SFP28-25G-L40-CHxx

25G SFP28 DWDM C-band | 50/100 GHz | 40 km | 16 dB

1. Product overview

Enhanced small form-factor pluggable DWDM transceiver for 25 Gbps Ethernet over single-mode fiber. An EML laser and APD receiver support 40 km transmission with FEC enabled on the host. The module provides duplex LC connectivity, digital diagnostic monitoring and a single 3.3 V supply.

2. Key features

Up to 25.78 Gbps data links; hot-pluggable SFP28; C-band DWDM; EML transmitter and APD receiver; DDM; 1.5 W power consumption; -40 to +85°C operation.

3. Applications

DWDM 25GBASE SFP28; 25 Gbps Ethernet; 40 km single-mode optical links with host FEC.

4. Technical data

Parameter	Specification	Parameter	Specification
Absolute supply / storage	-0.5 to 4 V / -40 to +85°C	Absolute operating case	-40 to +85°C
TX differential impedance	90 / 100 / 110 Ω (min/typ/max)	TX differential input swing	250-1200 mV
RX differential output swing	250-800 mV	Output rise/fall time	30 ps min
TX-disable / enable	2.0 to Vcc V / 0-0.8 V	RX-LOS fault / normal	2.0 to VccHOST V / 0 to 0+0.8 V

Channel selection - source part number for each row: CLSFP25GDW40I-<channel>. Frequencies and wavelengths are reproduced exactly.

Ch.	THz	nm	Ch.	THz	nm	Ch.	THz	nm	Ch.	THz	nm
C20	192.0	1561.42	H30	193.05	1552.92	C41	194.1	1544.53	H51	195.15	1536.21
H20	192.05	1561.02	C31	193.1	1552.52	H41	194.15	1544.13	C52	195.2	1535.82
C21	192.1	1560.61	H31	193.15	1552.12	C42	194.2	1543.73	H52	195.25	1535.42
H21	192.15	1560.20	C32	193.2	1551.72	H42	194.25	1543.33	C53	195.3	1535.04
C22	192.2	1559.79	H32	193.25	1551.32	C43	194.3	1542.94	H53	195.35	1534.65
H22	192.25	1559.39	C33	193.3	1550.92	H43	194.35	1542.54	C54	195.4	1534.25
C23	192.3	1558.98	H33	193.35	1550.52	C44	194.4	1542.14	H54	195.45	1533.87
H23	192.35	1558.57	C34	193.4	1550.12	H44	194.45	1541.75	C55	195.5	1533.47
C24	192.4	1558.17	H34	193.45	1549.72	C45	194.5	1541.35	H55	195.55	1533.07
H24	192.45	1557.76	C35	193.5	1549.32	H45	194.55	1540.96	C56	195.6	1532.68
C25	192.5	1557.36	H35	193.55	1548.91	C46	194.6	1540.56	H56	195.65	1532.29
H25	192.55	1556.95	C36	193.6	1548.51	H46	194.65	1540.16	C57	195.7	1531.90
C26	192.6	1556.55	H36	193.65	1548.11	C47	194.7	1539.77	H57	195.75	1531.51
H26	192.65	1556.15	C37	193.7	1547.72	H47	194.75	1539.37	C58	195.8	1531.12
C27	192.7	1555.75	H37	193.75	1547.32	C48	194.8	1538.98	H58	195.85	1530.73
H27	192.75	1555.35	C38	193.8	1546.92	H48	194.85	1538.58	C59	195.9	1530.33
C28	192.8	1554.94	H38	193.85	1546.52	C49	194.9	1538.19	H59	195.95	1529.94
H28	192.85	1554.54	C39	193.9	1546.12	H49	194.95	1537.70	C60	196.0	1529.55
C29	192.9	1554.13	H39	193.95	1545.72	C50	195.0	1537.40	H60	196.05	1529.16
H29	192.95	1553.73	C40	194.0	1545.32	H50	195.05	1537.01			
C30	193.0	1553.33	H40	194.05	1544.93	C51	195.1	1536.61			

5. Recommended operating conditions

Parameter	Specification	Parameter	Specification
Operating case temperature	-40 to +85°C	Supply, min / typ / max	3.15 / 3.3 / 3.45 V
Supply current	450 mA max	Data rate (source unit)	25 GBps typ
9/125 µm SMF link length	30 km typ / 40 km max	Power budget	16 dB max

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6. Optical characteristics

Transmitter	Specification
Centre wavelength (min/typ/max)	X-100 / X / X+100 pm [1]
Centre wavelength spacing	0.8 nm typ
Spectral width (-20 dB)	0.25 nm max
Average output power	-1 to +5 dBm
Extinction ratio	6.5 dB min
Average launch power, TX off	-30 dBm max
Relative intensity noise (RIN)	-130 dB/Hz max

Receiver	Specification
Centre wavelength	1520-1570 nm
Receiver sensitivity @5E-5	-17 dBm max
Stressed sensitivity @5E-5	-14.5 dBm max
Overload	-4 dBm min
LOS deassert	-22 dBm max
LOS assert	-25 dBm min
LOS hysteresis	0.5-4.5 dB

[1] X is the centre wavelength selected from the channel list. Source table units are pm; channel-list units are nm. Wavelength stability is achieved within 60 seconds of power-up.

Source warning: keep received optical power lower than -5 dBm.

7. Digital diagnostics and management

DDM thresholds below retain the original alarm and warning levels.

Monitor	Low alarm	Low warning	High warning	High alarm
Temperature	-45°C	-40°C	85°C	90°C
Voltage	3 V	3.1 V	3.5 V	3.6 V
TX bias	10 mA	15 mA	90 mA	100 mA
TX power	-4 dBm	-3 dBm	5 dBm	6 dBm
RX power	-20 dBm	-18 dBm	-4 dBm	-3 dBm

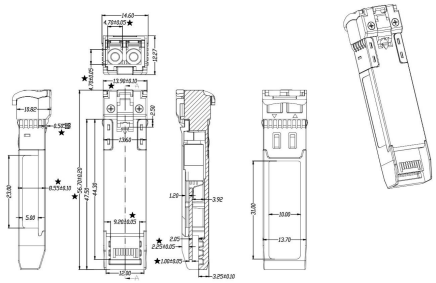
EEPROM: two-wire address 1010000X (A0h). Bytes 0-95: SFP MSA serial ID (96 bytes); 96-127: vendor-specific (32); 128-255: reserved (128).

20-pin map: TX ground 1/17/20; RX ground 10/11/14 (common internally); TX-fault 2; TX-disable 3; MOD_DEF(2) serial data 4; MOD_DEF(1) serial clock 5; MOD_DEF(0) 6, grounded in module; RS0 7; LOS 8; RS1 9; RX data -/+ 12/13; RX/TX supply 15/16; TX data +/- 18/19. Data input and output are AC-coupled. Circuit ground is isolated from chassis ground.

The source describes both RS0 and RS1 as optional receiver rate selection: high for input rates >4.25 GBd, low for rates <4.25 GBd. TX-disable: high/open or >2.0 V disables the laser; <0.8 V enables it. MOD_DEF signals require host pull-ups of 4.7-10 kΩ to 2.0-3.6 V; MOD_DEF(0) low indicates presence. LOS is open-collector with the same pull-up range: logic 0 normal, logic 1 loss of signal.

8. Safety and regulatory

Class 1 laser product; FDA laser regulations; EN 60825 Class 1 eye safety; EN 60950 electrical safety; RoHS. The original label artwork also depicts CE and FCC marks.



Mechanical specifications
Original dimensioned drawing at left.

Label format in source
30 x 9 mm; OEM label design/printing;
Code 128 and 2D barcode support.

9. Ordering information

Original manufacturer part number	Specification
SFP28-25G-L40-CHxx	2SFP28 25GbE DWDM C-Band up to 40km, 100GHz 16dB SM LC