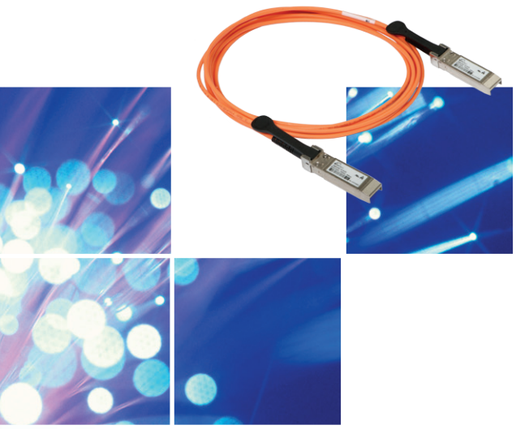

APAC Opto

Product guide

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Version 3

Accelerating at the speed of light

APAC Opto

expertise & respect

trusted technology

innovative ideas

quality & customer satisfaction

Based on the spirit of "Respect, Expertise & Sharing" and the company quality motto, APAC Opto will offer our customers the best product with the focus on growing the customer relationship to create a win-win outcome. APAC Opto pledges to maintain close association with research and production partners so as to achieve the company goal of "Innovation, Quality & Customer Satisfaction".

Founded in July 1998, APAC Opto Electronics Inc. is the leading manufacturer of high performance fiber optical transmission components for Local Area Networks(LANs), Wide Area Networks(WANs), Storage Area Networks(SANs), Metropolitan Area Networks(MANs) and Access Networks(ANs) in Taiwan.

The company supplies a broad range of optical communication components including O/E transceivers and Ethernet Products globally to manufacturers of communications for internet service providers and telecommunications & datacommunications operating companies.

APAC Opto Electronics Inc. was accredited with ISO 9001 in 1999 and ISO 14001 status in 2009, bearing proof of company commitment in quality and environment for continually systematic and sustainable improvement.

To learn more about APAC Opto Electronics Inc., please visit our website at www.apacoe.com.tw

ISO 9001 BUREAU VERITAS Certification

ISO 14001 BUREAU VERITAS Certification

Contents »

QSFP+

QSFP+ 40GBASE-SR4

Part Number	Bit Rate (Gbps)	Wavelength (nm)	Media	Reach	Application	Temp. Range(°C)	Connector	Voltage(V)	Note
LM2C-K3S-TC-N-Nx	40	850	MMF	150m / 300m	40GBASE-SR4	0 to 70	MPO	3.3V	1

Note 1 : Nx : NA & NB, NA = 150m, NB=300m

QSFP+ 40GBASE-LR4

Part Number	Bit Rate (Gbps)	Wavelength (nm)	Media	Reach	Application	Temp. Range(°C)	Connector	Voltage(V)	Note
LS3C-K3S-TC-N	40	1271/1291/1311/1331	SMF	10 km	40GBASE-LR4	0 to 70	LC	3.3V	

QSFP+ 40Gbps PSM4

Part Number	Bit Rate (Gbps)	Wavelength (nm)	Media	Reach	Application	Temp. Range(°C)	Connector	Voltage(V)	Note
LS3C-K3S-TC-N-P0	40	1310	SMF	10 km	4x10GBASE-LR/LW	0 to 70	MPO	3.3V	

Active Optical Cable

SFP+ AOC

Part Number	Bit Rate (Gbps)	Media	Reach	Application	Temp. Range(°C)	Voltage(V)	Note
LM28-H3C-TC-N-xx	10	MMF	1-100m	10GBASE Ethernet	0 to 70	3.3	1

QSFP+ SR4 AOC

Part Number	Bit Rate (Gbps)	Media	Reach	Application	Temp. Range(°C)	Voltage(V)	Note
LM2C-K3C-TC-N-XX	40	MMF	1.15~100m	40GBASE-SR4	0 to 70	3.3	2
LM2C-K3D-TC-N-xx	40	MMF	10~100m	40GBASE-SR4	0 to 70	3.3	3

QSFP28 SR4 AOC

Part Number	Bit Rate (Gbps)	Media	Reach	Application	Temp. Range(°C)	Voltage(V)	Note
LM2C-L3C-TC-N-xx	100	MMF	3~100m	100GBASE-SR4	0 to 70	3.3	4

Note 1 : xx : Cable Length
01 = 1m, 03 = 3m, 5 = 5m, 10 = 10m
20 = 20m, 30 = 30m, 50 = 50m, A0 = 100m

Note 2 : XX : Cable Length
01=1.15m, R1=1.5m, 02=2m,
10 = 10m, 20 = 20m, 30 = 30m, 40 = 40m, 50 = 50m
60 = 60m, 70 = 70m, 80 = 80m, 90 = 90m, A0 = 100m

Note 3 : xx : Cable Length
10 = 10m, 20 = 20m, 30 = 30m, 40 = 40m, 50 = 50m
60 = 60m, 70 = 70m, 80 = 80m, 90 = 90m, A0 = 100m

Note 4 : xx : Cable Length
03 = 3m, 05 = 5m, 10 = 10m, 20 = 20m
30 = 30m, 50 = 50m, 70 = 70m, A0 = 100m

1x9, SC Transceiver

OC3/STM1/Fast Ethernet

Part Number	Bit Rate (Mbps)	Wavelength (nm)	Media Note 1	Reach Note 2	Application	TX Power (dBm)	RX Sens. (dBm)	Temp. Range(°C)	Voltage(V)	Note
LM22-A3S-PC-N	125	850(VCSEL)	MMF	2km	Fast Ethernet/OC3	-4 ~ -10	< -24	0 to 70	3.3	
LM22-A3S-PI-N	125	850(VCSEL)	MMF	2km	Fast Ethernet/OC3	-4 ~ -10	< -24	-20 to 85	3.3	
LM22-A3S-PI-N-ER	125	850(VCSEL)	MMF	2km	Fast Ethernet/OC3	-4 ~ -10	< -24	-40 to 85	3.3	
LM32-A3S-PC-N	125/155	1310(LED)	MMF	2km	Fast Ethernet/OC3	-14 ~ -20	< -31	0 to 70	3.3	
LM32-A3S-PI-N	125/155	1310(LED)	MMF	2km	Fast Ethernet/OC3	-14 ~ -20	< -31	-40 to 85	3.3	
LM32-A5S-PC-N	125/155	1310(LED)	MMF	2km	Fast Ethernet/OC3	-14 ~ -20	< -31	0 to 70	5	
LM32-A5S-PI-N	125/155	1310(LED)	MMF	2km	Fast Ethernet/OC3	-14 ~ -20	< -31	-40 to 85	5	
LS32-A3C-PC-N	125/155	1310(FP)	SMF	15km	Fast Ethernet/OC3	0 ~ -20	< -32	0 to 70	3.3	
LS32-A3C-PI-N	125/155	1310(FP)	SMF	15km	Fast Ethernet/OC3	0 ~ -20	< -32	-40 to 85	3.3	
LS32-A5C-PC-N	125/155	1310(FP)	SMF	15km	Fast Ethernet/OC3	0 ~ -20	< -32	0 to 70	5	
LS32-A5C-PI-N	125/155	1310(FP)	SMF	15km	Fast Ethernet/OC3	0 ~ -20	< -32	-40 to 85	5	
LS32-A3S-PC-N	125/155	1310(FP)	SMF	30km	S1.1/Fast Ethernet	-8 ~ -15	< -34	0 to 70	3.3	
LS32-A3S-PI-N	125/155	1310(FP)	SMF	30km	S1.1/Fast Ethernet	-8 ~ -15	< -34	-40 to 85	3.3	
LS32-A5S-PC-N	125/155	1310(FP)	SMF	30km	S1.1/Fast Ethernet	-8 ~ -15	< -34	0 to 70	5	
LS32-A5S-PI-N	125/155	1310(FP)	SMF	30km	S1.1/Fast Ethernet	-8 ~ -15	< -34	-40 to 85	5	
LS32-A3L-PC-N	125/155	1310(FP)	SMF	60km	L1.1/Fast Ethernet	0 ~ -5	< -35	0 to 70	3.3	
LS32-A3L-PI-N	125/155	1310(FP)	SMF	60km	L1.1/Fast Ethernet	0 ~ -5	< -35	-40 to 85	3.3	
LS32-A5L-PC-N	125/155	1310(FP)	SMF	60km	L1.1/Fast Ethernet	0 ~ -5	< -35	0 to 70	5	
LS32-A5L-PI-N	125/155	1310(FP)	SMF	60km	L1.1/Fast Ethernet	0 ~ -5	< -35	-40 to 85	5	
LS32-A3U-PC-N	125/155	1310(FP)	SMF	80km	Extended L1.1	+5 ~ 0	< -36	0 to 70	3.3	
LS32-A3U-PI-N	125/155	1310(FP)	SMF	80km	Extended L1.1	+5 ~ 0	< -36	-40 to 85	3.3	
LS42-A3L-PC-N	125/155	1550(DFB)	SMF	100km	L1.2/Fast Ethernet	0 ~ -5	< -35	0 to 70	3.3	
LS42-A3L-PI-N	125/155	1550(DFB)	SMF	100km	L1.2/Fast Ethernet	0 ~ -5	< -35	-40 to 85	3.3	
LS42-A5L-PC-N	125/155	1550(DFB)	SMF	100km	L1.2/Fast Ethernet	0 ~ -5	< -35	0 to 70	5	
LS42-A5L-PI-N	125/155	1550(DFB)	SMF	100km	L1.2/Fast Ethernet	0 ~ -5	< -35	-40 to 85	5	
LS42-A3U-PC-N	125/155	1550(DFB)	SMF	120km	Extended L1.2	+5 ~ 0	< -35	0 to 70	3.3	
LS42-A3U-PI-N	125/155	1550(DFB)	SMF	120km	Extended L1.2	+5 ~ 0	< -35	-40 to 85	3.3	
LS42-A5U-PC-N	125/155	1550(DFB)	SMF	120km	Extended L1.2	+5 ~ 0	< -35	0 to 70	5	
LS42-A5U-PI-N	125/155	1550(DFB)	SMF	120km	Extended L1.2	+5 ~ 0	< -35	-40 to 85	5	

Note 1: MMF : Multi-mode Fiber, SMF : Single-mode Fiber

Note 2: Transmission distance varies with each system design, and should be considered for reference only

1x9, SC Transceiver

OC3/STM1/Fast Ethernet

Part Number Note 1	Bit Rate (Mbps)	Wavelength (nm)	Media	Reach	Application	TX Power (dBm)	RX Sens. (dBm)	Temp. Range(°C)	Voltage(V)	Note
LS32-A3L-PC-Nxx	125/155	1270 ~ 1450	SMF	31dB margin	CWDM	+3 ~ -4	<-35	0 to 70	3.3	
LS32-A5L-PC-Nxx	125/155	1270 ~ 1450	SMF	31dB margin	CWDM	+3 ~ -4	<-35	0 to 70	5	
LS42-A3L-PC-Nxx	125/155	1470 ~ 1610	SMF	31dB margin	CWDM	+3 ~ -4	<-35	0 to 70	3.3	
LS42-A5L-PC-Nxx	125/155	1470 ~ 1610	SMF	31dB margin	CWDM	+3 ~ -4	<-35	0 to 70	5	
LS32-A3U-PC-Nxx	125/155	1270 ~ 1450	SMF	35dB margin	CWDM	+5 ~ 0	<-35	0 to 70	3.3	
LS32-A5U-PC-Nxx	125/155	1270 ~ 1450	SMF	35dB margin	CWDM	+5 ~ 0	<-35	0 to 70	5	
LS42-A3U-PC-Nxx	125/155	1470 ~ 1610	SMF	35dB margin	CWDM	+5 ~ 0	<-35	0 to 70	3.3	
LS42-A5U-PC-Nxx	125/155	1470 ~ 1610	SMF	35dB margin	CWDM	+5 ~ 0	<-35	0 to 70	5	

OC12/STM4/Fast Ethernet

Part Number	Bit Rate (Mbps)	Wavelength (nm)	Media	Reach	Application	TX Power (dBm)	RX Sens. (dBm)	Temp. Range(°C)	Voltage(V)	Note
LS32-B3S-PC-N	622	1310 (FP)	SMF	20km	S4.1	-8 ~ -15	< -28	0 to 70	3.3	
LS32-B3L-PC-N	622	1310 (DFB)	SMF	50km	L4.1	+2 ~ -3	< -28	0 to 70	3.3	
LS42-B3U-PC-N	622	1550 (DFB)	SMF	80km	L4.2	+2 ~ -3	< -28	0 to 70	3.3	

GbE/1XFiber Channel

Part Number Note 1	Bit Rate (Mbps)	Wavelength (nm)	Media	Reach	Application	TX Power (dBm)	RX Sens. (dBm)	Temp. Range(°C) Note 2	Voltage(V)	Note
LM22-CAS-TC-X	1063/1250	850(VCSEL)	MMF	550m	1000BASE-SX	-4 ~ -9.5	< -18	0 to 70	3.3/5	
LS32-CAS-TC-X	1063/1250	1310(FP)	SMF	10km	1000BASE-LX	-3 ~ -9.5	<-20	0 to 70	3.3/5	
LS32-CAL-TC-X	1063/1250	1310(DFB)	SMF	30km	1000BASE-LHX	+3 ~ -4	<-23	0 to 70	3.3/5	
LS32-CAU-TC-X	1063/1250	1310(DFB)	SMF	50km	1000BASE-LHX	+5 ~ 0	<-24	0 to 70	3.3/5	
LS42-CAL-TC-X	1063/1250	1550(DFB)	SMF	50km	1000BASE-XD	+1 ~ -4	<-23	0 to 70	3.3/5	
LS42-CAU-TC-X	1063/1250	1550(DFB)	SMF	70km	1000BASE-ZX	+5 ~ 0	<-24	0 to 70	3.3/5	
LS32-CAL-TC-Xxx	1063/1250	1270 ~ 1450	SMF	20dB margin	CWDM	+1 ~ -4	<-24	0 to 70	3.3/5	
LS42-CAL-TC-Xxx	1063/1250	1470 ~ 1610	SMF	20dB margin	CWDM	+1 ~ -4	<-24	0 to 70	3.3/5	
LS32-CAU-TC-Xxx	1063/1250	1270 ~ 1450	SMF	24dB margin	CWDM	+5 ~ 0	<-24	0 to 70	3.3/5	
LS42-CAU-TC-Xxx	1063/1250	1470 ~ 1610	SMF	24dB margin	CWDM	+5 ~ 0	<-24	0 to 70	3.3/5	

Note 1: X:Choice for Clipper. N(No Clipper) / F(Forward Clipper) / B(Backward Clipper)
xx : 27 = 1270nm, xx : 29 = 1290nm, xx : 31 = 1310nm, xx : 33 = 1330nm, xx : 35 = 1350nm, xx : 37 = 1370nm
xx : 39 = 1390nm, xx : 41 = 1410nm, xx : 43 = 1430nm, xx : 45 = 1450nm, xx : 47 = 1470nm, xx : 49 = 1490nm
xx : 51 = 1510nm, xx : 53 = 1530nm, xx : 55 = 1550nm, xx : 57 = 1570nm, xx : 59 = 1590nm, xx : 61 = 1610nm
Note 2: TC/PC : Commercial temperature (0 to 70 °C) is available, Industrial temperature (TI/PI) is available except CWDM products.

1x9 ,ST Transceiver

OC3/STM1/Fast Ethernet (ST TRx)

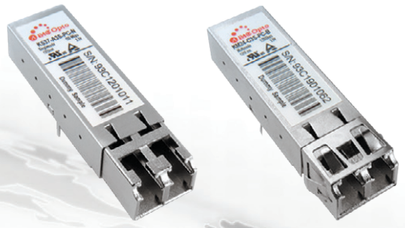
Part Number Note 1	Bit Rate (Mbps)	Wavelength (nm)	Media	Reach	Application	TX Power (dBm)	RX Sens. (dBm)	Temp. Range(°C)	Voltage(V)	Note
LM32-A3S-PC-N-ST	125/155	1310(LED)	MMF	2km	Fast Ethernet/OC3	-14 ~ -20	< -32	0 to 70	3.3	
LM32-A3S-PI-N-ST	125/155	1310(LED)	MMF	2km	Fast Ethernet/OC3	-14 ~ -20	< -32	-40 to 85	3.3	
LS32-A3S-PC-N-ST	125/155	1310(FP)	SMF	30km	S1.1/Fast Ethernet	-8 ~ -15	< -34	0 to 70	3.3	
LS32-A3S-PI-N-ST	125/155	1310(FP)	SMF	30km	S1.1/Fast Ethernet	-8 ~ -15	< -34	-40 to 85	3.3	
LS32-A3L-PC-N-ST	125/155	1310(FP)	SMF	60km	L1.1/Fast Ethernet	0 ~ -5	< -35	0 to 70	3.3	
LS32-A3L-PI-N-ST	125/155	1310(FP)	SMF	60km	L1.1/Fast Ethernet	0 ~ -5	< -35	-40 to 85	3.3	
LS32-A3U-PC-N-ST	125/155	1310(FP)	SMF	80km	L1.1/Fast Ethernet	+5 ~ 0	< -35	0 to 70	3.3	
LS42-A3L-PC-N-ST	125/155	1550(DFB)	SMF	100km	L1.2/Fast Ethernet	0 ~ -5	< -35	0 to 70	3.3	
LS42-A3L-PI-N-ST	125/155	1550(DFB)	SMF	100km	L1.2/Fast Ethernet	0 ~ -5	< -35	-40 to 85	3.3	
LS42-A3U-PC-N-ST	125/155	1550(DFB)	SMF	120km	Extended L1.2/ Fast Ethernet	+5 ~ 0	< -35	0 to 70	3.3	
LS42-A3U-PI-N-ST	125/155	1550(DFB)	SMF	120km	Extended L1.2/ Fast Ethernet	+5 ~ 0	< -35	-40 to 85	3.3	
LS32-A3L-PC-Nxx-ST	125/155	1270 ~ 1450	SMF	31dB margin	CWDM	+3 ~ -4	<-35	0 to 70	3.3	
LS42-A3L-PC-Nxx-ST	125/155	1470 ~ 1610	SMF	31dB margin	CWDM	+3 ~ -4	<-35	0 to 70	3.3	
LS32-A3U-PC-Nxx-ST	125/155	1270 ~ 1450	SMF	35dB margin	CWDM	+5 ~ 0	<-35	0 to 70	3.3	
LS42-A3U-PC-Nxx-ST	125/155	1470 ~ 1610	SMF	35dB margin	CWDM	+5 ~ 0	<-35	0 to 70	3.3	

GbE/1XFiber Channel (ST TRx)

Part Number Note 1	Bit Rate (Mbps)	Wavelength (nm)	Media	Reach	Application	TX Power (dBm)	RX Sens. (dBm)	Temp. Range(°C)	Voltage(V)	Note
LM22-CAS-TC-N-ST	1063/1250	850(VCSEL)	MMF	550m	1000BASE-SX	-4 ~ -9.5	< -18	0 to 70	3.3	
LM22-CAS-PC-N-ST	1063/1250	850(VCSEL)	MMF	550m	1000BASE-SX	-4 ~ -9.5	< -18	0 to 70	3.3	
LM22-CAS-TI-N-ST	1063/1250	850(VCSEL)	MMF	550m	1000BASE-SX	-4 ~ -9.5	< -18	-20 to 85	3.3	
LM22-CAS-PI-N-ST	1063/1250	850(VCSEL)	MMF	550m	1000BASE-SX	-4 ~ -9.5	< -18	-20 to 85	3.3	
LS32-CAS-TC-N-ST	1063/1250	1310(FP)	SMF	10km	1000BASE-LX	-3 ~ -9.5	<-20	0 to 70	3.3	
LS32-CAS-PC-N-ST	1063/1250	1310(FP)	SMF	10km	1000BASE-LX	-3 ~ -9.5	<-20	0 to 70	3.3	
LS32-CAS-TI-N-ST	1063/1250	1310(FP)	SMF	10km	1000BASE-LX	-3 ~ -9.5	<-20	-40 to 85	3.3	
LS32-CAS-PI-N-ST	1063/1250	1310(FP)	SMF	10km	1000BASE-LX	-3 ~ -9.5	<-20	-40 to 85	3.3	

Note 1: ST : ST connectors;TT:Metal ST connector (TT connector is availble for all series)

2x5, LC Transceiver



OC3/STM1/Fast Ethernet

Part Number Note 1	Bit Rate (Mbps)	Wavelength (nm)	Media	Reach	Application	TX Power (dBm)	RX Sens. (dBm)	Temp. Range(°C)	Voltage(V)	Note
LM34-A3S-PC-N	125/155	1310(LED)	MMF	2km	Fast Ethernet/OC3	-14 ~ -20	< -31	0 to 70	3.3	
LM34-A3S-PI-N	125/155	1310(LED)	MMF	2km	Fast Ethernet/OC3	-14 ~ -20	< -31	-40 to 85	3.3	
LS34-A3C-PC-N	125/155	1310(FP)	SMF	15km	Fast Ethernet/OC3	0 ~ -20	< -32	0 to 70	3.3	
LS34-A3C-PI-N	125/155	1310(FP)	SMF	15km	Fast Ethernet/OC3	0 ~ -20	< -32	-40 to 85	3.3	
LS34-A3S-PC-N	125/155	1310(FP)	SMF	30km	S1.1/Fast Ethernet	-8 ~ -15	< -34	0 to 70	3.3	
LS34-A3S-PI-N	125/155	1310(FP)	SMF	30km	S1.1/Fast Ethernet	-8 ~ -15	< -34	-40 to 85	3.3	
LS34-A3L-PC-N	125/155	1310(FP)	SMF	60km	L1.1/Fast Ethernet	0 ~ -5	< -35	0 to 70	3.3	
LS34-A3L-PI-N	125/155	1310(FP)	SMF	60km	L1.1/Fast Ethernet	0 ~ -5	< -35	-40 to 85	3.3	
LS44-A3L-PC-N	125/155	1550(DFB)	SMF	100km	L1.2/Fast Ethernet	0 ~ -5	< -35	0 to 70	3.3	
LS44-A3L-PI-N	125/155	1550(DFB)	SMF	100km	L1.2/Fast Ethernet	0 ~ -5	< -35	-40 to 85	3.3	
LS44-A3U-PC-N	125/155	1550(DFB)	SMF	120km	Extended L1.2	+5 ~ 0	< -35	0 to 70	3.3	
LS44-A3U-PI-N	125/155	1550(DFB)	SMF	120km	Extended L1.2	+5 ~ 0	< -35	-40 to 85	3.3	
LS34-A3L-PC-Nxx	125/155	1270 ~ 1450	SMF	31dB margin	CWDM	+3 ~ -4	<-35	0 to 70	3.3	
LS44-A3L-PC-Nxx	125/155	1470 ~ 1610	SMF	31dB margin	CWDM	+3 ~ -4	<-35	0 to 70	3.3	
LS34-A3U-PC-Nxx	125/155	1270 ~ 1450	SMF	35dB margin	CWDM	+5 ~ 0	<-35	0 to 70	3.3	
LS44-A3U-PC-Nxx	125/155	1470 ~ 1610	SMF	35dB margin	CWDM	+5 ~ 0	<-35	0 to 70	3.3	

GbE/1X Fiber Channel

Part Number Note 1	Bit Rate (Mbps)	Wavelength (nm)	Media	Reach	Application	TX Power (dBm)	RX Sens. (dBm)	Temp. Range(°C)	Voltage(V)	Note
LM24-C3S-TC-B	1063/1250	850(VCSEL)	MMF	550m	1000BASE-SX	-4 ~ -9.5	< -18	0 to 70	3.3	
LM24-C3S-TI-B	1063/1250	850(VCSEL)	MMF	550m	1000BASE-SX	-4 ~ -9.5	< -18	-10 to 85	3.3	
LM24-C3S-PC-B	1063/1250	850(VCSEL)	MMF	550m	1000BASE-SX	-4 ~ -9.5	< -18	0 to 70	3.3	
LM24-C3S-PI-B	1063/1250	850(VCSEL)	MMF	550m	1000BASE-SX	-4 ~ -9.5	< -18	-20 to 85	3.3	
LS34-C3S-TC-B	1063/1250	1310(FP)	SMF	10km	1000BASE-LX	-3 ~ -9.5	<-20	0 to 70	3.3	
LS34-C3S-TI-B	1063/1250	1310(FP)	SMF	10km	1000BASE-LX	-3 ~ -9.5	<-20	-40 to 85	3.3	
LS34-C3S-PC-B	1063/1250	1310(FP)	SMF	10km	1000BASE-LX	-3 ~ -9.5	<-20	0 to 70	3.3	
LS34-C3S-PI-B	1063/1250	1310(FP)	SMF	10km	1000BASE-LX	-3 ~ -9.5	<-20	-40 to 85	3.3	
LS44-C3L-TC-B	1063/1250	1550(DFB)	SMF	50km	1000BASE-XD	+1 ~ -4	<-24	0 to 70	3.3	
LS44-C3L-TI-B	1063/1250	1550(DFB)	SMF	50km	1000BASE-XD	+1 ~ -4	<-24	-40 to 85	3.3	
LS44-C3L-PC-B	1063/1250	1550(DFB)	SMF	50km	1000BASE-XD	+1 ~ -4	<-24	0 to 70	3.3	
LS44-C3L-PI-B	1063/1250	1550(DFB)	SMF	50km	1000BASE-XD	+1 ~ -4	<-24	-40 to 85	3.3	
LS44-C3U-TC-B	1063/1250	1550(DFB)	SMF	70km	1000BASE-ZX	+5 ~ 0	<-24	0 to 70	3.3	
LS44-C3U-TI-B	1063/1250	1550(DFB)	SMF	70km	1000BASE-ZX	+5 ~ 0	<-24	-40 to 85	3.3	
LS44-C3U-PC-B	1063/1250	1550(DFB)	SMF	70km	1000BASE-ZX	+5 ~ 0	<-24	0 to 70	3.3	
LS44-C3U-PI-B	1063/1250	1550(DFB)	SMF	70km	1000BASE-ZX	+5 ~ 0	<-24	-40 to 85	3.3	
LS34-C3L-TC-Bxx	1063/1250	1270 ~ 1450	SMF	20dB margin	CWDM	+1 ~ -4	<-24	0 to 70	3.3	2
LS44-C3L-TC-Bxx	1063/1250	1470 ~ 1610	SMF	20dB margin	CWDM	+1 ~ -4	<-24	0 to 70	3.3	2
LS34-C3U-TC-Bxx	1063/1250	1270 ~ 1450	SMF	24dB margin	CWDM	+5 ~ 0	<-24	0 to 70	3.3	2
LS44-C3U-TC-Bxx	1063/1250	1470 ~ 1610	SMF	24dB margin	CWDM	+5 ~ 0	<-24	0 to 70	3.3	2

Note 1: N : No Clipper, B : Backward Clipper
xx : 27 = 1270nm, xx : 29 = 1290nm, xx : 31 = 1310nm, xx : 33 = 1330nm, xx : 35 = 1350nm, xx : 37 = 1370nm
xx : 39 = 1390nm, xx : 41 = 1410nm, xx : 43 = 1430nm, xx : 45 = 1450nm, xx : 47 = 1470nm, xx : 49 = 1490nm
xx : 51 = 1510nm, xx : 53 = 1530nm, xx : 55 = 1550nm, xx : 57 = 1570nm, xx : 59 = 1590nm, xx : 61 = 1610nm
Note 2: PC : Commercial temperature (0 to 70°C) is available.

Small Form Pluggable Transceiver (SFP)

OC3/STM1/Fast Ethernet

Part Number Note 1	Bit Rate (Mbps)	Wavelength (nm)	Media	Reach	Application	TX Power (dBm)	RX Sens. (dBm)	Temp. Range(°C)	Voltage(V)	Note
LM28-A3S-TC-N-DD	125	850(VCSEL)	MMF	2km	Fast Ethernet	-4 ~ -10	< -24	0 to 70	3.3	
LM28-A3S-TI-N-DD	125	850(VCSEL)	MMF	2km	Fast Ethernet	-4 ~ -10	< -24	-20 to 85	3.3	
LM28-A3S-TI-N-DR	125	850(VCSEL)	MMF	2km	Fast Ethernet	-4 ~ -10	< -24	-40 to 85	3.3	
LM38-A3S-TC-N	125/155	1310(LED)	MMF	2km	Fast Ethernet/OC3	-14 ~ -20	< -31	0 to 70	3.3	
LM38-A3S-TI-N	125/155	1310(LED)	MMF	2km	Fast Ethernet/OC3	-14 ~ -20	< -31	-40 to 85	3.3	
LM38-A3C-TC-N-DD	125/155	1310(FP)	MMF	2km	Fast Ethernet/OC3, Low power consumption	-14 ~ -20	< -31	0 to 70	3.3	
LM38-A3C-TI-N-DD	125/155	1310(FP)	MMF	2km	Fast Ethernet/OC3, Low power consumption	-14 ~ -20	< -31	-40 to 85	3.3	
LS38-A3S-TC-N-DD	125/155	1310(FP)	SMF	30km	S1.1/Fast Ethernet	-8 ~ -15	< -34	0 to 70	3.3	
LS38-A3S-TI-N-DD	125/155	1310(FP)	SMF	30km	S1.1/Fast Ethernet	-8 ~ -15	< -34	-40 to 85	3.3	
LS38-A3L-TC-N-DD	125/155	1310(FP)	SMF	60km	L1.1/Fast Ethernet	0 ~ -5	< -35	0 to 70	3.3	
LS38-A3L-TI-N-DD	125/155	1310(FP)	SMF	60km	L1.1/Fast Ethernet	0 ~ -5	< -35	-40 to 85	3.3	
LS48-A3L-TC-N-DD	125/155	1550(DFB)	SMF	100km	L1.2/Fast Ethernet	0 ~ -5	< -35	0 to 70	3.3	
LS48-A3L-TI-N-DD	125/155	1550(DFB)	SMF	100km	L1.2/Fast Ethernet	0 ~ -5	< -35	-40 to 85	3.3	
LS48-A3U-TC-N-DD	125/155	1550(DFB)	SMF	120km	Extended L1.2	+5 ~ 0	< -35	0 to 70	3.3	
LS48-A3U-TI-N-DD	125/155	1550(DFB)	SMF	120km	Extended L1.2	+5 ~ 0	< -35	-40 to 85	3.3	
LS48-A3U-TC-N-DX	125/155	1550(DFB)	SMF	145km	Extended L1.2	+5 ~ +0.5	< -37.5	0 to 70	3.3	
LS48-A3U-TI-N-DX	125/155	1550(DFB)	SMF	145km	Extended L1.2	+5 ~ +0.5	< -37.5	-40 to 85	3.3	
LS38-A3L-TC-Nxx-DD	125/155	1270 ~ 1450	SMF	31dB margin	CWDM	+3 ~ -4	<-35	0 to 70	3.3	
LS48-A3L-TC-Nxx-DD	125/155	1470 ~ 1610	SMF	31dB margin	CWDM	+3 ~ -4	<-35	0 to 70	3.3	
LS38-A3U-TC-Nxx-DD	125/155	1270 ~ 1450	SMF	35dB margin	CWDM	+5 ~ 0	<-35	0 to 70	3.3	
LS48-A3U-TC-Nxx-DD	125/155	1470 ~ 1610	SMF	35dB margin	CWDM	+5 ~ 0	<-35	0 to 70	3.3	

OC12/STM4/622Mbps

Part Number	Bit Rate (Mbps)	Wavelength (nm)	Media	Reach	Application	TX Power (dBm)	RX Sens. (dBm)	Temp. Range(°C)	Voltage(V)	Note
LS38-B3S-TC-N-DD	622	1310(FP)	SMF	20km	S4.1	-8 ~ -15	< -28	0 to 70	3.3	
LS38-B3S-TI-N-DD	622	1310(FP)	SMF	20km	S4.1	-8 ~ -15	< -28	-40 to 85	3.3	
LS38-B3L-TC-N-DD	622	1310(DFB)	SMF	50km	L4.1	+2 ~ -3	< -28	0 to 70	3.3	
LS38-B3L-TI-N-DD	622	1310(DFB)	SMF	50km	L4.1	+2 ~ -3	< -28	-40 to 85	3.3	
LS48-B3L-TC-N-DD	622	1550(DFB)	SMF	80km	L4.2	+2 ~ -3	< -28	0 to 70	3.3	
LS48-B3L-TI-N-DD	622	1550(DFB)	SMF	80km	L4.2	+2 ~ -3	< -28	-40 to 85	3.3	

Note 1: xx : 27 = 1270nm, xx : 29 = 1290nm, xx : 31 = 1310nm, xx : 33 = 1330nm, xx : 35 = 1350nm, xx : 37 = 1370nm
xx : 39 = 1390nm, xx : 41 = 1410nm, xx : 43 = 1430nm, xx : 45 = 1450nm, xx : 47 = 1470nm, xx : 49 = 1490nm
xx : 51 = 1510nm, xx : 53 = 1530nm, xx : 55 = 1550nm, xx : 57 = 1570nm, xx : 59 = 1590nm, xx : 61 = 1610nm

Small Form Pluggable Transceiver (SFP)

GbE/1X Fiber Channel

Part Number Note 1	Bit Rate (Mbps)	Wavelength (nm)	Media	Reach	Application	TX Power (dBm)	RX Sens. (dBm)	Temp. Range(°C)	Voltage(V)	Note
LM28-C3S-TC-N-DD	1063/1250	850(VCSEL)	MMF	550m	1000BASE-SX	-4 ~ -9.5	< -18	0 to 70	3.3	
LM28-C3S-TI-N-DD	1063/1250	850(VCSEL)	MMF	550m	1000BASE-SX	-4 ~ -9.5	< -18	-20 to 85	3.3	
LM28-C3S-TI-N-DA	1063/1250	850(VCSEL)	MMF	550m	1000BASE-SX	-4 ~ -9.5	< -18	-40 to 85	3.3	
LM38-C3S-TC-N-DD	1063/1250	1310(FP)	MMF	2km	1000BASE-SX+	-1 ~ -9	<-19	0 to 70	3.3	
LM38-C3S-TI-N-DD	1063/1250	1310(FP)	MMF	2km	1000BASE-SX+	-1 ~ -9	<-19	-40 to 85	3.3	
LS38-C3S-TC-N-DD	1063/1250	1310(FP)	SMF	10km	1000BASE-LX	-3 ~ -9.5	<-20	0 to 70	3.3	
LS38-C3S-TI-N-DD	1063/1250	1310(FP)	SMF	10km	1000BASE-LX	-3 ~ -9.5	<-20	-40 to 85	3.3	
LS38-C3L-TC-N-DD	1063/1250	1310(DFB)	SMF	30km	1000BASE-LHX	+1 ~ -4	<-24	0 to 70	3.3	
LS38-C3L-TI-N-DD	1063/1250	1310(DFB)	SMF	30km	1000BASE-LHX	+1 ~ -4	<-24	-40 to 85	3.3	
LS48-C3S-TC-N-DD	1063/1250	1550(DFB)	SMF	30km	1000BASE-LX	-3 ~ -9	<-21	0 to 70	3.3	
LS48-C3S-TI-N-DD	1063/1250	1550(DFB)	SMF	30km	1000BASE-LX	-3 ~ -9	<-21	-40 to 85	3.3	
LS48-C3L-TC-N-DD	1063/1250	1550(DFB)	SMF	50km	1000BASE-XD	+1 ~ -4	<-24	0 to 70	3.3	
LS48-C3L-TI-N-DD	1063/1250	1550(DFB)	SMF	50km	1000BASE-XD	+1 ~ -4	<-24	-40 to 85	3.3	
LS48-C3U-TC-N-DD	1063/1250	1550(DFB)	SMF	70km	1000BASE-ZX	+5 ~ 0	<-24	0 to 70	3.3	
LS48-C3U-TI-N-DD	1063/1250	1550(DFB)	SMF	70km	1000BASE-ZX	+5 ~ 0	<-24	-40 to 85	3.3	
LS48-C3U-TC-N-DY	1063/1250	1550(DFB)	SMF	90km	1000BASE-EZX	+5 ~ 0	<-27	0 to 70	3.3	
LS48-C3U-TI-N-DY	1063/1250	1550(DFB)	SMF	90km	1000BASE-EZX	+5 ~ 0	<-27	-40 to 85	3.3	
LS48-C3U-TC-N-DZ	1063/1250	1550(DFB)	SMF	110km	1000BASE-EZX	+5 ~ 0	<-30	0 to 70	3.3	
LS48-C3U-TI-N-DZ	1063/1250	1550(DFB)	SMF	110km	1000BASE-EZX	+5 ~ 0	<-30	-40 to 85	3.3	
LS48-C3U-TC-N-DU	1063/1250	1550(DFB)	SMF	120km	1000BASE-EZX	+5 ~ 0	<-32	0 to 70	3.3	
LS48-C3U-TI-N-DU	1063/1250	1550(DFB)	SMF	120km	1000BASE-EZX	+5 ~ 0	<-32	-40 to 85	3.3	
LS38-C3L-TC-Nxx-DD	1063/1250	1270 ~ 1450	SMF	20dB margin	CWDM	+1 ~ -4	<-24	0 to 70	3.3	
LS48-C3L-TC-Nxx-DD	1063/1250	1470 ~ 1610	SMF	20dB margin	CWDM	+1 ~ -4	<-24	0 to 70	3.3	
LS38-C3U-TC-Nxx-DD	1063/1250	1270 ~ 1450	SMF	24dB margin	CWDM	+5 ~ 0	<-24	0 to 70	3.3	
LS48-C3U-TC-Nxx-DD	1063/1250	1470 ~ 1610	SMF	24dB margin	CWDM	+5 ~ 0	<-24	0 to 70	3.3	
LS38-C3U-TC-Nxx-DY	1063/1250	1270 ~ 1450	SMF	27dB margin	CWDM	+5 ~ 0	<-27	0 to 70	3.3	
LS48-C3U-TC-Nxx-DY	1063/1250	1470 ~ 1610	SMF	27dB margin	CWDM	+5 ~ 0	<-27	0 to 70	3.3	
LS38-C3U-TC-Nxx-DZ	1063/1250	1270 ~ 1450	SMF	30dB margin	CWDM	+5 ~ 0	<-30	0 to 70	3.3	
LS48-C3U-TC-Nxx-DZ	1063/1250	1470 ~ 1610	SMF	30dB margin	CWDM	+5 ~ 0	<-30	0 to 70	3.3	
LS38-C3U-TC-Nxx-DU	1063/1250	1270 ~ 1450	SMF	32dB margin	CWDM	+5 ~ 0	<-32	0 to 70	3.3	
LS48-C3U-TC-Nxx-DU	1063/1250	1470 ~ 1610	SMF	32dB margin	CWDM	+5 ~ 0	<-32	0 to 70	3.3	

Note 1: xx : 27 = 1270nm, xx : 29 = 1290nm, xx : 31 = 1310nm, xx : 33 = 1330nm, xx : 35 = 1350nm, xx : 37 = 1370nm
xx : 39 = 1390nm, xx : 41 = 1410nm, xx : 43 = 1430nm, xx : 45 = 1450nm, xx : 47 = 1470nm, xx : 49 = 1490nm
xx : 51 = 1510nm, xx : 53 = 1530nm, xx : 55 = 1550nm, xx : 57 = 1570nm, xx : 59 = 1590nm, xx : 61 = 1610nm

Small Form Pluggable Transceiver (SFP)

2.5G

Part Number Note 1	Bit Rate (Mbps)	Wavelength (nm)	Media	Reach	Application	TX Power (dBm)	RX Sens. (dBm)	Temp. Range(°C)	Voltage(V)	Note
LS38-E3C-TC-N-DD	2488	1310(FP)	SMF	5km	I-16	-3 ~ -9	< -20	0 to 70	3.3	
LS38-E3C-TI-N-DD	2488	1310(FP)	SMF	5km	I-16	-3 ~ -9	< -20	-40 to 85	3.3	
LS38-E3S-TC-N-DD	2488	1310(DFB)	SMF	20km	S16.1	0 ~ -5	< -20	0 to 70	3.3	
LS38-E3S-TI-N-DD	2488	1310(DFB)	SMF	20km	S16.1	0 ~ -5	< -20	-40 to 85	3.3	
LS38-E3L-TC-N-DD	2488	1310(DFB)	SMF	50km	L16.1	+3 ~ -2	< -28	0 to 70	3.3	
LS38-E3L-TI-N-DD	2488	1310(DFB)	SMF	50km	L16.1	+3 ~ -2	< -28	-40 to 85	3.3	
LS48-E3U-TC-N-DD	2488	1550(DFB)	SMF	80km	L16.2	+3 ~ -2	< -28	0 to 70	3.3	
LS48-E3U-TI-N-DD	2488	1550(DFB)	SMF	80km	L16.2	+3 ~ -2	< -28	-40 to 85	3.3	
LS48-E3U-TC-N-DC	2488	1550(DFB)	SMF	80km	Extended L16.2	+5 ~ 0	< -30	0 to 70	3.3	
LS48-E3U-TI-N-DC	2488	1550(DFB)	SMF	80km	Extended L16.2	+5 ~ 0	< -30	-40 to 85	3.3	
LS38-E3U-TC-Nxx-DD	2488	1270 ~ 1450	SMF	26dB margin	CWDM	+3 ~ -2	< -28	0 to 70	3.3	
LS48-E3U-TC-Nxx-DD	2488	1470 ~ 1610	SMF	26dB margin	CWDM	+3 ~ -2	< -28	0 to 70	3.3	
LS38-E3U-TC-Nxx-DC	2488	1270 ~ 1450	SMF	30dB margin	CWDM	+5 ~ 0	< -30	0 to 70	3.3	
LS48-E3U-TC-Nxx-DC	2488	1470 ~ 1610	SMF	30dB margin	CWDM	+5 ~ 0	< -30	0 to 70	3.3	

4G Fiber Channel

Part Number	Bit Rate (Mbps)	Wavelength (nm)	Media	Reach	Application	TX Power (dBm)	RX Sens. (dBm)	Temp. Range(°C)	Voltage(V)	Note
LM28-F3S-TC-N	4250	850(VCSEL)	MMF	150m	1X,2X,4X Fiber channel, 1000BASE-SX	-3 ~ -9	< -15	-10 to 70	3.3	
LM28-F3S-TI-N	4250	850(VCSEL)	MMF	150m	1X,2X,4X Fiber channel, 1000BASE-SX	-3 ~ -9	< -15	-20 to 85	3.3	
LM28-F3S-TI-N-EX	4250	850(VCSEL)	MMF	150m	1X,2X,4X Fiber channel, 1000BASE-SX	-3 ~ -9	< -15	-40 to 85	3.3	

Note 1: xx : 27 = 1270nm, xx : 29 = 1290nm, xx : 31 = 1310nm, xx : 33 = 1330nm, xx : 35 = 1350nm, xx : 37 = 1370nm
xx : 39 = 1390nm, xx : 41 = 1410nm, xx : 43 = 1430nm, xx : 45 = 1450nm, xx : 47 = 1470nm, xx : 49 = 1490nm
xx : 51 = 1510nm, xx : 53 = 1530nm, xx : 55 = 1550nm, xx : 57 = 1570nm, xx : 59 = 1590nm, xx : 61 = 1610nm

Small Form Pluggable Transceiver (SFP+)

SFP+ Transceiver

Part Number	Bit Rate (Gbps)	Wavelength (nm)	Media	Reach	Application	TX Power (dBm)	RX Sens. (dBm)	Temp. Range(°C)	Voltage(V)	Note
LE28-H3S-TC-N	9.95~10.5	850	MMF	33m(OM1) 82m(OM2) 300m(OM3)	10GBASE-SR/SW Fiber Channel 10G	-1 ~ -7.1	< -9.9	-10 to 70	3.3	
LE28-H3S-TK-N	9.95~10.5	850	MMF	33m(OM1) 82m(OM2) 300m(OM3)	10GBASE-SR/SW Fiber Channel 10G	-1 ~ -7.1	< -9.9	-10 to 85	3.3	
LE38-H3S-TC-N	9.95~11.3	1310	SMF	10km	10GBASE-LR/LW Fiber Channel 10G SONET OC-192 SR-1 SDH STM I-64.1	+0.5 ~ -6	< -14.4	-10 to 70	3.3	
LE38-H3S-TI-N	9.95~11.3	1310	SMF	10km	10GBASE-LR/LW Fiber Channel 10G SONET OC-192 SR-1 SDH STM I-64.1	+0.5 ~ -6	< -14.4	-40 to 85	3.3	
LE48-H3L-TC-N	10.3125	1550	SMF	40km	10GBASE-ER/EW	+4 ~ -4.7	< -15.8	0 to 70	3.3	
LE48-H3L-TI-N	10.3125	1550	SMF	40km	10GBASE-ER/EW	+4 ~ -4.7	< -15.8	-40 to 85	3.3	
LE48-H3U-TC-N	10.3125	1550	SMF	80km	10GBASE-ZR/ZW	+4 ~ 0	< -23	0 to 70	3.3	
LE48-H3U-TI-N	10.3125	1550	SMF	80km	10GBASE-ZR/ZW	+4 ~ 0	< -23	-40 to 85	3.3	
LE48-H3L-TC-NC-xx	10.3125	1470~1610	SMF	40km	CWDM	+4 ~ -4.7	< -15.8	0 to 70	3.3	1
LE48-H3L-TI-NC-xx	10.3125	1470~1610	SMF	40km	CWDM	+4 ~ -4.7	< -15.8	-40 to 85	3.3	1
LE48-H3U-TC-NC-xx	10.3125	1470~1610	SMF	70km	CWDM	+4 ~ 0	< -23	0 to 70	3.3	1
LE48-H3U-TI-NC-xx	10.3125	1470~1610	SMF	70km	CWDM	+4 ~ 0	< -23	-40 to 85	3.3	1
LE48-H3L-TC-ND-xx	10.3125	100Ghz ITU-T channel	SMF	40km	DWDM	+4 ~ -4.7	< -15.8	0 to 70	3.3	2
LE48-H3L-TI-ND-xx	10.3125	100Ghz ITU-T channel	SMF	40km	DWDM	+4 ~ -4.7	< -15.8	-40 to 85	3.3	2
LE48-H3U-TC-ND-xx	10.3125	100Ghz ITU-T channel	SMF	80km	DWDM	+3 ~ -1	< -24	0 to 70	3.3	2
LE48-H3U-TI-ND-xx	10.3125	100Ghz ITU-T channel	SMF	80km	DWDM	+3 ~ -1	< -24	-40 to 85	3.3	2

Note 1: xx : 27 = 1270nm, xx : 29 = 1290nm, xx : 31 = 1310nm, xx : 33 = 1330nm, xx : 35 = 1350nm, xx : 37 = 1370nm
xx : 39 = 1390nm, xx : 41 = 1410nm, xx : 43 = 1430nm, xx : 45 = 1450nm, xx : 47 = 1470nm, xx : 49 = 1490nm
xx : 51 = 1510nm, xx : 53 = 1530nm, xx : 55 = 1550nm, xx : 57 = 1570nm, xx : 59 = 1590nm, xx : 61 = 1610nm
Note 2: xx : 100GHz ITU-T channel xx :01=191.7THz=1563.86nm, xx:02=191.8THz=1563.05nm, xx:03=191.9THz=1562.23nm, xx:04=192.0THz=1561.42nm
xx:05=192.1THz=1560.61nm, xx:06=192.2THz=1559.79nm, xx:07=192.3THz=1558.98nm, xx:08=192.4THz=1558.17nm, xx:09=192.5THz=1557.36nm
xx:0A=192.6THz=1556.55nm, xx:0B=192.7THz=1555.75nm, xx:0C=192.8THz=1554.94nm, xx:0D=192.9THz=1554.13nm, xx:0E=193.0THz=1553.33nm
xx:0F=193.1THz=1552.52nm, xx:0G=193.2THz=1551.72nm, xx:0H=193.3THz=1550.92nm, xx:0I=193.4THz=1550.12nm, xx:0J=193.5THz=1549.32nm
xx:0K=193.6THz=1548.51nm, xx:0L=193.7THz=1547.72nm, xx:0M=193.8THz=1546.92nm, xx:0N=193.9THz=1546.12nm, xx:0O=194.0THz=1545.32nm
xx:0P=194.1THz=1544.53nm, xx:0Q=194.2THz=1543.73nm, xx:0R=194.3THz=1542.94nm, xx:0S=194.4THz=1542.14nm, xx:0T=194.5THz=1541.35nm
xx:0U=194.6THz=1540.56nm, xx:0V=194.7THz=1539.77nm, xx:0W=194.8THz=1538.98nm, xx:0X=194.9THz=1538.19nm, xx:0Y=195.0THz=1537.40nm
xx:0Z=195.1THz=1536.61nm, xx:10=195.2THz=1535.82nm, xx:11=195.3THz=1535.04nm, xx:12=195.4THz=1534.25nm, xx:13=195.5THz=1533.47nm
xx:14=195.6THz=1532.68nm, xx:15=195.7THz=1531.90nm, xx:16=195.8THz=1531.12nm, xx:17=195.9THz=1530.33nm, xx:18=196.0THz=1529.55nm
xx:19=196.1THz=1528.77nm

10G XFP Pluggable Transceiver

10GbE XFP

Part Number	Bit Rate (Gbps)	Wavelength (nm)	Media	Reach	Application	TX Power (dBm)	RX Sens. (dBm)	Temp. Range(°C)	Voltage (V)	Note
LM27-H3S-TC-N	9.95~11.3	850	MMF	33m(OM1) 82m(OM2) 300m(OM3)	10GFC 10GBASE-SR/SW	-1 ~ -7.1	< -9.9	-10 to 70	3.3	
LM27-H3S-TI-N	9.95~11.3	850	MMF	33m(OM1) 82m(OM2) 300m(OM3)	10GFC 10GBASE-SR/SW	-1 ~ -7.1	< -9.9	-10 to 85	3.3	
LS37-H3S-TC-N	9.95~11.3	1310	SMF	10km	10GFC 10GBASE-LR/LW	+0.5 ~ -6	< -14.4	0 to 70	3.3	
LS37-H3S-TI-N	9.95~11.3	1310	SMF	10km	10GFC 10GBASE-LR/LW	+0.5 ~ -6	< -14.4	-25 to 85	3.3	
LS37-H3S-TJ-N	9.95~11.3	1310	SMF	10km	10GFC 10GBASE-LR/LW	+0.5 ~ -6	< -14.4	-40 to 85	3.3	
LS37-H3S-TC-N-SS	9.95~11.3	1310	SMF	10km	10GFC 10GBASE-LR/LW SONET/SDH ITU-T G.709	-1 ~ -6	< -14.4	0 to 70	3.3	
LS37-H3S-TI-N-SS	9.95~11.3	1310	SMF	10km	10GFC 10GBASE-LR/LW SONET/SDH ITU-T G.709	-1 ~ -6	< -14.4	-25 to 85	3.3	
LS47-H3L-TC-N	9.95~11.3	1550	SMF	40km	10GFC 10GBASE-ER/EW SONET/SDH ITU-T G.709	+2 ~ -1	< -16	0 to 70	3.3,5	
LS47-H3L-TI-N	9.95~11.3	1550	SMF	40km	10GFC 10GBASE-ER/EW SONET/SDH ITU-T G.709	+2 ~ -1	< -16	-40 to 85	3.3,5	
LS47-H3U-TC-N	9.95~11.3	1550	SMF	80km	10GFC 10GBASE-ZR/ZW SONET/SDH ITU-T G.709	+4 ~ 0	< -23	0 to 70	3.3,5	
LS47-H3U-TI-N	9.95~11.3	1550	SMF	80km	10GFC 10GBASE-ZR/ZW SONET/SDH ITU-T G.709	+4 ~ 0	< -23	-40 to 85	3.3,5	
LS47-H3L-TC-Nxx	9.95~11.3	CWDM 1470~1610	SMF	40km	10GFC 10GBASE-ER/EW SONET/SDH ITU-T G.709	+2 ~ -1	< -16	-5 to 70	3.3,5	1
LS47-H3L-TI-Nxx	9.95~11.3	CWDM 1470~1610	SMF	40km	10GFC 10GBASE-ER/EW SONET/SDH ITU-T G.709	+2 ~ -1	< -16	-40 to 85	3.3,5	1
LS47-H3U-TC-Nxx	9.95~11.3	CWDM 1470~1610	SMF	70km	10GFC 10GBASE-ZR/ZW SONET/SDH ITU-T G.709	+4 ~ 0	< -23	-5 to 70	3.3,5	1
LS47-H3U-TI-Nxx	9.95~11.3	CWDM 1470~1610	SMF	70km	10GFC 10GBASE-ZR/ZW SONET/SDH ITU-T G.709	+4 ~ 0	< -23	-40 to 85	3.3,5	1
LS47-H3L-TC-NDxx	9.95~11.3	DWDM 100GHz	SMF	15 dB margin	10GFC 10GBASE-ER/EW 10G SONET/SDH	+2 ~ -1	< -16	-5 to 70	3.3,5	2
LS47-H3U-TC-NDxx	9.95~11.3	DWDM 100GHz	SMF	23 dB margin	10GFC 10GBASE-ZR/ZW 10G SONET/SDH	+4 ~ 0	< -23	0 to 70	3.3,5	2
LS47-H3U-TI-NDxx	9.95~11.3	DWDM 100GHz	SMF	23 dB margin	10GFC 10GBASE-ZR/ZW 10G SONET/SDH	+4 ~ 0	< -23	-40 to 85	3.3,5	2

Note 1: xx : 47 = 1470nm, xx : 49 = 1490nm,xx : 51 = 1510nm, xx : 53 = 1530nm, xx : 55 = 1550nm, xx : 57 = 1570nm, xx : 59 = 1590nm, xx : 61 = 1610nm
Note 2: xx : 100GHz ITU-T channel xx :01=191.7THz=1563.86nm, xx:02=191.8THz=1563.05nm, xx:03=191.9THz=1562.23nm, xx:04=192.0THz=1561.42nm
xx:05=192.1THz=1560.61nm, xx:06=192.2THz=1559.79nm, xx:07=192.3THz=1558.98nm, xx:08=192.4THz=1558.17nm, xx:09=192.5THz=1557.36nm
xx:0A=192.6THz=1556.55nm, xx:0B=192.7THz=1555.75nm, xx:0C=192.8THz=1554.94nm, xx:0D=192.9THz=1554.13nm, xx:0E=193.0THz=1553.33nm
xx:0F=193.1THz=1552.52nm, xx:0G=193.2THz=1551.72nm, xx:0H=193.3THz=1550.92nm, xx:0I=193.4THz=1550.12nm, xx:0J=193.5THz=1549.32nm
xx:0K=193.6THz=1548.51nm, xx:0L=193.7THz=1547.72nm, xx:0M=193.8THz=1546.92nm, xx:0N=193.9THz=1546.12nm, xx:0O=194.0THz=1545.32nm
xx:0P=194.1THz=1544.53nm, xx:0Q=194.2THz=1543.73nm, xx:0R=194.3THz=1542.94nm, xx:0S=194.4THz=1542.14nm, xx:0T=194.5THz=1541.35nm
xx:0U=194.6THz=1540.56nm, xx:0V=194.7THz=1539.77nm, xx:0W=194.8THz=1538.98nm, xx:0X=194.9THz=1538.19nm, xx:0Y=195.0THz=1537.40nm
xx:0Z=195.1THz=1536.61nm, xx:10=195.2THz=1535.82nm, xx:11=195.3THz=1535.04nm, xx:12=195.4THz=1534.25nm, xx:13=195.5THz=1533.47nm
xx:14=195.6THz=1532.68nm, xx:15=195.7THz=1531.90nm, xx:16=195.8THz=1531.12nm, xx:17=195.9THz=1530.33nm, xx:18=196.0THz=1529.55nm
xx:19=196.1THz=1528.77nm

WDM Bi-Directional 1x9 Transceiver

OC3/STM1/Fast Ethernet (Receptacle Type)

Part Number	Bit Rate (Mbps)	Wavelength (nm)	Media	Reach	Application	TX Power (dBm)	RX Sens. (dBm)	Temp. Range(°C)	Voltage (V)	Note
LSB2-A3S-PC-N3-MM	125/155	TX1310/RX1550	MMF	2km	Fast Ethernet	0 ~ -10	< -28	0 to 70	3.3	
LSB2-A3S-PI-N3-MM	125/155	TX1310/RX1550	MMF	2km	Fast Ethernet	0 ~ -10	< -28	-40 to 85	3.3	
LSB2-A3S-PC-N5-MM	125/155	TX1550/RX1310	MMF	2km	Fast Ethernet	0 ~ -10	< -28	0 to 70	3.3	
LSB2-A3S-PI-N5-MM	125/155	TX1550/RX1310	MMF	2km	Fast Ethernet	0 ~ -10	< -28	-40 to 85	3.3	
LSB2-A3S-PC-N3	125/155	TX1310/RX1550	SMF	15km	S1.1/Fast Ethernet	-8 ~ -14	< -31	0 to 70	3.3	
LSB2-A3S-PI-N3	125/155	TX1310/RX1550	SMF	15km	S1.1/Fast Ethernet	-8 ~ -14	< -31	-40 to 85	3.3	
LSB2-A3S-PC-N5	125/155	TX1550/RX1310	SMF	15km	S1.2/Fast Ethernet	-8 ~ -14	< -31	0 to 70	3.3	
LSB2-A3S-PI-N5	125/155	TX1550/RX1310	SMF	15km	S1.2/Fast Ethernet	-8 ~ -14	< -31	-40 to 85	3.3	
LSB2-A3M-PC-N3-SA	125/155	TX1310/RX1550	SMF	25km	class A/Fast Ethernet	-3 ~ -9	< -31	0 to 70	3.3	
LSB2-A3M-PI-N3-SA	125/155	TX1310/RX1550	SMF	25km	class A/Fast Ethernet	-3 ~ -9	< -31	-40 to 85	3.3	
LSB2-A3M-PC-N5-SA	125/155	TX1550/RX1310	SMF	25km	class A/Fast Ethernet	-3 ~ -9	< -31	0 to 70	3.3	
LSB2-A3M-PI-N5-SA	125/155	TX1550/RX1310	SMF	25km	class A/Fast Ethernet	-3 ~ -9	< -31	-40 to 85	3.3	
LSB2-A3L-PC-N3	125/155	TX1310/RX1550	SMF	40km	Fast Ethernet	0 ~ -8	< -34	0 to 70	3.3	
LSB2-A3L-PI-N3	125/155	TX1310/RX1550	SMF	40km	Fast Ethernet	0 ~ -8	< -34	-40 to 85	3.3	
LSB2-A3L-PC-N5	125/155	TX1550/RX1310	SMF	40km	Fast Ethernet	0 ~ -8	< -34	0 to 70	3.3	
LSB2-A3L-PI-N5	125/155	TX1550/RX1310	SMF	40km	Fast Ethernet	0 ~ -8	< -34	-40 to 85	3.3	
LSB2-A3U-PC-N3	125/155	TX1310/RX1550	SMF	60km	L1.1/Fast Ethernet	0 ~ -5	< -34	0 to 70	3.3	
LSB2-A3U-PI-N3	125/155	TX1310/RX1550	SMF	60km	L1.1/Fast Ethernet	0 ~ -5	< -34	-40 to 85	3.3	
LSB2-A3U-PC-N5	125/155	TX1550/RX1310	SMF	60km	L1.2/Fast Ethernet	0 ~ -5	< -34	0 to 70	3.3	
LSB2-A3U-PI-N5	125/155	TX1550/RX1310	SMF	60km	L1.2/Fast Ethernet	0 ~ -5	< -34	-40 to 85	3.3	
LSB2-A3U-PC-N3-ZZ	125/155	TX1310/RX1550	SMF	80km	Extended L1.1/Fast Ethernet	+5 ~ 0	< -34	0 to 70	3.3	
LSB2-A3U-PI-N3-ZZ	125/155	TX1310/RX1550	SMF	80km	Extended L1.1/Fast Ethernet	+5 ~ 0	< -34	-40 to 85	3.3	
LSB2-A3U-PC-N5-ZZ	125/155	TX1550/RX1310	SMF	80km	L1.2/Fast Ethernet	+4 ~ -2	< -35	0 to 70	3.3	
LSB2-A3U-PI-N5-ZZ	125/155	TX1550/RX1310	SMF	80km	L1.2/Fast Ethernet	+4 ~ -2	< -35	-40 to 85	3.3	
LSB2-A3L-PC-N5-51	125/155	TX1510/RX1570	SMF	100km	Extended L1.2/Fast Ethernet	+2 ~ -5	< -33	0 to 70	3.3	
LSB2-A3L-PI-N5-51	125/155	TX1510/RX1570	SMF	100km	Extended L1.2/Fast Ethernet	+2 ~ -5	< -33	-40 to 85	3.3	
LSB2-A3L-PC-N5-57	125/155	TX1570/RX1510	SMF	100km	Extended L1.2/Fast Ethernet	+2 ~ -5	< -33	0 to 70	3.3	
LSB2-A3L-PI-N5-57	125/155	TX1570/RX1510	SMF	100km	Extended L1.2/Fast Ethernet	+2 ~ -5	< -33	-40 to 85	3.3	
LSB2-A3U-PC-N5-51	125/155	TX1510/RX1570	SMF	120km	Extended L1.2/Fast Ethernet	+3 ~ -3	< -35	0 to 70	3.3	
LSB2-A3U-PI-N5-51	125/155	TX1510/RX1570	SMF	120km	Extended L1.2/Fast Ethernet	+3 ~ -3	< -35	-40 to 85	3.3	
LSB2-A3U-PC-N5-57	125/155	TX1570/RX1510	SMF	120km	Extended L1.2/Fast Ethernet	+3 ~ -3	< -35	0 to 70	3.3	
LSB2-A3U-PI-N5-57	125/155	TX1570/RX1510	SMF	120km	Extended L1.2/Fast Ethernet	+3 ~ -3	< -35	-40 to 85	3.3	

WDM Bi-Directional 1x9 Transceiver

GbE/1XFiber Channel (Receptacle Type)

Part Number Note 1	Bit Rate (Mbps)	Wavelength (nm)	Media	Reach	Application	TX Power (dBm)	RX Sens. (dBm)	Temp. Range(°C)	Voltage (V)	Note
LSB2-CAS-TC-N3-MM	1063/1250	TX1310/RX1550	MMF	500m	Gigabit Ethernet	0 ~ -8	< -18	0 to 70	3.3/5	2
LSB2-CAS-TI-N3-MM	1063/1250	TX1310/RX1550	MMF	500m	Gigabit Ethernet	0 ~ -8	< -18	-40 to 85	3.3/5	2
LSB2-CAS-TC-N5-MM	1063/1250	TX1550/RX1310	MMF	500m	Gigabit Ethernet	0 ~ -8	< -18	0 to 70	3.3/5	2
LSB2-CAS-TI-N5-MM	1063/1250	TX1550/RX1310	MMF	500m	Gigabit Ethernet	0 ~ -8	< -18	-40 to 85	3.3/5	2
LSB2-CAS-TC-N3	1063/1250	TX1310/RX1550	SMF	15km	1000BASE-LX	-3 ~ -9	< -21	0 to 70	3.3/5	2
LSB2-CAS-TI-N3	1063/1250	TX1310/RX1550	SMF	15km	1000BASE-LX	-3 ~ -9	< -21	-40 to 85	3.3/5	2
LSB2-CAS-TC-N5	1063/1250	TX1550/RX1310	SMF	15km	1000BASE-LX	-3 ~ -9	< -21	0 to 70	3.3/5	2
LSB2-CAS-TI-N5	1063/1250	TX1550/RX1310	SMF	15km	1000BASE-LX	-3 ~ -9	< -21	-40 to 85	3.3/5	2
LSB2-CAS-TC-N3-B9	1063/1250	TX1310/RX1490	SMF	15km	1000BASE-LX	-3 ~ -9	< -21	0 to 70	3.3/5	2
LSB2-CAS-TI-N3-B9	1063/1250	TX1310/RX1490	SMF	15km	1000BASE-LX	-3 ~ -9	< -21	-40 to 85	3.3/5	2
LSB2-CAS-TC-N5-B4	1063/1250	TX1490/RX1310	SMF	15km	1000BASE-LX	-3 ~ -9	< -21	0 to 70	3.3/5	2
LSB2-CAS-TI-N5-B4	1063/1250	TX1490/RX1310	SMF	15km	1000BASE-LX	-3 ~ -9	< -21	-40 to 85	3.3/5	2
LSB2-CAM-TC-N3	1063/1250	TX1310/RX1550	SMF	25km	1000BASE-LX	-2 ~ -7	< -23	0 to 70	3.3/5	2
LSB2-CAM-TI-N3	1063/1250	TX1310/RX1550	SMF	25km	1000BASE-LX	-2 ~ -7	< -23	-40 to 85	3.3/5	2
LSB2-CAM-TC-N5	1063/1250	TX1550/RX1310	SMF	25km	1000BASE-LX	-2 ~ -7	< -23	0 to 70	3.3/5	2
LSB2-CAM-TI-N5	1063/1250	TX1550/RX1310	SMF	25km	1000BASE-LX	-2 ~ -7	< -23	-40 to 85	3.3/5	2
LSB2-CAL-TC-N3	1063/1250	TX1310/RX1550	SMF	40km	1000BASE-LX	+2 ~ -3	< -23	0 to 70	3.3/5	2
LSB2-CAL-TI-N3	1063/1250	TX1310/RX1550	SMF	40km	1000BASE-LX	+2 ~ -3	< -23	-40 to 85	3.3/5	2
LSB2-CAL-TC-N5	1063/1250	TX1550/RX1310	SMF	40km	1000BASE-LX	+2 ~ -3	< -23	0 to 70	3.3/5	2
LSB2-CAL-TI-N5	1063/1250	TX1550/RX1310	SMF	40km	1000BASE-LX	+2 ~ -3	< -23	-40 to 85	3.3/5	2
LSB2-CAU-TC-N3	1063/1250	TX1310/RX1550	SMF	60km	1000BASE-LX	+5 ~ 0	< -25	0 to 70	3.3/5	2
LSB2-CAU-TI-N3	1063/1250	TX1310/RX1550	SMF	60km	1000BASE-LX	+5 ~ 0	< -25	-40 to 85	3.3/5	2
LSB2-CAU-TC-N5	1063/1250	TX1550/RX1310	SMF	60km	1000BASE-LX	+4 ~ -1	< -25	0 to 70	3.3/5	2
LSB2-CAU-TI-N5	1063/1250	TX1550/RX1310	SMF	60km	1000BASE-LX	+4 ~ -1	< -25	-40 to 85	3.3/5	2
LSB2-CAU-TC-N5-51	1063/1250	TX1510/RX1570	SMF	80km	1000BASE-LX	+3 ~ -2	< -26	0 to 70	3.3/5	3
LSB2-CAU-TC-N5-57	1063/1250	TX1570/RX1510	SMF	80km	1000BASE-LX	+3 ~ -2	< -26	0 to 70	3.3/5	3

Note 1: DC/DC PECL is also available
Note 2: PC : Commercial temperature (0 to 70°C), Industrial temperature (PI) is available
Note 3: PC : Commercial temperature (0 to 70°C) is available

WDM Bi-Directional 2x5 Transceiver

OC3/STM1/Fast Ethernet (Receptacle Type)

Part Number	Bit Rate (Mbps)	Wavelength (nm)	Media	Reach	Application	TX Power (dBm)	RX Sens. (dBm)	Temp. Range(°C)	Voltage (V)	Note
LSE2-A3S-PC-N3-MM	125/155	TX1310/RX1550	MMF	2km	Fast Ethernet	0 ~ -10	< -28	0 to 70	3.3	
LSE2-A3S-PI-N3-MM	125/155	TX1310/RX1550	MMF	2km	Fast Ethernet	0 ~ -10	< -28	-40 to 85	3.3	
LSE2-A3S-PC-N5-MM	125/155	TX1550/RX1310	MMF	2km	Fast Ethernet	0 ~ -10	< -28	0 to 70	3.3	
LSE2-A3S-PI-N5-MM	125/155	TX1550/RX1310	MMF	2km	Fast Ethernet	0 ~ -10	< -28	-40 to 85	3.3	
LSE2-A3M-PC-N3-MM	125/155	TX1310/RX1550	MMF	5km	Fast Ethernet	0 ~ -8	< -28	0 to 70	3.3	
LSE2-A3M-PI-N3-MM	125/155	TX1310/RX1550	MMF	5km	Fast Ethernet	0 ~ -8	< -28	-40 to 85	3.3	
LSE2-A3M-PC-N5-MM	125/155	TX1550/RX1310	MMF	5km	Fast Ethernet	0 ~ -8	< -28	0 to 70	3.3	
LSE2-A3M-PI-N5-MM	125/155	TX1550/RX1310	MMF	5km	Fast Ethernet	0 ~ -8	< -28	-40 to 85	3.3	
LSE2-A3S-PC-N3	125/155	TX1310/RX1550	SMF	15km	S1.1/Fast Ethernet	-8 ~ -14	< -31	0 to 70	3.3	
LSE2-A3S-PI-N3	125/155	TX1310/RX1550	SMF	15km	S1.1/Fast Ethernet	-8 ~ -14	< -31	-40 to 85	3.3	
LSE2-A3S-PC-N5	125/155	TX1550/RX1310	SMF	15km	S1.2/Fast Ethernet	-8 ~ -14	< -31	0 to 70	3.3	
LSE2-A3S-PI-N5	125/155	TX1550/RX1310	SMF	15km	S1.2/Fast Ethernet	-8 ~ -14	< -31	-40 to 85	3.3	
LSE2-A3S-PC-N3-BB	125/155	TX1310/RX1550	SMF	15km	S1.1/Fast Ethernet	-8 ~ -14	< -31	0 to 70	3.3	
LSE2-A3S-PI-N3-BB	125/155	TX1310/RX1550	SMF	15km	S1.1/Fast Ethernet	-8 ~ -14	< -31	-40 to 85	3.3	
LSE2-A3S-PC-N5-BB	125/155	TX1550/RX1310	SMF	15km	S1.2/Fast Ethernet	-8 ~ -14	< -31	0 to 70	3.3	
LSE2-A3S-PI-N5-BB	125/155	TX1550/RX1310	SMF	15km	S1.2/Fast Ethernet	-8 ~ -14	< -31	-40 to 85	3.3	
LSE2-A3M-PC-N3	125/155	TX1310/RX1550	SMF	25km	class A/Fast Ethernet	-3 ~ -9	< -31	0 to 70	3.3	
LSE2-A3M-PI-N3	125/155	TX1310/RX1550	SMF	25km	class A/Fast Ethernet	-3 ~ -9	< -31	-40 to 85	3.3	
LSE2-A3M-PC-N5	125/155	TX1550/RX1310	SMF	25km	class A/Fast Ethernet	-3 ~ -9	< -31	0 to 70	3.3	
LSE2-A3M-PI-N5	125/155	TX1550/RX1310	SMF	25km	class A/Fast Ethernet	-3 ~ -9	< -31	-40 to 85	3.3	
LSE2-A3L-PC-N3	125/155	TX1310/RX1550	SMF	40km	Fast Ethernet	0 ~ -8	< -34	0 to 70	3.3	
LSE2-A3L-PI-N3	125/155	TX1310/RX1550	SMF	40km	Fast Ethernet	0 ~ -8	< -34	-40 to 85	3.3	
LSE2-A3L-PC-N5	125/155	TX1550/RX1310	SMF	40km	Fast Ethernet	0 ~ -8	< -34	0 to 70	3.3	
LSE2-A3L-PI-N5	125/155	TX1550/RX1310	SMF	40km	Fast Ethernet	0 ~ -8	< -34	-40 to 85	3.3	
LSE2-A3U-PC-N3	125/155	TX1310/RX1550	SMF	60km	L1.1/Fast Ethernet	0 ~ -5	< -34	0 to 70	3.3	
LSE2-A3U-PI-N3	125/155	TX1310/RX1550	SMF	60km	L1.1/Fast Ethernet	0 ~ -5	< -34	-40 to 85	3.3	
LSE2-A3U-PC-N5	125/155	TX1550/RX1310	SMF	60km	L1.2/Fast Ethernet	0 ~ -5	< -34	0 to 70	3.3	
LSE2-A3U-PI-N5	125/155	TX1550/RX1310	SMF	60km	L1.2/Fast Ethernet	0 ~ -5	< -34	-40 to 85	3.3	

GbE/1X Fiber Channel (Receptacle Type)

Part Number	Bit Rate (Mbps)	Wavelength (nm)	Media	Reach	Application	TX Power (dBm)	RX Sens. (dBm)	Temp. Range(°C) Note 1	Voltage (V)	Note
LSE2-C3S-TC-N3-BB	1063/1250	TX1310/RX1550	SMF	15km	GbE/1X Fiber channel	-3 ~ -9	< -21	0 to 70	3.3	
LSE2-C3S-TC-N5-BB	1063/1250	TX1550/RX1310	SMF	15km	GbE/1X Fiber channel	-3 ~ -9	< -21	0 to 70	3.3	
LSE2-C3M-TC-N3-BB	1063/1250	TX1310/RX1550	SMF	25km	GbE/1X Fiber channel	-2 ~ -8	< -23	0 to 70	3.3	
LSE2-C3M-TC-N5-BB	1063/1250	TX1550/RX1310	SMF	25km	GbE/1X Fiber channel	-2 ~ -8	< -23	0 to 70	3.3	
LSE2-C3L-TC-N3-BB	1063/1250	TX1310/RX1550	SMF	40km	GbE/1X Fiber channel	+2~ -3	< -23	0 to 70	3.3	
LSE2-C3L-TC-N5-BB	1063/1250	TX1550/RX1310	SMF	40km	GbE/1X Fiber channel	+2~ -3	< -23	0 to 70	3.3	
LSE2-C3U-TC-N3-BB	1063/1250	TX1310/RX1550	SMF	60km	GbE/1X Fiber channel	+5~ 0	< -25	0 to 70	3.3	
LSE2-C3U-TC-N5-BB	1063/1250	TX1550/RX1310	SMF	60km	GbE/1X Fiber channel	+3~ -2	< -25	0 to 70	3.3	

Note 1: TC/PC : Commercial temperature (0 to 70°C), Industrial temperature (TI/PI) is available

WDM Bi-Directional SFP (LC Connector)

OC3/STM1/Fast Ethernet

Part Number	Bit Rate (Mbps)	Wavelength (nm)	Media	Reach	Application	TX Power (dBm)	RX Sens. (dBm)	Temp. Range(°C)	Voltage (V)	Note
LM38-A3S-TC-N-D3	125/155	TX1310/RX1550	MMF	2km	Fast Ethernet	0 ~ -10	< -28	0 to 70	3.3	
LM38-A3S-TI-N-D3	125/155	TX1310/RX1550	MMF	2km	Fast Ethernet	0 ~ -10	< -28	-40 to 85	3.3	
LM48-A3S-TC-N-D5	125/155	TX1550/RX1310	MMF	2km	Fast Ethernet	0 ~ -10	< -28	0 to 70	3.3	
LM48-A3S-TI-N-D5	125/155	TX1550/RX1310	MMF	2km	Fast Ethernet	0 ~ -10	< -28	-40to 85	3.3	
LS38-A3S-TC-N-D3	125/155	TX1310/RX1550	SMF	20km	S1.1/Fast Ethernet	-8 ~ -14	< -32	0 to 70	3.3	
LS38-A3S-TI-N-D3	125/155	TX1310/RX1550	SMF	20km	S1.1/Fast Ethernet	-8 ~ -14	< -32	-40 to 85	3.3	
LS48-A3S-TC-N-D5	125/155	TX1550/RX1310	SMF	20km	S1.2/Fast Ethernet	-8 ~ -14	< -32	0 to 70	3.3	
LS48-A3S-TI-N-D5	125/155	TX1550/RX1310	SMF	20km	S1.2/Fast Ethernet	-8 ~ -14	< -32	-40 to 85	3.3	
LS38-A3M-TC-N-D3	125/155	TX1310/RX1550	SMF	25km	S1.1/Fast Ethernet	-3 ~ -9	< -32	0 to 70	3.3	
LS38-A3M-TI-N-D3	125/155	TX1310/RX1550	SMF	25km	S1.1/Fast Ethernet	-3 ~ -9	< -32	-40 to 85	3.3	
LS48-A3M-TC-N-D5	125/155	TX1550/RX1310	SMF	25km	S1.2/Fast Ethernet	-3 ~ -9	< -32	0 to 70	3.3	
LS48-A3M-TI-N-D5	125/155	TX1550/RX1310	SMF	25km	S1.2/Fast Ethernet	-3 ~ -9	< -32	-40 to 85	3.3	
LS38-A3L-TC-N-D3	125/155	TX1310/RX1550	SMF	40km	L1.1/Fast Ethernet	0 ~ -8	< -34	0 to 70	3.3	
LS38-A3L-TI-N-D3	125/155	TX1310/RX1550	SMF	40km	L1.1/Fast Ethernet	0 ~ -8	< -34	-40 to 85	3.3	
LS48-A3L-TC-N-D5	125/155	TX1550/RX1310	SMF	40km	L1.2/Fast Ethernet	0 ~ -8	< -34	0 to 70	3.3	
LS48-A3L-TI-N-D5	125/155	TX1550/RX1310	SMF	40km	L1.2/Fast Ethernet	0 ~ -8	< -34	-40 to 85	3.3	
LS38-A3U-TC-N-D3	125/155	TX1310/RX1550	SMF	60km	L1.1/Fast Ethernet	0 ~ -5	< -34	0 to 70	3.3	
LS38-A3U-TI-N-D3	125/155	TX1310/RX1550	SMF	60km	L1.1/Fast Ethernet	0 ~ -5	< -34	-40 to 85	3.3	
LS48-A3U-TC-N-D5	125/155	TX1550/RX1310	SMF	60km	L1.2/Fast Ethernet	0 ~ -5	< -34	0 to 70	3.3	
LS48-A3U-TI-N-D5	125/155	TX1550/RX1310	SMF	60km	L1.2/Fast Ethernet	0 ~ -5	< -34	-40 to 85	3.3	
LS38-A3U-TC-N-YD	125/155	TX1310/RX1550	SMF	80km	L1.1/Fast Ethernet	+5 ~ 0	< -34	0 to 70	3.3	
LS38-A3U-TI-N-YD	125/155	TX1310/RX1550	SMF	80km	L1.1/Fast Ethernet	+5 ~ 0	< -34	-40 to 85	3.3	
LS48-A3U-TC-N-YD	125/155	TX1550/RX1310	SMF	80km	L1.2/Fast Ethernet	0 ~ -5	< -35	0 to 70	3.3	
LS48-A3U-TI-N-YD	125/155	TX1550/RX1310	SMF	80km	L1.2/Fast Ethernet	0 ~ -5	< -35	-40 to 85	3.3	
LS48-A3U-TC-N49-D5	125/155	TX1490/RX1550	SMF	120km	Fast Ethernet	+3 ~ -2	< -34	0 to 70	3.3	
LS48-A3U-TI-N49-D5	125/155	TX1490/RX1550	SMF	120km	Fast Ethernet	+3 ~ -2	< -34	-40 to 85	3.3	
LS48-A3U-TC-N55-D5	125/155	TX1550/RX1490	SMF	120km	Fast Ethernet	+3 ~ -2	< -34	0 to 70	3.3	
LS48-A3U-TI-N55-D5	125/155	TX1550/RX1490	SMF	120km	Fast Ethernet	+3 ~ -2	< -34	-40 to 85	3.3	

WDM Bi-Directional SFP (LC Connector)

GbE/1XFiber Channel

Part Number	Bit Rate (Mbps)	Wavelength (nm)	Media	Reach	Application	TX Power (dBm)	RX Sens. (dBm)	Temp. Range(°C)	Voltage (V)	Note
LM38-C3S-TC-N-D3	1063/1250	TX1310/RX1550	MMF	550m	1000BASE BiDi	0 ~ -8	< -18	0 to 70	3.3	
LM38-C3S-TI-N-D3	1063/1250	TX1310/RX1550	MMF	550m	1000BASE BiDi	0 ~ -8	< -18	-40 to 85	3.3	
LM48-C3S-TC-N-D5	1063/1250	TX1550/RX1310	MMF	550m	1000BASE BiDi	0 ~ -8	< -18	0 to 70	3.3	
LM48-C3S-TI-N-D5	1063/1250	TX1550/RX1310	MMF	550m	1000BASE BiDi	0 ~ -8	< -18	-40 to 85	3.3	
LS38-C3S-TC-N-D3	1063/1250	TX1310/RX1550	SMF	10km	1000BASE BiDi	-3 ~ -9	< -21	0 to 70	3.3	
LS38-C3S-TI-N-D3	1063/1250	TX1310/RX1550	SMF	10km	1000BASE BiDi	-3 ~ -9	< -21	-40 to 85	3.3	
LS48-C3S-TC-N-D5	1063/1250	TX1550/RX1310	SMF	10km	1000BASE BiDi	-3 ~ -9	< -21	0 to 70	3.3	
LS48-C3S-TI-N-D5	1063/1250	TX1550/RX1310	SMF	10km	1000BASE BiDi	-3 ~ -9	< -21	-40 to 85	3.3	
LS38-C3M-TC-N-D3	1063/1250	TX1310/RX1550	SMF	20km	1000BASE BiDi	-2 ~ -8	< -23	0 to 70	3.3	
LS38-C3M-TI-N-D3	1063/1250	TX1310/RX1550	SMF	20km	1000BASE BiDi	-2 ~ -8	< -23	-40 to 85	3.3	
LS48-C3M-TC-N-D5	1063/1250	TX1550/RX1310	SMF	20km	1000BASE BiDi	-2 ~ -8	< -23	0 to 70	3.3	
LS48-C3M-TI-N-D5	1063/1250	TX1550/RX1310	SMF	20km	1000BASE BiDi	-2 ~ -8	< -23	-40 to 85	3.3	
LS38-C3L-TC-N-D3	1063/1250	TX1310/RX1550	SMF	40km	1000BASE BiDi	+2 ~ -3	< -23	0 to 70	3.3	
LS38-C3L-TI-N-D3	1063/1250	TX1310/RX1550	SMF	40km	1000BASE BiDi	+2 ~ -3	< -23	-40 to 85	3.3	
LS48-C3L-TC-N-D5	1063/1250	TX1550/RX1310	SMF	40km	1000BASE BiDi	+2 ~ -3	< -23	0 to 70	3.3	
LS48-C3L-TI-N-D5	1063/1250	TX1550/RX1310	SMF	40km	1000BASE BiDi	+2 ~ -3	< -23	-40 to 85	3.3	
LS38-C3U-TC-N-D3	1063/1250	TX1310/RX1550	SMF	60km	1000BASE BiDi	+5 ~ 0	< -24	0 to 70	3.3	
LS38-C3U-TI-N-D3	1063/1250	TX1310/RX1550	SMF	60km	1000BASE BiDi	+5 ~ 0	< -24	-40 to 85	3.3	
LS48-C3U-TC-N-D5	1063/1250	TX1550/RX1310	SMF	60km	1000BASE BiDi	+4 ~ -2	< -25	0 to 70	3.3	
LS48-C3U-TI-N-D5	1063/1250	TX1550/RX1310	SMF	60km	1000BASE BiDi	+4 ~ -2	< -25	-40 to 85	3.3	
LS48-C3U-TC-N51-D5	1063/1250	TX1510/RX1570	SMF	80km	1000BASE BiDi	+3 ~ -2	< -26	0 to 70	3.3	
LS48-C3U-TI-N51-D5	1063/1250	TX1510/RX1570	SMF	80km	1000BASE BiDi	+1 ~ -4	< -26	-40 to 85	3.3	
LS48-C3U-TC-N57-D5	1063/1250	TX1570/RX1510	SMF	80km	1000BASE BiDi	+3 ~ -2	< -26	0 to 70	3.3	
LS48-C3U-TI-N57-D5	1063/1250	TX1570/RX1510	SMF	80km	1000BASE BiDi	+1 ~ -4	< -26	-40 to 85	3.3	
LS48-C3U-TC-N51-DH	1063/1250	TX1510/RX1570	SMF	120km	1000BASE BiDi	+3 ~ -2	< -33	0 to 70	3.3	
LS48-C3U-TI-N51-DH	1063/1250	TX1510/RX1570	SMF	120km	1000BASE BiDi	+3 ~ -2	< -33	-40 to 85	3.3	
LS48-C3U-TC-N57-DH	1063/1250	TX1570/RX1510	SMF	120km	1000BASE BiDi	+3 ~ -2	< -33	0 to 70	3.3	
LS48-C3U-TI-N57-DH	1063/1250	TX1570/RX1510	SMF	120km	1000BASE BiDi	+3 ~ -2	< -33	-40 to 85	3.3	

WDM Bi-Directional SFP (LC Connector)

GbE/1XFiber Channel

Part Number	Bit Rate (Mbps)	Wavelength (nm)	Media	Reach	Application	TX Power (dBm)	RX Sens. (dBm)	Temp. Range(°C)	Voltage (V)	Note
LS38-C3S-TC-N-D9	1063/1250	TX1310/RX1490	SMF	10km	1000BASE-BX	-3 ~ -9	< -21	0 to 70	3.3	
LS38-C3S-TI-N-D9	1063/1250	TX1310/RX1490	SMF	10km	1000BASE-BX	-3 ~ -9	< -21	-40 to 85	3.3	
LS48-C3S-TC-N-D4	1063/1250	TX1490/RX1310	SMF	10km	1000BASE-BX	-3 ~ -9	< -21	0 to 70	3.3	
LS48-C3S-TI-N-D4	1063/1250	TX1490/RX1310	SMF	10km	1000BASE-BX	-3 ~ -9	< -21	-40 to 85	3.3	
LS38-C3M-TC-N-D9	1063/1250	TX1310/RX1490	SMF	20km	1000BASE-BX	-2 ~ -8	< -23	0 to 70	3.3	
LS38-C3M-TI-N-D9	1063/1250	TX1310/RX1490	SMF	20km	1000BASE-BX	-2 ~ -8	< -23	-40 to 85	3.3	
LS48-C3M-TC-N-D4	1063/1250	TX1490/RX1310	SMF	20km	1000BASE-BX	-2 ~ -8	< -23	0 to 70	3.3	
LS48-C3M-TI-N-D4	1063/1250	TX1490/RX1310	SMF	20km	1000BASE-BX	-2 ~ -8	< -23	-40 to 85	3.3	
LS38-C3L-TC-N-D9	1063/1250	TX1310/RX1490	SMF	40km	1000BASE-BX	+2 ~ -3	< -23	0 to 70	3.3	
LS38-C3L-TI-N-D9	1063/1250	TX1310/RX1490	SMF	40km	1000BASE-BX	+2 ~ -3	< -23	-40 to 85	3.3	
LS48-C3L-TC-N-D4	1063/1250	TX1490/RX1310	SMF	40km	1000BASE-BX	+2 ~ -3	< -23	0 to 70	3.3	
LS48-C3L-TI-N-D4	1063/1250	TX1490/RX1310	SMF	40km	1000BASE-BX	+2 ~ -3	< -23	-40 to 85	3.3	
LS38-C3U-TC-N-D9	1063/1250	TX1310/RX1490	SMF	60km	1000BASE-BX	+5 ~ 0	< -24	0 to 70	3.3	
LS38-C3U-TI-N-D9	1063/1250	TX1310/RX1490	SMF	60km	1000BASE-BX	+5 ~ 0	< -24	-40 to 85	3.3	
LS48-C3U-TC-N-D4	1063/1250	TX1490/RX1310	SMF	60km	1000BASE-BX	+4 ~ -2	< -25	0 to 70	3.3	
LS48-C3U-TI-N-D4	1063/1250	TX1490/RX1310	SMF	60km	1000BASE-BX	+4 ~ -2	< -25	-40 to 85	3.3	

WDM Bi-Directional SFP (LC Connector)

2500Mbps/OC48/STM16

Part Number	Bit Rate (Mbps)	Wavelength (nm)	Media	Reach	Application	TX Power (dBm)	RX Sens. (dBm)	Temp. Range(°C)	Voltage (V)	Note
LS38-E3S-TC-N-D9	2500	TX1310/RX1490	SMF	20km	2500M/OC48/STM-16	0 ~ -5	< -20	0 to 70	3.3	
LS38-E3S-TI-N-D9	2500	TX1310/RX1490	SMF	20km	2500M/OC48/STM-16	0 ~ -5	< -20	-40 to 85	3.3	
LS48-E3S-TC-N-D4	2500	TX1490/RX1310	SMF	20km	2500M/OC48/STM16	0 ~ -5	< -20	0 to 70	3.3	
LS48-E3S-TI-N-D4	2500	TX1490/RX1310	SMF	20km	2500M/OC48/STM16	0 ~ -5	< -20	-40 to 85	3.3	
LS38-E3M-TC-N-D9	2500	TX1310/RX1490	SMF	40km	2500M/OC48/STM16	+3 ~ -2	< -23	0 to 70	3.3	
LS38-E3M-TI-N-D9	2500	TX1310/RX1490	SMF	40km	2500M/OC48/STM16	+3 ~ -2	< -23	-40 to 85	3.3	
LS48-E3M-TC-N-D4	2500	TX1490/RX1310	SMF	40km	2500M/OC48/STM16	+3 ~ -2	< -23	0 to 70	3.3	
LS48-E3M-TI-N-D4	2500	TX1490/RX1310	SMF	40km	2500M/OC48/STM16	+3 ~ -2	< -23	-40 to 85	3.3	
LS38-E3L-TC-N-D9	2500	TX1310/RX1490	SMF	60km	2500M/OC48/STM16	+5 ~ +1	< -23	0 to 70	3.3	
LS38-E3L-TI-N-D9	2500	TX1310/RX1490	SMF	60km	2500M/OC48/STM16	+5 ~ +1	< -23	-40 to 85	3.3	
LS48-E3L-TC-N-D4	2500	TX1490/RX1310	SMF	60km	2500M/OC48/STM16	+3 ~ -2	< -24	0 to 70	3.3	
LS48-E3L-TI-N-D4	2500	TX1490/RX1310	SMF	60km	2500M/OC48/STM16	+3 ~ -2	< -24	-40 to 85	3.3	
LS48-E3L-TC-N49-T5	2500	TX1490/RX1550	SMF	80km	2500M/OC48/STM16	+3 ~ -2	< -24	0 to 70	3.3	
LS48-E3L-TI-N49-T5	2500	TX1490/RX1550	SMF	80km	2500M/OC48/STM16	+3 ~ -2	< -24	-40 to 85	3.3	
LS48-E3L-TC-N55-T5	2500	TX1550/RX1490	SMF	80km	2500M/OC48/STM16	+3 ~ -2	< -24	0 to 70	3.3	
LS48-E3L-TI-N55-T5	2500	TX1550/RX1490	SMF	80km	2500M/OC48/STM16	+3 ~ -2	< -24	-40 to 85	3.3	
LS48-E3U-TC-N49-D5	2500	TX1490/RX1550	SMF	100km	2500M/OC48/STM16	+3 ~ -2	< -29	0 to 70	3.3	
LS48-E3U-TC-N55-D5	2500	TX1550/RX1490	SMF	100km	2500M/OC48/STM16	+3 ~ -2	< -29	0 to 70	3.3	
LS48-E3U-TC-N49-WT	2500	TX1490/RX1550	SMF	120km	2500M/OC48/STM16	+3.5 ~ -0.5	< -29.5	0 to 70	3.3	
LS48-E3U-TC-N55-WT	2500	TX1550/RX1490	SMF	120km	2500M/OC48/STM16	+3.5 ~ -0.5	< -29.5	0 to 70	3.3	

WDM Bi-Directional SFP (SC Connector)

OC3/STM1/Fast Ethernet

Part Number	Bit Rate (Mbps)	Wavelength (nm)	Media	Reach	Application	TX Power (dBm)	RX Sens. (dBm)	Temp. Range(°C)	Voltage (V)	Note
LS38-A3S-TC-N-P3	125/155	TX1310/RX1550	SMF	20km	S1.1/Fast Ethernet	-8 ~ -14	< -32	0 to 70	3.3	
LS38-A3S-TI-N-P3	125/155	TX1310/RX1550	SMF	20km	S1.1/Fast Ethernet	-8 ~ -14	< -32	-40 to 85	3.3	
LS48-A3S-TC-N-P5	125/155	TX1550/RX1310	SMF	20km	S1.2/Fast Ethernet	-8 ~ -14	< -32	0 to 70	3.3	
LS48-A3S-TI-N-P5	125/155	TX1550/RX1310	SMF	20km	S1.2/Fast Ethernet	-8 ~ -14	< -32	-40 to 85	3.3	
LS38-A3L-TC-N-P3	125/155	TX1310/RX1550	SMF	40km	L1.1/Fast Ethernet	0 ~ -8	< -34	0 to 70	3.3	
LS38-A3L-TI-N-P3	125/155	TX1310/RX1550	SMF	40km	L1.1/Fast Ethernet	0 ~ -8	< -34	-40 to 85	3.3	
LS48-A3L-TC-N-P5	125/155	TX1550/RX1310	SMF	40km	L1.2/Fast Ethernet	0 ~ -8	< -34	0 to 70	3.3	
LS48-A3L-TI-N-P5	125/155	TX1550/RX1310	SMF	40km	L1.2/Fast Ethernet	0 ~ -8	< -34	-40 to 85	3.3	

GbE/1X Fiber Channel

Part Number	Bit Rate (Mbps)	Wavelength (nm)	Media	Reach	Application	TX Power (dBm)	RX Sens. (dBm)	Temp. Range(°C)	Voltage (V)	Note
LS38-C3S-TC-N-P3	1063/1250	TX1310/RX1550	SMF	10km	1000BASE BiDi	-3 ~ -9	< -21	0 to 70	3.3	
LS38-C3S-TI-N-P3	1063/1250	TX1310/RX1550	SMF	10km	1000BASE BiDi	-3 ~ -9	< -21	-40 to 85	3.3	
LS48-C3S-TC-N-P5	1063/1250	TX1550/RX1310	SMF	10km	1000BASE BiDi	-3 ~ -9	< -21	0 to 70	3.3	
LS48-C3S-TI-N-P5	1063/1250	TX1550/RX1310	SMF	10km	1000BASE BiDi	-3 ~ -9	< -21	-40 to 85	3.3	
LS38-C3M-TC-N-P3	1063/1250	TX1310/RX1550	SMF	20km	1000BASE BiDi	-2 ~ -8	< -23	0 to 70	3.3	
LS38-C3M-TI-N-P3	1063/1250	TX1310/RX1550	SMF	20km	1000BASE BiDi	-2 ~ -8	< -23	-40 to 85	3.3	
LS48-C3M-TC-N-P5	1063/1250	TX1550/RX1310	SMF	20km	1000BASE BiDi	-2 ~ -8	< -23	0 to 70	3.3	
LS48-C3M-TI-N-P5	1063/1250	TX1550/RX1310	SMF	20km	1000BASE BiDi	-2 ~ -8	< -23	-40 to 85	3.3	
LS38-C3L-TC-N-P3	1063/1250	TX1310/RX1550	SMF	40km	1000BASE BiDi	+2 ~ -3	< -23	0 to 70	3.3	
LS38-C3L-TI-N-P3	1063/1250	TX1310/RX1550	SMF	40km	1000BASE BiDi	+2 ~ -3	< -23	-40 to 85	3.3	
LS48-C3L-TC-N-P5	1063/1250	TX1550/RX1310	SMF	40km	1000BASE BiDi	+2 ~ -3	< -23	0 to 70	3.3	
LS48-C3L-TI-N-P5	1063/1250	TX1550/RX1310	SMF	40km	1000BASE BiDi	+2 ~ -3	< -23	-40 to 85	3.3	
LS38-C3U-TC-N-P3	1063/1250	TX1310/RX1550	SMF	60km	1000BASE BiDi	+5 ~ 0	< -24	0 to 70	3.3	
LS38-C3U-TI-N-P3	1063/1250	TX1310/RX1550	SMF	60km	1000BASE BiDi	+5 ~ 0	< -24	-40 to 85	3.3	
LS48-C3U-TC-N-P5	1063/1250	TX1550/RX1310	SMF	60km	1000BASE BiDi	+4 ~ -2	< -25	0 to 70	3.3	
LS48-C3U-TI-N-P5	1063/1250	TX1550/RX1310	SMF	60km	1000BASE BiDi	+4 ~ -2	< -25	-40 to 85	3.3	
LS48-C3U-TC-N51-PH	1063/1250	TX1510/RX1570	SMF	120km	1000BASE BiDi	+3 ~ -2	< -33	0 to 70	3.3	
LS48-C3U-TC-N57-PH	1063/1250	TX1570/RX1510	SMF	120km	1000BASE BiDi	+3 ~ -2	< -33	0 to 70	3.3	

WDM Bi-Directional SFP+ Transceiver

BiDi SFP+ Transceiver

Part Number	Bit Rate (Gbps)	Wavelength (nm)	Media	Reach	Application	TX Power (dBm)	RX Sens. (dBm)	Temp. Range(°C)	Voltage (V)	Note
LG38-H3S-TC-N27	9.95/10.3125	TX1270/RX1330	SMF	10km	10G BASE Ethernet, SONET OC192, SDH STM-64	+1 ~ -4	< -14	0 to 70	3.3	
LG38-H3S-TI-N27	9.95/10.3125	TX1270/RX1330	SMF	10km	10G BASEEthernet, SONET OC192, SDH STM-64	+1 ~ -4	< -14	-40 to 85	3.3	
LG38-H3S-TC-N33	9.95/10.3125	TX1330/RX1270	SMF	10km	10G BASE Ethernet, SONET OC192, SDH STM-64	+1 ~ -4	< -14	0 to 70	3.3	
LG38-H3S-TI-N33	9.95/10.3125	TX1330/RX1270	SMF	10km	10G BASE Ethernet, SONET OC192, SDH STM-64	+1 ~ -4	< -14	-40 to 85	3.3	
LG38-H3M-TC-N27	9.95/10.3125	TX1270/RX1330	SMF	20km	10G BASE Ethernet, SONET OC192, SDH STM-64	+2 ~ -2	< -14	0 to 70	3.3	
LG38-H3M-TI-N27	9.95/10.3125	TX1270/RX1330	SMF	20km	10G BASE Ethernet, SONET OC192, SDH STM-64	+2 ~ -2	< -14	-40 to 85	3.3	
LG38-H3M-TC-N33	9.95/10.3125	TX1330/RX1270	SMF	20km	10G BASE Ethernet, SONET OC192, SDH STM-64	+2 ~ -2	< -14	0 to 70	3.3	
LG38-H3M-TI-N33	9.95/10.3125	TX1330/RX1270	SMF	20km	10G BASE Ethernet, SONET OC192, SDH STM-64	+2 ~ -2	< -14	-40 to 85	3.3	
LG38-H3L-TC-N27	9.95/10.3125	TX1270/RX1330	SMF	40km	10G BASE Ethernet, SONET OC192, SDH STM-64	+5.5 ~ +2	< -14.5	0 to 70	3.3	
LG38-H3L-TI-N27	9.95/10.3125	TX1270/RX1330	SMF	40km	10G BASE Ethernet, SONET OC192, SDH STM-64	+5.5 ~ +2	< -14.5	-40 to 85	3.3	
LG38-H3L-TC-N33	9.95/10.3125	TX1330/RX1270	SMF	40km	10G BASE Ethernet, SONET OC192, SDH STM-64	+5 ~ +1.5	< -15	0 to 70	3.3	
LG38-H3L-TI-N33	9.95/10.3125	TX1330/RX1270	SMF	40km	10G BASE Ethernet, SONET OC192, SDH STM-64	+5 ~ +1.5	< -15	-40 to 85	3.3	
LG38-H3U-TC-N27	9.95/10.3125	TX1270/RX1330	SMF	60km	10G BASE Ethernet, SONET OC192, SDH STM-64	+7 ~ +2.5	< -21.5	0 to 70	3.3	
LG38-H3U-TC-N33	9.95/10.3125	TX1330/RX1270	SMF	60km	10G BASE Ethernet, SONET OC192, SDH STM-64	+7 ~ +2.5	< -21.5	0 to 70	3.3	

WDM Bi-Directional 10 Gigabit XFP Transceiver

10GbE XFP

Part Number	Bit Rate (Gbps)	Wavelength (nm)	Media	Reach	Application	TX Power (dBm)	RX Sens. (dBm)	Temp. Range(°C)	Voltage (V)	Note
LS37-H3S-TC-NBA	9.95~11.3	TX1270/RX1330	SMF	10km	10GBASE-BX	0 ~ -5	< -14	0 to 70	3.3	
LS37-H3S-TI-NBA	9.95~11.3	TX1270/RX1330	SMF	10km	10GBASE-BX	0 ~ -5	< -14	-20 to 85	3.3	
LS37-H3S-TJ-NBA	9.95~11.3	TX1270/RX1330	SMF	10km	10GBASE-BX	0 ~ -5	< -14	-40 to 85	3.3	
LS37-H3S-TC-NBD	9.95~11.3	TX1330/RX1270	SMF	10km	10GBASE-BX	0 ~ -5	< -14	0 to 70	3.3	
LS37-H3S-TI-NBD	9.95~11.3	TX1330/RX1270	SMF	10km	10GBASE-BX	0 ~ -5	< -14	-20 to 85	3.3	
LS37-H3S-TJ-NBD	9.95~11.3	TX1330/RX1270	SMF	10km	10GBASE-BX	0 ~ -5	< -14	-40 to 85	3.3	
LS37-H3M-TC-NBA	9.95~11.3	TX1270/RX1330	SMF	20km	10GBASE-BX	+3 ~ -2	< -14	0 to 70	3.3	
LS37-H3M-TI-NBA	9.95~11.3	TX1270/RX1330	SMF	20km	10GBASE-BX	+3 ~ -2	< -14	-20 to 85	3.3	
LS37-H3M-TJ-NBA	9.95~11.3	TX1270/RX1330	SMF	20km	10GBASE-BX	+3 ~ -2	< -14	-40 to 85	3.3	
LS37-H3M-TC-NBD	9.95~11.3	TX1330/RX1270	SMF	20km	10GBASE-BX	+3 ~ -2	< -14	0 to 70	3.3	
LS37-H3M-TI-NBD	9.95~11.3	TX1330/RX1270	SMF	20km	10GBASE-BX	+3 ~ -2	< -14	-20 to 85	3.3	
LS37-H3M-TJ-NBD	9.95~11.3	TX1330/RX1270	SMF	20km	10GBASE-BX	+3 ~ -2	< -14	-40 to 85	3.3	
LS37-H3L-TC-NBA	9.95~11.3	TX1270/RX1330	SMF	40km	10GBASE-BX	+5 ~ +1	< -15	0 to 70	3.3	
LS37-H3L-TI-NBA	9.95~11.3	TX1270/RX1330	SMF	40km	10GBASE-BX	+5 ~ +1	< -15	-20 to 85	3.3	
LS37-H3L-TJ-NBA	9.95~11.3	TX1270/RX1330	SMF	40km	10GBASE-BX	+5 ~ +1	< -15	-40 to 85	3.3	
LS37-H3L-TC-NBD	9.95~11.3	TX1330/RX1270	SMF	40km	10GBASE-BX	+5 ~ +1	< -15	0 to 70	3.3	
LS37-H3L-TI-NBD	9.95~11.3	TX1270/RX1330	SMF	40km	10GBASE-BX	+5 ~ +1	< -15	-20 to 85	3.3	
LS37-H3L-TJ-NBD	9.95~11.3	TX1270/RX1330	SMF	40km	10GBASE-BX	+5 ~ +1	< -15	-40 to 85	3.3	

PON Transceiver

XGPON

Part Number	Bit Rate (Mbps)	Wavelength (nm)	Media	Reach	Application	TX Power (dBm)	RX Sens. (dBm)	Temp. Range(°C)	Voltage (V)	Note
LS38-H3S-TC-N-J1	2488/9953	TX1270/RX1577	SMF	20km	10GBASE-PR-U3	+7 ~ +2	< -28	0 to 70	3.3	
LS38-H3S-TI-N-J1	2488/9953	TX1270/RX1577	SMF	20km	10GBASE-PR-U3	+7 ~ +2	< -28	-40 to 85	3.3	

10G EPON

Part Number	Bit Rate (Gbps)	Wavelength (nm)	Media	Reach	Application	TX Power (dBm)	RX Sens. (dBm)	Temp. Range(°C)	Voltage (V)	Note
LS38-H3S-TC-N-H3	10.3125	TX1270/RX1577	SMF	20km	10GBASE-PR-U3	+9 ~ +4	< -28.5	0 to 70	3.3	

GEPON-ONU (SFF Pigtailed Type)

Part Number	Bit Rate (Mbps)	Wavelength (nm)	Media	Reach	Application	TX Power (dBm)	RX Sens. (dBm)	Temp. Range(°C)	Voltage (V)	Note
LSF2-C3S-TC-N3-AJ	1250	TX1310/RX1490	SMF	10km	10GBASE-PR-U3	+4 ~ -0.5	< -26.5	0 to 70	3.3	

GPON-ONU (SFF Pigtailed Type)

Part Number	Bit Rate (Mbps)	Wavelength (nm)	Media	Reach	Application	TX Power (dBm)	RX Sens. (dBm)	Temp. Range(°C)	Voltage (V)	Note
LSF2-C3M-TC-N3-HD	TX1244/RX2488	TX1310/RX1490	SMF	20km	G984.2 Class B+/C+ ONU	+5 ~ +0.5	< -28	0 to 70	3.3	
LSF2-C3M-TI-N3-HD	TX1244/RX2488	TX1310/RX1490	SMF	20km	G984.2 Class B+/C+ ONU	+5 ~ +0.5	< -28	-40 to 85	3.3	
LSF2-C3M-TC-N3-HE	TX1244/RX2488	TX1310/RX1490	SMF	20km	G984.5 Class B+/C+ ONU	+5 ~ +0.5	< -28	0 to 70	3.3	
LSF2-C3M-TI-N3-HE	TX1244/RX2488	TX1310/RX1490	SMF	20km	G984.5 Class B+/C+ ONU	+5 ~ +0.5	< -28	-40 to 85	3.3	

Copper SFP

Part Number	Speed Mode	MAC Interface	Extension Media	Distance	Temp. Range (°C)	Remark
SFP-T1	10/100Mbps	SerDes	CAT6 Cable	100M	0 to 70	LOS Enable
ASFPT-T1	1000Mbps only	1.25Gbps SerDes	CAT6 Cable	100M	0 to 70	LOS Enable
ASFPT-T1-I	1000Mbps only	1.25Gbps SerDes	CAT6 Cable	100M	-40 to 85	LOS Enable
ASFPT-T2	1000Mbps only	1.25Gbps SerDes	CAT6 Cable	100M	0 to 70	LOS Disable
ASFPT-T2-I	1000Mbps only	1.25Gbps SerDes	CAT6 Cable	100M	-40 to 85	LOS Disable
ASFPT-T3	10/100/1000Mbps	SGMII without clock	CAT6 Cable	100M	0 to 70	LOS Enable
ASFPT-T3-I	10/100/1000Mbps	SGMII without clock	CAT6 Cable	100M	-40 to 85	LOS Enable
ASFPT-T4	10/100/1000Mbps	SGMII without clock	CAT6 Cable	100M	0 to 70	LOS Disable
ASFPT-T4-I	10/100/1000Mbps	SGMII without clock	CAT6 Cable	100M	-40 to 85	LOS Disable
ASFPT-T10G	10Gbps	SerDes/SGMII	CAT7 Cable	100M	0 to 70	LOS Enable

Direct Attach Cable

SFP+ Cable

Part Number	Bit Rate (Gbps)	Length	AWG	Passive / Active	Temp. Range (°C)	Voltage (V)
SFP-PEC-10G-01	10	1M	30AWG	Passive	0 to 70	3.3
SFP-PEC-10G-02	10	2M	30AWG	Passive	0 to 70	3.3
SFP-PEC-10G-03S	10	3M	30AWG	Passive	0 to 70	3.3
SFP-PEC-10G-03	10	3M	24AWG	Passive	0 to 70	3.3
SFP-PEC-10G-05	10	5M	24AWG	Passive	0 to 70	3.3
SFP-AEC-10G-07	10	7M	24AWG	Active	0 to 70	3.3
SFP-AEC-10G-10	10	10M	24AWG	Active	0 to 70	3.3

QSFP+ Cable

Part Number	Bit Rate (Gbps)	Length	AWG	Passive / Active	Temp. Range (°C)	Voltage (V)
QSFP-PEC-40G-01	40	1M	30AWG	Passive	0 to 70	3.3
QSFP-PEC-40G-02	40	2M	30AWG	Passive	0 to 70	3.3
QSFP-PEC-40G-03	40	3M	30AWG	Passive	0 to 70	3.3
QSFP-PEC-40G-05	40	5M	26AWG	Passive	0 to 70	3.3
QSFP-AEC-40G-07	40	7M	26AWG	Active	0 to 70	3.3
QSFP-AEC-40G-10	40	10M	26AWG	Active	0 to 70	3.3

QSFP+ to 4SFP+ Cable

Part Number	Bit Rate (Gbps)	Length	AWG	Passive / Active	Temp. Range (°C)	Voltage (V)
QSFP-HPEC-40G-01	40	1M	30AWG	Passive	0 to 70	3.3
QSFP-HPEC-40G-03	40	3M	30AWG	Passive	0 to 70	3.3
QSFP-HPEC-40G-05	40	5M	30AWG	Passive	0 to 70	3.3

Optical Extender

3G-SDI Extender

Part Number	TX/RX	Feature	Extension Media	Distance	Max. Resolution	EDID	Remark
CHAS-FD-20K-1LC-XX	TX+RX	3G-SDI Extension	SMF 1LC	20,000M	1920 x 1080p (16:9)	N/A	SD/HD/3G SDI support Small size dongle design

DisplayPort Extender

Part Number	TX/RX	Feature	Extension Media	Distance	Max. Resolution	EDID	Remark
ADP-UD-200-MPO-XX	TX+RX	DisplayPort 1.2 Extension	MMF MPO	200M	3840 x 2160 (DP v1.2)	DPCD Pass-through	Pulg & Play Pure hardware design
ADP-UD-RPT1-XX	TX+RX	DisplayPort 1.2 Extension	24AWG Cable	10M+7.5M	3840 x 2160 (DP v1.2)	DPCD Pass-through	
ADPH-FD-500-1SC-XX	TX+RX	DisplayPort in + HDMI Out Extension	MMF	500M	1920 x 1200	Pseudo EDID	
ADP-FD-500-2LC-XX	TX+RX	DisplayPort 1.1a Extension	MMF	500M	1920 x 1200	DPCD Pass-through	Pulg & Play Pure hardware design

DVI Extender

Part Number	TX/RX	Feature	Extension Media	Distance	Max. Resolution	EDID	Remark
ADR-FD-800-2LC-XX	TX+RX	DVI Single Link + RS-232+Audio Extension	MMF 2LC	800M	1920 x 1080p (16:9) 1920 x 1200 (16:10)	Pseudo EDID	DVI+RS-232+Audio
DVI05K-2LCSS-XX	TX+RX	DVI Single Link Extension	SMF/MMF 2LC	SMF 1500M MMF 500M	1920 x 1080p (16:9) 1920 x 1200 (16:10)	Pseudo EDID	Small size dongle design Clone EDID function support
DVI500-MPO1/2-XX	TX+RX	DVI Dual Link Dongle Extension	MMF MPO	500M	2560 x 1600 (DVI Dual Link)	Pseudo EDID	Small size dongle design Clone EDID function support
DVI500-1SC-XX	TX+RX	DVI Single Link Extension	MMF 1SC	500M	1920 x 1080p (16:9) 1920 x 1200 (16:10)	Pseudo EDID	Small size dongle design Clone EDID function support
AD-SL-500-4LC-XX	TX+RX	DVI Single Link Extension	MMF 4LC	500M	1920 x 1080p (16:9) 1920 x 1200 (16:10)	Pseudo EDID	Small size dongle design Clone EDID function support
CHAD-SL-200-1LC-XX	TX+RX	DVI Single Link Extension	MMF 1LC	200M	1920 x 1080p (16:9) 1920 x 1200 (16:10)	Pass-through	Small size dongle design
CHAD-SL-500-1LC-XX	TX+RX	DVI Single Link Extension	MMF 1LC	500M	1920 x 1080p (16:9) 1920 x 1200 (16:10)	Pseudo EDID	Small size dongle design
ADE-FD-800-2LC-XX	TX+RX	DVI Single Link + Ethernet Extension	MMF 2LC	800M	1920 x 1080p (16:9) 1920 x 1200 (16:10)	Pseudo EDID	DVI+Ethernet
ADU-FD-800-2LC-XX	TX+RX	DVI Single Link + USB 1.1 Extension	MMF 2LC	800M	1920 x 1080p (16:9) 1920 x 1200 (16:10)	Pseudo EDID	DVI+USB1.1

Matrix Extender

Part Number	TX/RX	Feature	Extension Media	Distance	Max. Resolution	EDID	Remark
AO-FD-500-4LC-MX88	N/A	MMF 4LC Optical Matrix	MMF 4LC Inputs * 8 MMF 4LC Outputs * 8	TX 500M + RX 500M	1920 x 1080p (16:9) 1920 x 1200 (16:10)	Pseudo EDID	RS-232 & Panel Key Control

VGA Extender

Part Number	TX/RX	Feature	Extension Media	Distance	Max. Resolution	EDID	Remark
AV-FD-500-4LC-XX	TX+RX	VGA Extension	MMF 4LC	500M	1920 x 1080p (16:9)	Pseudo EDID	TX local loopback output Analog audio extension Skew-free design

Optical Extender

HDMI Extender

Part Number	TX/RX	Feature	Extension Media	Distance	Max. Resolution	EDID	Remark
AH-UD-300-1SC-XX	TX+RX	HDMI 2.0 Extension	MMF 1SC	300M	3840 x 2160@60HZ	Pass-through	Support 4K2K and 3D Support HDCP
AH-UD-200-1SC-XX	TX+RX	HDMI 1.4b Extension	SMF 1SC	200M	3840 x 2160@30HZ	Pass-through	Support 4K2K and 3D Support HDCP
AH-UD-10K-1SC-XX	TX+RX	HDMI 1.4b Extension	SMF 1SC	10,000M	3840 x 2160@30HZ	Pseudo EDID	Support 4K2K and 3D
AMRT-FD-05K-4LC-T-XX	TX	HDMI 1-to-8 Broadcast Extension	SMF 4LC *4	1,500M	1920 x 1080p (16:9)	Pseudo EDID / w Command-Learning	Build-in fiber splitter Sink monitoring Pulg & Play
AMRT-FD-05K-4LC-R-XX	RX		SMF 4LC				Support 2 HDMI outputs Support 2 RS-232 control
AMRT-FD-05K-2LC-T-XX	TX	HDMI 1-to-16 Broadcast Extension	SMF 2LC *8	5,000M	1920 x 1080p (16:9)	Pseudo EDID / w Command-Learning	Build-in fiber splitter Sink monitoring Pulg & Play
AMRT-FD-05K-2LC-R-XX	RX		SMF 2LC				Support 2 HDMI outputs Support 2 RS-232 control
CHAH-UD-200-1LC-XX	TX+RX	HDMI 1.4b Extension	MMF 1LC	200M	3840 x 2160@30HZ	Pass-through	Support 4K2K and 3D Support HDCP Small size dongle design
AH-UD-200-MPO-XX	TX+RX	HDMI 2.0 Extension	MMF MPO	200M	3840 x 2160@60HZ	Pass-through	Support 4K2K and 3D Support HDCP
AH-UD-RPT1	N/A	HDMI 2.0 Extension	24AWG Cable	20M	3840 x 2160@60HZ	Pass-through	Support 4K2K and 3D Support HDCP Small size dongle design
AHE-FD-800-2LC-XX	TX+RX	HDMI + Ethernet Extension	MMF 2LC	800M	1920 x 1080p (16:9) 1920 x 1200 (16:10)	Pseudo EDID	HDMI+Ethernet
AHU-FD-800-2LC-XX	TX+RX	HDMI + USB 1.1 Extension	MMF 2LC	800M		Pseudo EDID	HDMI+USB1.1
AHR-FD-800-2LC-XX	TX+RX	HDMI + RS-232+Audio Extension	MMF 2LC	800M		Pseudo EDID	HDMI+RS-232+Audio

KVM Extender

Part Number	TX/RX	Feature	Extension Media	Distance	Max. Resolution	EDID	Remark
AKVM-AHU2-200-MPO	TX+RX	HDMI 2.0 + USB 2.0 Extension	MMF MPO	200M	3840 x 2160@60HZ	Pass-through	RX build-in 4 ports USB Hub
AKVM-FD-800-2SC	TX+RX	DVI + USB 1.1+ Audio Extension	MMF 2SC	800M	1920 x 1080p (16:9) 1920 x 1200 (16:10)	Pseudo EDID	RX build-in 2 ports USB Hub
AKVM-DPU2-200-MPO	TX+RX	DP 1.2 + USB 2.0 Extension	MMF MPO	200M	3840 x 2160@60HZ	Pass-through	RX build-in 4 ports USB Hub
KVM200-2LC-XX	TX+RX	DVI + USB 2.0 Extension	MMF 2LC	200M	1920 x 1080p (16:9) 1920 x 1200 (16:10)	Pass-through	RX build-in 4 ports USB Hub

USB Extender

Part Number	TX/RX	Feature	Extension Media	Distance	Max. Resolution	EDID	Remark
USB150-CAT6-XX	TX+RX	USB 2.0 Extension	CAT6 Cable	150M	N/A	N/A	Support all USB 1.1/2.0 devices No need any driver Small size dongle design
CHAU-HS-200-1LC-XX	TX+RX	USB 2.0 Extension	MMF 1LC	200M	N/A	N/A	
AU-SS-200-2LC-XX	TX+RX	USB 3.0 Extension	MMF 2LC	200M	N/A	N/A	Support USB 3.0 device only No need any driver Small size dongle design True 5Gbps
AUK-SS-200-2LC-XX	TX+RX	USB 3.0 Extension	MMF 2LC	200M	N/A	N/A	

Optical Sub-Assembly Modules

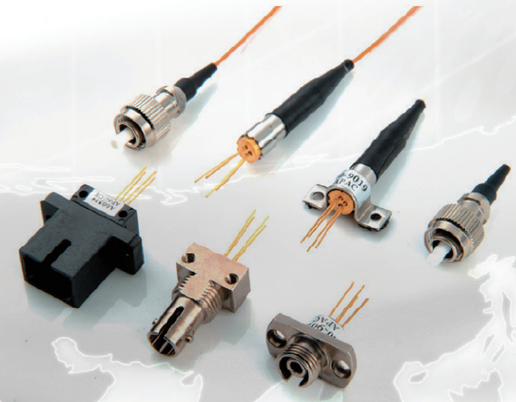
FP / DFB Laser Diode Module

CWDM Laser Diode Module

Photodiode Module

PIN-TIA Module

APD-TIA Module



WDM Bi-Directional Modules

Application :

Tele / Data-communications

SDH / SONET

ATM Networks

Access / FTTH (EPON / GPON / 10G-EPON)

Wireless Networks (2.5G, 10G)