

SFP-10G-LR-SY

10GBASE-LR SFP+, 1310 nm, 10 km SMF TRANSCEIVER

1. FEATURES AND SPECIFICATIONS

- ▶ Form Factor: **SFP+**
- ▶ Operating Data Rate: **10G**
- ▶ Protocol(s): **10GE, FC**
- ▶ Fiber Type: **SMF**
- ▶ Technique: **LR**
- ▶ Lane Count: **1**
- ▶ Wavelength(s)/Channel(s): **1310 nm**
- ▶ Nominal Distance: **10 km**
- ▶ Nominal Power Budget: **7.9 dB**
- ▶ Connector: **LC duplex**
- ▶ Temperature Range: **0 to +70°C, -40 to +85°C**
- ▶ Compliance: **SFP+ MSA, SFF-8431, IEEE 802.3ae**
- ▶ Monitoring: **Digital diagnostic monitor interface**
- ▶ Laser Type: **DFB**
- ▶ Receiver Type: **PIN**
- ▶ Power Dissipation: **1.5 W**

2. ABSOLUTE CHARACTERISTICS

PARAMETER	SYMBOL	MIN.	TYP.	MAX.	UNIT
SIGNAL INPUT VOLTAGE	V_{IN}	0.4	-	1.6	V
POWER SUPPLY VOLTAGE	V_{CC}	0	-	3.6	V
OPERATING TEMPERATURE	T_{CASE}	0	-	+70	°C
STORAGE TEMPERATURE	T_S	-40	-	+85	°C

3. ELECTRICAL OPERATING CONDITIONS

PARAMETER	SYMBOL	MIN.	TYP.	MAX.	UNIT
SUPPLY CURRENT	I_{CC}	-	-	0.3	A
SUPPLY VOLTAGE	V_{CC}	3.13	3.3	3.47	V

4. OPTICAL CHARACTERISTICS

RECEIVER

PARAMETER	SYMBOL	MIN.	TYP.	MAX.	UNIT
OPTICAL WAVELENGTH	λ_C	1260	-	1355	nm
LOS HYSTERESIS	LOS_H	0.5	1	0	dB
LOS ASSERT	LOS_A	-30	-	-	dBm
LOS DE-ASSERT	LOS_D	-	-	-12	dBm
RX MAX. SENSITIVITY	P_{MIN}	-	-	-14.4	dBm
DAMAGE THRESHOLD	P_{MAX}	0.5	-	-	dBm

TRANSMITTER

PARAMETER	SYMBOL	MIN.	TYP.	MAX.	UNIT
OPTICAL WAVELENGTH	λ_C	1260	1310	1355	nm
OPTICAL EXTINCTION RATIO	ER	3.5	-	-	dB
SIDE MODE SUPPRESSION RATIO	SMSR	30	-	-	dBm
SPECTRAL WIDTH	$\Delta\lambda$	-	-	1	dBm
OPTICAL TRANSMIT POWER	P_{OUT}	-6.5	-	-0.5	dBm

5. ORDERING INFORMATION

PART NAME	DESCRIPTION
SFP-10G-LR-SY	10GBase LR SFP+, 1310 nm, 10 km over SMF, LC duplex, speeddy
SFP-10G-LR-I-SY	10GBase LR SFP+, 1310 nm, 10 km over SMF, LC duplex, Industrial temperature -40 to +85°C, speeddy

6. COMPATIBILITY

A10NETWORKS (AXSK-SFP+-LR), ACCEDIAN NETWORKS (7SN-400), ADTRAN (1442410G1), ADVA (1061701850-02, 1061701850-03, 1061701851-02, 1061701853-01), AEROHIVE NETWORKS (AH-ACC-SFP-10G-LR), ALCATEL-LUCENT ENT. (903432-90, SFP-10G-LR), ALLIED TELESIS (AT-SP10LR), ALLNET (ALL4758), ARBOR NETWORKS (SFP+-LR), ARISTA NETWORKS (SFP-10G-LR), ARRIS (801146), ARUBA NETWORKS (JW092A), ARUBA NETWORKS/HP NETWORK (455886-B21, 455886-B21_2, J9151A), ASUS (SFP+-LR), ATTO (SFP8-0000-R00), AVAYA/NORTEL (AA1403011-E6), AXON (SFP+-LR), BAROX (AC-SFP+-SM-10), BARRACUDA NETWORKS (SFP+-LR), BLACKBOX (LSP422), BROADCOM (SFP+-LR), BROCADE (10G-SFP-LR, XBR-000153, XBR-000182, XBR-000217), BROCADE/RUCKUS (10G-SFP-LR), CALIX (100-01512), CAMBIUM NETWORKS (SFP-10G-LR), CASA SYSTEMS (SFP+-LR), CENTEC (SFP+-LR), CERAGON (SFP+-LR), CHECK POINT (CPAC-TR-10LR, CPAC-TR-10LR-C), CHELSIO (SM10G-LR), CIENA (160-9103-900, XCVR-S10V31), CIENA/NORTEL (NTTP30CFE6), CISCO SYSTEMS (DS-SFP-FC8G-LW, ONS-SC+-10G-LR, SFP-10G-LR, SFP-10G-LR-S), CISCO SYSTEMS/VIPTELA (VIP-SFP+-10GE-LR), CISCO/MERAKI (MA-SFP-10GB-LR), CLAVISTER (APP-SFP-10G-LR), COMNET (SFP-10G-LR), CORIANT/TELLABS (81.71T-SPMRSR1-R6), CTC UNION (ISFP-S9010-31-D), CUMULUS NETWORKS (SFP+-LR), CYAN (280-0092-00), DELL (330-2409, 330-4328, 331-5310, 407-10941, 407-BBEE, 407-BBOP, 407-BBZV, 430-4146, RN84N), DELL/FORCE10 (GP-10GSFP-1L), DELOCK (86171), D-LINK (DEM-432XT, DEM-432XT-DD), ECI (OTP10_LR), EDGE CORE (ET5402-LR), EMC (NEX-5020-10GL), EMULEX (LPE12100-OPT, OC10-LR-OPT-1), ERICSSON (RDH1025/3, RDH901028/1), EVERTZ (SFP10G-TR13), EXTREME (10302), EXTREME/ENTERASYS (10GB-LR-SFP), F5 NETWORKS (OPT-0017), FIBROLAN (SFPP-13-10), FIELDCAST (FC-TXRX-06-31), FIREEYE (LR10GPX-HW), FLUKE NETWORKS (OPVXG-SFP-PLUS-LR, VX_00009), FORCEPOINT (MOD-SFP-10G-LR), FORTINET (FG-TRAN-SFP+LR, FN-TRAN-SFP+LR), FUJITSU (S26361-F3986-E4), GIGAMON (SFP-533), GRASSVALLEY (SFP+-LR), H3C/3COM (O231A0A8), HIRSCHMANN (M-SFP-10-LR/LC-EEC), HITACHI (10G-SFP-LR.P), HP H3C (JD094B, JL439A), HP STORAGE/B-SERIES (AJ717A, AW584A, QK727A), HP STORAGE/H-SERIES (720999-002), HUAWEI (OSX001001, OSX001002, OSX010000, OSX010N01, OSX010N05, OSX010N09), IBM STORAGE (45W1193, 45W1216, 45W2420), INFINERA (TOM-10G-SFP-SR1, TOM-10GE-LRL), INFINERA/TRANSMODE (TRX100100), INFORTREND (SFP+-LR), INTEL (E10GSFPLR), INTEL NETSCALER (SFP+-LR), JUNIPER (EX-SFP-10GE-LR, QFX-SFP-10GE-LR, SFP-10GE-LR, SFPP-10G-LRT2-C, SFPP-10GE-LR, SRX-SFP-10GE-LR), KEMP TECHNOLOGIES (LM-SFP-LR), KEYMILE (37973134), KEYSIGHT/IXIA (SM1310-PLUS), KTI NETWORKS (SFP-10G-LR-A), LANCOM (SFP-LX-LC10), LAWO (981/60-81), LENOVO (00FE331, 90Y9412), LENOVO/BLADE NETWORK (BN-CKM-SP-LR), LENOVO/IBM (00AR095, 31P1658, 45W2417, 78P3817, 81Y2493, 99Y0229), LEVELONE (SFP-6121), MCAFEE (IAC-SFTLR-FOTA), MIKROTIK (S+31DLC10D), MOTOROLA (584837-001-00, NX-7500-SFPPL-LX), MOXA (SFP-10GLRLC), MRV (SFP-10GD-LR), MSA (SFP-10G-LR), MYRICOM (10G-SFP-LR), NAPATECH (802-0039-01-01), NEC (B02035-W0N45), NET INSIGHT (NPA0077-LRD1), NETAPP (X6569-R6, X6588-R6, X6589-R6, X6601A-R6, X6604A), NETGEAR (AXM762), NETOPTICS (SFP+KT-LR), NETSCOUT (321-1487), NEVION (SFP-TR10-13T-LR), NIVEO (NVM10RLG), NOKIA NETWORKS (FOSG-472063A.101, FOTB-473472A.101, P206994), NOKIA SIEMENS NETWORKS (V50017-U622-K500), NOKIA/ALCATEL-LUCENT (1AB390930002, 3FE62600AA, 3FE62600CA, 3FE62600DA, 3HE04823AA, 3HE09327AA), NORTEL/JUNIPER/NSN (SFP+-LR), NOVASTAR (SFP-10G-LR), NOVIFLOW (400000504), NUTANIX (X-XCVR-LR-SFP+), NVIDIA/MELLANOX (MFM1T02A-LR), OPENGear (SFP+LR), ORACLE (X5562A-Z), PACKETLIGHT (SL110, SL112), PALO ALTO NETWORKS (PAN-SFP-PLUS-LR), PBN (SFP+-GX3131-LCPC), PENGUIN COMPUTING (SFP+-LR), PERLE (PSFP-10GD-S2LC10), PLANET (MTB-LR), PROFITAP (SFP+-LR), PULSESECURE (SFP+-LR), PURE STORAGE (FA-10GB-ETH-SFP-LR, FA-8GB-FC-SFP-LR, FA-XR2-10G-ETH-SFP-LR), QLOGIC (SFP10-LR-SP, SFP8-LW-1PK), QNAP (SFP+-LR), QUANTA (SFP+-LR), RAD (SFP-P-1DH), RADWARE (9062196), RAISECOM (USFP+-192-S31-DL), READYLINKS (1/10-SM-1310-10K), SAF TEHNIKA (IOAOM005), SANDVINE (SFP+-LR), SOLARFLARE (SFM10G-LR), SONICWALL (01-SSC-9786), SONNET TECHNOLOGIES (G10E-SFP-LR), SONY (OTM-10GSR1), SOPHOS (ASG0000LR, ITFZTCHLR), SPIRENT (ACC-6051A, ACC-6082A), STARTECH (SFP10GLRST), STORMSHIELD (NA-TRANS-DUALSFP-LR), SUN (5562A-Z), SUPERMICRO (AOC-E10GSFPLR), SYNOLOGY (SFP+-LR), TELCO SYSTEMS (BTI-10GLR-DD-SFP+), TP-LINK (TL-SM5110-LR, TXM431-LR), TRANSITION NETWORKS (TN-10GSFP-LR1), TREND MICRO/TIPPINGPOINT (JC860A), UBIQUITI NETWORKS (UF-SM-10G), VOLEATECH (SFP+-LR), VSS MONITORING (VX_00009), WATCHGUARD (WG8583-LR), WAYSTREAM/PACKETFRONT (SFP-10GE-LR), WILDPACKETS (SFP+-LR), XILINX (SFP+-LR), XTERA COMMUNICATIONS (SFP+-LR, SFPP-10-10GD-XTRA), YAMAHA (SFP-SWRT-LR), ZEEVEE (Z4KSFP10G31-10K), ZHONE (MXK-10GE-SFP+-20KM-1310), ZTE (SFP-10GE-S10K), ZYXEL (SFP10G-LR)

7. WARNINGS AND SECURITY INFORMATION



CAUTION: Class 1 visible laser radiation present. Long term viewing of the laser can be harmful to the human eye.



This equipment has been tested according to European legislation and has been found safe, non-intervening with other electronic devices and is not subject to interference from other electronic devices



Hazardous Goods; our products are fully compliant with Directive 2011/65/EU (RoHS II) and 2002/95 EC (RoHS I)

Laser Class 1

Our products comply with 21 CFR 1040.10 and 1040.11, except for deviations pursuant to Laser Notice No. 50, dated June 24, 2007



Only (dis)connect the transceivers in an ESD Protected Area while using certified equipment and taking all necessary precautions as specified in IEC 61340-5-1.

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