

Features

- Up to 11.1Gbps Data Links
- Support 1G and 10G
- Up to 10km transmission on SMF
- DFB Laser and PIN receiver
- Metal enclosure, for lower EMI
- 2-wire interface with integrated Digital Diagnostic monitoring
- Specifications compliant with SFF 8472
- Compliant with SFP+ MSA with LC connector
- Single 3.3V power supply
- Power dissipation < 1.2 W
- Available case operating temperature ranges:
 - Commercial: 0°C to +70°C
 - Industrial: -40°C to +85°C



- SONET
- Fibre Channel

Standard

- Compliant to SFF-8431
- Compliant to SFF 8472
- RoHS Compliant.

Applications

- 10GBASE-LR/LW & 10G Ethernet
- CPRI / eCPRI

1. Absolute Maximum Ratings

Any stress beyond the maximum ratings can result in permanent damage. The device specifications are guaranteed only under the recommended operating conditions.

Parameter	Symbol	Min	Typ	Max	Unit
Storage Temperature	Ts	-40	-	85	°C
Relative Humidity	RH	5	-	95	%
Power Supply Voltage	VCC	-0.3	-	4	V

2. Recommended Operating Conditions

Parameter	Symbol	Min	Typ	Max	Unit	Notes
Case Operating Temperature	Commercial	Tcase	0	-	70	°C
	Industrial	Tcase	-40	-	85	°C
Power Supply Voltage	VCC	3.14	3.3	3.47	V	
Power Supply Current	ICC	-		450	mA	
Data Rate	BR		10.3125		Gbps	
Transmission Distance	TD		-	10	km	
Coupled fiber	Single mode fiber					9/125um SMF

3. Optical Characteristics

Parameter	Symbol	Min	Typ	Max	Unit	Note
Transmitter						
Average Launched Power	Pout	-6		-0.5	dBm	1
Extinction Ratio	ER	3.5			dB	
Optical Wavelength	λ	1260	1310	1355	nm	
Spectrum Band Width (-20dB)	σ			1.0	nm	
Output Eye Mask	Compliant with IEEE 802.3ae					
Receiver						
Input Optical Wavelength	λ_c	1270		1610	nm	
Receiver Sensitivity	Psen			-14.4	dBm	2
Input Saturation Power (Overload)	Psat	0.5			dBm	
LOS Assert	LOSA	-30			dBm	
LOS De-assert	LOSD			-17	dBm	
LOS Detect Hysteresis	PHYS	0.5	1.0		dB	

Notes:

- Class 1 Laser Safety per FDA/CDRH and IEC-825-1 regulations.
- Measured with a PRBS 2³¹-1 test pattern, @10.3125Gb/s, BER<10⁻¹².

4. Electrical Characteristics

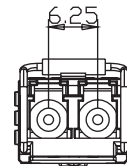
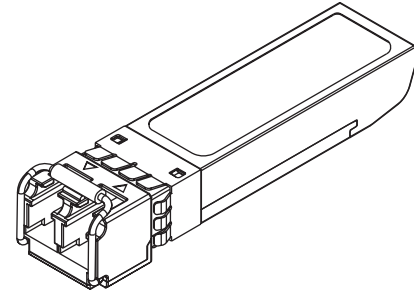
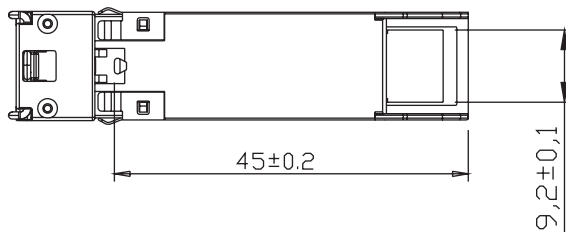
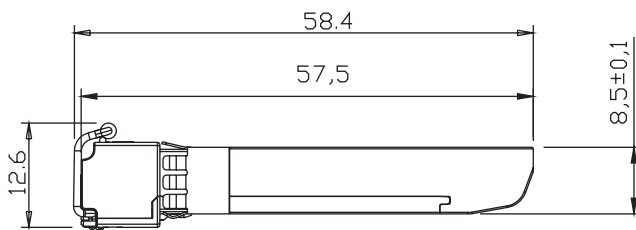
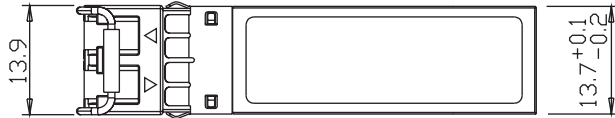
Parameter	Symbol	Min	Typ	Max	Unit	Notes
Supply Voltage	Vcc	3.14	3.3	3.46	V	
Supply Current	Icc			360	mA	

Transmitter						
Input differential impedance	Rin		100		Ω	1
Single ended data input swing	Vin,pp	180		700	mV	
Transmit Disable Voltage	VD	Vcc-1.3		Vcc	V	
Transmit Enable Voltage	VEN	Vee		Vee+ 0.8	V	2
Transmit Disable Assert Time				10	us	
Receiver						
Differential data output swing	Vout,pp	300		850	mV	3
Data output rise time	tr	28			ps	4
Data output fall time	tf	28			ps	4
LOS Fault	VLOS fault	Vcc-1.3		VccHOST	V	5
LOS Normal	VLOS norm	Vee		Vee+0.8	V	5
Power Supply Rejection	PSR	100			mVpp	6

Notes:

1. Connected directly to TX data input pins. AC coupled thereafter.
2. Or open circuit.
3. Into 100 ohms differential termination.
4. 20 – 80 %.
5. Loss Of Signal is LVTTTL. Logic 0 indicates normal operation; logic 1 indicates no signal detected.
6. Receiver sensitivity is compliant with power supply sinusoidal modulation of 20 Hz to 1.5 MHz up to specified value applied through the recommended power supply filtering network.

5. Mechanical Diagram



Units in MM

Note: External physical characteristics are subject to variation. This may include, but is not limited to, external case designs, pull tab colors and/or shapes, removal latch styles or colors, and label sizes and placement. These variations do not affect the function or characteristics of the transceivers.

6. Ordering Information

OEM	Part Number	OEM	Part Number
A10 Networks	AXSK-SFP+LR-A	Extreme	10302-A
Accedian	7SN-500-A	Extreme	10302-C1
Accedian	7SN-500-C1	Extreme	10GESFPP-LR-EXN
Adtran	1442410G1-A	F5 Networks	F5-UPG-SFP+-LR-R-A
Adtran	10GSFP+E-LR-ADN	Finisar	FTLX1472M3BCL-A
Adva	1061701850-02-A	Finisar	FTLX1475D3BTL-A
Alcatel	3HE04823AA-A	Finisar	FTLX1475D3BTL-C1
Alcatel	3HE04823AA-C1	Force10	GP-10GSFP-1L-A
Alcatel	3FE62600DA-A	Fortinet	FG-TRAN-SFP+LR-A
Alcatel	1AB410060001-A	Fortinet	FN-TRAN-SFP+LR-A

Alcatel	SFP-10G-LR-ALCATEL-A	Fujitsu	SFPP-LR-A
Alcatel	3HE09327AA-A	Fujitsu	HCD10D10I0000-0-A
Alcatel	ISFP-10G-LR-A	Gigamon	SFP-533-A
Alcatel	SFP-10G-GIG-LR-A	HP	10GESFPP-LR-HP
Alcatel-Lucent	SFP-10G-LR-AL-A	HP	J9151A-C1
Alcatel-Lucent	3AL82026AA-A	HP	J9151E-A
Alcatel-Lucent	10GESFPP-LR-ALU	HP	J9151E-C1
Allied Telesis	SP10LR-A	Huawei	34060742-A
Allied Telesis	AT-SP10LR/I-A	Huawei	34060613-A
Apcon	10GSFP+E-LR-APC	Huawei	OSX001002-A
Arista	SFP-10G-LR-AN-A	IBM	45W4264-A
Arista	SFP-10G-LRL-AN-A	IBM	88Y6877-A
Aruba	SFP-10GE-LR-ARUBA-A	Infinera	TOM-10GE-LRL-A
Avago	AFCT-739DMZ-A	Infinera	TOM-10G-SFPP-SR1-A
Avaya	AA1403011-E6-A	Intel	E10GSFPLR-A
Avaya	AA1403011-E6-C1	Intel	E10GSFPLR-C1
Brocade	XBR-000217-A	Intel	10GESFPP-LR-INT
Brocade	XBR-000182-A	Ixia	SM1310-PLUS-A
Brocade	10G-SFPP-LR-A	Ixia	948-0014-A
Brocade/Foundry	10G-SFPP-LR-C1	JDSU	JSH-01LWAA1-A
Brocade/Foundry	10GESFPP-LR-FBR	Juniper	SRX-SFPP-10G-LR-A
Calix	100-01512-A	Juniper	SRX-SFP-10GE-LR-A
Calix	10GESFPP-LRI-CLX	Juniper	SFPP-10GE-LR-A
Calix	10GSFP+E-LR-CLX	Juniper	SFPP-10GE-LR-IT-A
Check Point	CPAC-TR-10LR-A	Juniper	EX-SFP-10GE-LR-A
Ciena	160-9103-900-A	Juniper	EX-SFP-10GE-LR-C1
Ciena	160-9102-900-A	Juniper	QFX-SFP-10GE-LR-A
Ciena	XCVR-S10V31-A	Juniper	SFP-10GE-LR-A
Ciena	XCVR-S10V31-C1	Juniper	SFP-10GE-LR-C1
Ciena	NTTP30CFE6-C1	Juniper	10GESFPP-LR-JUN
Ciena	10GESFPP-LR-CIE	Juniper	EX-SFP-10GE-LR-C1-TAA
Ciena	10GESFPP-LR-O-CIE	Juniper	QFX-SFP-10GE-LR-C1
Ciena	8GFCSFPP-LR-O-CIE	Luxul	10G-SM-DX-LC
Cisco	SFP-10G-LR-S-A	Mellanox	MFM1T02A-LR-A
Cisco	SFP-10G-LR-S-C1	Mellanox	MFM1T02A-LR-C1
Cisco	SFP-10G-LR-A	Meraki	MA-SFP-10GB-LR-A
Cisco	SFP-10G-LR-X-A	Mikrotik	S+31DLC10D-C1

Cisco	SFP-10G-LRL-A	MikroTik	S+31DLC10D-A
Cisco	ONS-SC+-10G-LR-A	MRV	SFP-10GD-LR-A
Cisco	10GESFPP-LR-CSC	MSA	AN-SFP10G-LR-I
Cisco	SFP-10G-LR-C1	MSA Champion ONE	10GSFP+E-LR
Cisco	SFP-10G-LR-C1-TAA	MSA Champion ONE	J9151A-A
Cisco	10GESFPP-LRI-CSC	MSA Champion ONE	10GSFP+E-LR-H
Citrix	EW3C0000711-A	MSA Champion ONE	10GSFP+C-LR
Cyan	280-0092-A	MSA Champion ONE	MR-SFP+E-LR
Dell	330-4328-A	Nokia	472949A-A
Dell	331-5310-A	Nokia	472749A-A
Dell	407-BBOP-A	Nokia	473472A-A
Dell	407-BBOP-C1	Nokia	475338A.101-A
Dell	407-BCDT-C1	OnePort	OP-SFP10G-LR
Dell	10GESFPP-LR-DLL	Palo Alto	PAN-SFP-PLUS-LR-A
Edgecore	ET5402-LR-A	Palo Alto	PAN-SFP-PLUS-LR-C1
Enterasys	10GBASE-LR-SFPP-A	Ubiquiti Networks	UF-SM-10G-A
Ericsson	RDH10265/3-A	ZTE	SFP+-10G-S10K-A
Ericsson	RDH10265/2-A		

7. Contact Information

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