

## Part Type: SFP+-10GBase-SR SFP+-10GBase-SR-IND

### Quick Spec:

Form Factor:	SFP+
TX Wavelength:	850nm
Reach:	300m
Cable Type:	MMF
Rate Category:	10GBase
Interface Type:	SR
DDM:	Yes
Connector Type:	Dual-LC
Power Budget:	5.1dB
TX Power Min/Max:	-6.00 to -1.00
RX Power Min/Max:	-11.1 to -1.00



### Features

- Operating Data Rate up to 10.3Gbps
- Single 3.3V Power Supply and TTL Logic Interface
- Hot Pluggable
- 850nm VCSEL Transmitter
- Reach:
  - OM1 (62.5/125micron) 33m
  - OM2 (50/125micron 400 MHz\*km) 82m
  - OM3 (50/125micron 2000 MHz\*km) 300m
  - OM4 (50/125micron 4700) 300m
- Operating Case Temperature
  - Standard: 0°C~+70°C
  - Industrial: -40°C~+85°C
- Compliant with MSA SFP+
- Compliant with IEEE 802.3ae 10GBASE-SR
- Digital Diagnostic Monitor Interface
- Compliant with SFF-8472
- RoHS 6 Compliant

### Applications

- 10G Ethernet at 10.3125Gbps

### Electrical Characteristics (Condition: Ta=TOP)

Parameter	Symbol	Min.	Typ	Max.	Unit	Notes
CML Inputs(Differential)	Vin	150		1200	mV p-p	AC coupled inputs
Supply Current	ICC			300	mA	
Input Impedance (Differential)	Zin	85	100	115	ohm	Rin > 100 kohm @ DC
Tx_Disable Input Voltage - Low	VIL	0		0.8	V	
Tx_Disable Input Voltage - High	VIH	2.0		3.45	V	
Tx_Fault Output Voltage - Low	VOL	0		0.5	V	
Tx_Fault Output Voltage - High	VOH	2.0		Vcc+0.3	V	
CML Outputs (Differential)	Vout	350		700	mV pp	AC coupled outputs
Output Impedance (Differential)	Zout	85	100	115	ohms	
Rx_LOS Output Voltage- Low	VOL	0		0.5	V	
Rx_LOS Output Voltage- High	VOH	2.5			V	

### Optical Characteristics (Condition: Ta=TOP)

TX						
Parameter	Symbol	Min	Typ	Max	Unit	
Data Rate		-	10.3	-	Gb/s	
50/125mm MMF			300		m	
Centre wavelength	$\lambda_c$	840	850	860	nm	
Output Spectral Width(RMS)	$\Delta\lambda$	-	-	0.45	nm	
Average Output Power	P <sub>out</sub>	-6	-	-1	dBm	
Extinction Ratio	ER	3.0	5.0	-	dB	
Output Optical Eye		IEEE 802.3-2005 Compliant				
Transmitter Dispersion Penalty	TDP			3.9	dB	
Input Differential Impedance	Zin	90	100	110	$\Omega$	
TX Disable	Disable		2.0	Vcc+0.3	V	
	Enable		0	0.8		
TX Fault	Fault		2.0	Vcc+0.3	V	
	Normal		0	0.8		
TX Disable Assert Time	t <sub>off</sub>			10	us	

RX					
Parameter	Symbol	Min	Typ	Max	Unit
Center Wavelength	$\lambda_c$	840	850	860	nm
Receive Sensitivity	$P_{in}$	-	-	-11.1	dBm
Maximum Input Power	$P_{MAX}$	-1			dBm
Signal Detect Threshold-Assertion:	$SD_{HIGH}$	-	-	-12	dBm
Signal Detect Threshold-Deassertion:	$SD_{LOW}$	-25	-	-	dBm
Output Differential Impedance	Pin	90	100	110	$\Omega$
Receiver Overload	$P_{max}$	0.5			dBm
Optical Return Loss	ORL			-12	dB
LOS	High	2.0		$V_{cc}+0.3$	V
	Low	0		0.8	

### Absolute Maximum Ratings ( $T_C=25^\circ\text{C}$ )

Parameter	Symbol	Min	Max	Unit
Storage Temperature	$T_{ST}$	-40	+85	$^\circ\text{C}$
Operating Temperature (Standard)	$T_{IP}$	0	+70	$^\circ\text{C}$
Operating Temperature (Industrial)		-40	+85	
Input Voltage	$T_{CC}$	0	5	V

### Recommend Operation Environment

Parameter	Symbol	Min	Typ	Max	Unit
Supply Voltage	$V_{CC}$	+3.15	3.3	+3.45	V
Operating Temperature (Standard)	$T_{OP}$	0	-	+70	$^\circ\text{C}$
Operating Temperature (Industrial)		-40	-	+85	