gbps
- 1310nm DFB-LD transmitter
- Distance up to 10km
- Single 3.3V Power supply and TTL logic interface
- Duplex LC connector interface
- Hot-Pluggable
- Power dissipation < 1.0W
- Compliant with MSA SFP+ specification SFF-8431
- Compliant with IEEE 802.3ae 10GBASE-LR/LW
- Class 1 laser compliant according to IEC-60825
- Case operation temperature:
  - Standard: 0°C to +70°C
  - Industrial: -40°C TO +85°C

## APPLICATIONS

- 10GBASE-LR at 10.31 Gbps
- 10GBASE-LW at 9.95 Gbps
- OBSAI rates 6.144 Gb/s, 3.072 Gb/s, 1.536 Gb/s, 0.768Gb/s
- CPRI rates 10.138 Gb/s, 9.830 Gb/s, 7.373Gb/s,
- 6.144 Gb/s, 4.915 Gb/s, 2.458 Gb/s,
- 1.229 Gb/s, 0.614Gb/s
- Other optical links

## ORDERING INFORMATION

Part Number	Description
SO-SFP-10GE-LR	SFP+, 10GBase-LR, 1310nm, SM, DDM, 6.2dB, 10km
SO-SFP-10GE-LR-I	SFP+, 10GBase-LR, 1310nm, SM, DDM, 6.2dB, 10km ind.temp.

Subject to change without notice.

For more information, visit [smartoptics.com](http://smartoptics.com).

## ABSOLUTE MAXIMUM RATINGS

Parameter	Symbol	Min	Max	Unit
Storage Temperature	TS	-40	+85	°C
Supply Voltage	VCC	-0.5	3.6	V
Input Voltage	Vin	-0.5	Vcc	V

## RECOMMENDED OPERATING CONDITIONS

Parameter	Symbol	Min	Typ	Max	Unit
Case Operating Temperature	$T_c$	SO-SFP-10GE-LR	0	+70	°C
		SO-SFP-10GE-LR-I	-40	+85	
Power Supply Voltage	Vcc	3.15	3.3	3.45	V
Power Supply Current	Icc			300	mA
Surge Current	ISurge			+30	mA
Baud Rate		0.6		11.1	Gbps

## OPTICAL AND ELECTRICAL CHARACTERISTICS

Parameter	Symbol	Min	Typ	Max	Unit
9µm Core Diameter SMF			10		Km
Data Rate		0.6		11.1	Gbps

## OPTICAL AND ELECTRICAL CHARACTERISTICS TRANSMITTER

Parameter	Symbol	Min	Typ	Max	Unit
Centre Wavelength	$\lambda_c$	1270	1310	1355	nm
Spectral Width (-20dB)	$\Delta\lambda$			1	nm
Average Output Power	$P_{out}$	-8.2		+0.5	dBm
Extinction Ratio	ER	3.5			dB
Average Power of OFF Transmitter	$P_{off}$			-30	dBm
Side Mode Suppression Ratio	SMSR	30			dB
Transmitter Dispersion Penalty	TDP			3.2	dB

## OPTICAL AND ELECTRICAL CHARACTERISTICS RECEIVER

Parameter	Symbol	Min	Typ	Max	Unit
Centre Wavelength	$\lambda$	1260		1565	nm
Sensitivity	$P_{min}$			-14.4	dBm
Receiver Overload	$P_{max}$	0.5			dBm
Optical Return Loss	ORL			-12	dB
LOS De-Assert	LOSD			-16	dBm
LOS Assert	LOSA	-28			dBm