

Specification

ETS
ENTA SOURCE CO., LTD.

ETSPL25G01D



25G SFP28 SR 100m 850nm Duplex LC DDM

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Product Specification

25.78Gbps SFP+ 100m Transceiver

Product Features

- Supports 25GBASE-SR(25Gb/s);
- Lane bit rate 25.78 Gb/s;
- Maximum link length of 70m on OM3 MMF and 100m on OM4 MMF;
- 850nm VCSEL laser and PIN photo-detector;
- High speed I/O electrical interface (25GAUI);
- I2C interface with integrated Digital Diagnostic monitoring;
- SFP28 MSA package with duplex LC connector;
- Maximum power consumption 1.0W
- Single +3.3V power supply;
- Operating case temperature: Refer to Order info.
- Compliant to IEEE 802.3cc Draft3.0, SFF-8402 and SFF-8432;
- Complies with EU Directive 2011/65/EU (RoHS 6/6);

Applications

√ 25GBase-SR

√ eCPRI

1. Absolute Maximum Ratings

Parameter	Symbol	Min.	Typical	Max.
Storage Temperature	TS	-40	-	+85
Supply Voltage	VCC	-0.5	-	+4.0
Operating Relative Humidity	RH	-	-	+85

2. Recommended Operating Conditions

Parameter	Symbol	Min.	Typical	Max.	Unit
Operating Case Temperature CLSFP25GSR	TC	-5	-	+70	°C
Operating Case Temperature CLSFP25GSRI	TC	-40	-	+85	°C
Power Supply Voltage	VCC	3.13	3.3	3.47	V
Power Supply Current	ICC	-	-	0.28	A
Maximum Power Dissipation	PD	-	-	1.0	W
Lane Bit Rate	BRLAN E	24.3	25.78	26.5	Gb/s
Transmission Distance(OM3)	TD			70	m
Transmission Distance(OM4)	TD			100	m

3. Optical Characteristics

Transmitter						
Parameter	Symbol	Min.	Typical	Max.	Unit	Notes
Center Wavelength	λ_0	840	850	860	nm	
Average Launch Power	PTX_LANE	-8.4	-	2.4	dBm	1
Optical Modulation Amplitude	OMA	-6.4	-	3	dBm	
Launch power in OMA minus TDP (min)	OMA TDP	-7.3	-	-	dBm	
Difference in launch power between	PTX_DELTA	-	-	3.6	dB	
Average Output Power (Laser Turn off)	P0UT-OFF	-	-	-30	dBm	
Extinction Ratio	ER	2	-	-	dB	

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Transmitter and dispersion penalty (TDP)	TDP	-	-	4.3	dB	
Optical Return Loss Tolerance	ORLT	-	-	12	dB	
Optical Eye Mask	Compliant with IEEE 802.3cc Draft				3.0	
Receiver						
Center Wavelength	λ_0	840	850	860	nm	
Average Rx Power per Lane, 100GE	PRX LANE	-10.3	-	2.4	dBm	2
Receiver sensitivity (OMA)	POMA LANE	-	-	-5.2	dBm	2
Receiver Overload	PIN-OL	3.4	-	-	dBm	
Reflectance	Ref	-	-	-12	dB	
LOS Assert per lane	LOSA	-3.0	-	-	dBm	
LOS De-assert	LOSD	-	-	-17	dBm	
LOS Hysteresis	LOSH	0.5	-	4	dB	

Notes:

1. Class1 Laser Safety limit per FDA/CDRH, and EN (IEC) 60825 laser safety standards.
2. Informative Only

4. Electrical Characteristics

Transmitter (Module Input)						
Parameter	Symbol	Min.	Typical	Max.	Unit	Notes
Differential Data Input	VIN,P-P	90	-	800	mVpp	
Differential Termination		-	-	5	%	
Tx_Disable	Normal	VIL	-0.3	-	0.8	V
	Laser Disable	VIH	2.0	-	VCC+0.3	V
Receiver (Module Output)						
Differential Data Output	VOOUT,P-P	185	-	425	mVpp	
Differential Termination		-	-	5	%	
Output Rise/Fall Time,	TR	12	-	-	ps	
Rx LOS	Normal	VOL	-	-	0.2	V
	Lose Signal	VOH	VCC-0.2	-	-	V

5. Pin Descriptions

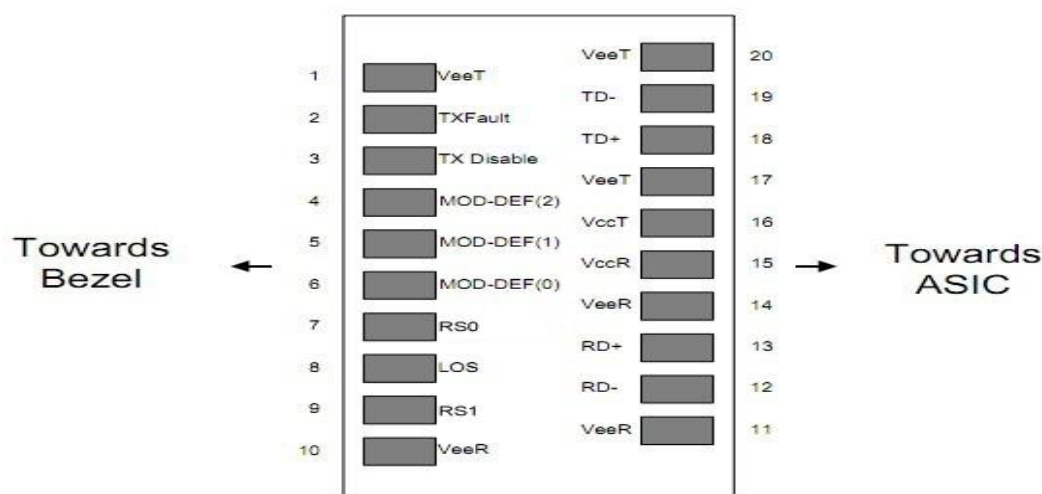


Diagram of Host Board Connector Block Pin Numbers and Names

Pin	Symbol	Description	Ref.
1	VEET	Transmitter Ground (Common with Receiver Ground)	7.1
2	TFAULT	Transmitter Fault. Not supported.	
3	TDIS	Transmitter Disable. Laser output disabled on high or open.	7.2
4	MOD_DEF(2)	Module Definition 2. Data line for Serial ID.	7.3
5	MOD_DEF(1)	Module Definition 1. Clock line for Serial ID.	7.3
6	MOD_DEF(0)	Module Definition 0. Grounded within the module.	7.3
7	RS0	Rate Select0, optionally controls SFP+ module receiver. When high input signaling rate>4.25 GBd and when low input signaling rate<4.25GBd	
8	LOS	Loss of Signal indication. Logic 0 indicates normal operation.	7.4
9	RS1	Rate Select1, optionally controls SFP+ module receiver. When high input signaling rate>4.25 GBd and when low input signaling rate<4.25GBd	
10	VEER	Receiver Ground (Common with Transmitter Ground)	7.1
11	VEER	Receiver Ground (Common with Transmitter Ground)	7.1
12	RD-	Receiver Inverted DATA out. AC Coupled.	
13	RD+	Receiver Non-inverted DATA out. AC Coupled.	
14	VEER	Receiver Ground (Common with Transmitter Ground)	7.1
15	VCCR	Receiver Power Supply	
16	VCCT	Transmitter Power Supply	
17	VEET	Transmitter Ground (Common with Receiver Ground)	7.1
18	TD+	Transmitter Non-Inverted DATA in. AC Coupled.	
19	TD-	Transmitter Inverted DATA in. AC Coupled.	
20	VEET	Transmitter Ground (Common with Receiver Ground)	7.1

Notes:

- 7.1 Circuit ground is internally isolated from chassis ground.
- 7.2 Laser output disabled on TDIS >2.0V or open, enabled on TDIS <0.8V.
- 7.3 Should be pulled up with 4.7k - 10kohms on host board to a voltage between 2.0V and 3.6V. MOD_DEF(0) pulls line low to indicate module is plugged in.
- 7.4 LOS is open collector output. Should be pulled up with 4.7k -10kohms on host board to a voltage between 2.0V and 3.6V. Logic 0 indicates normal operation; logic 1 indicates loss of signal.

6. EEPROM & DDM THRESHOLD

6.1 EEPROM

2 wire address 1010000X (A0h)

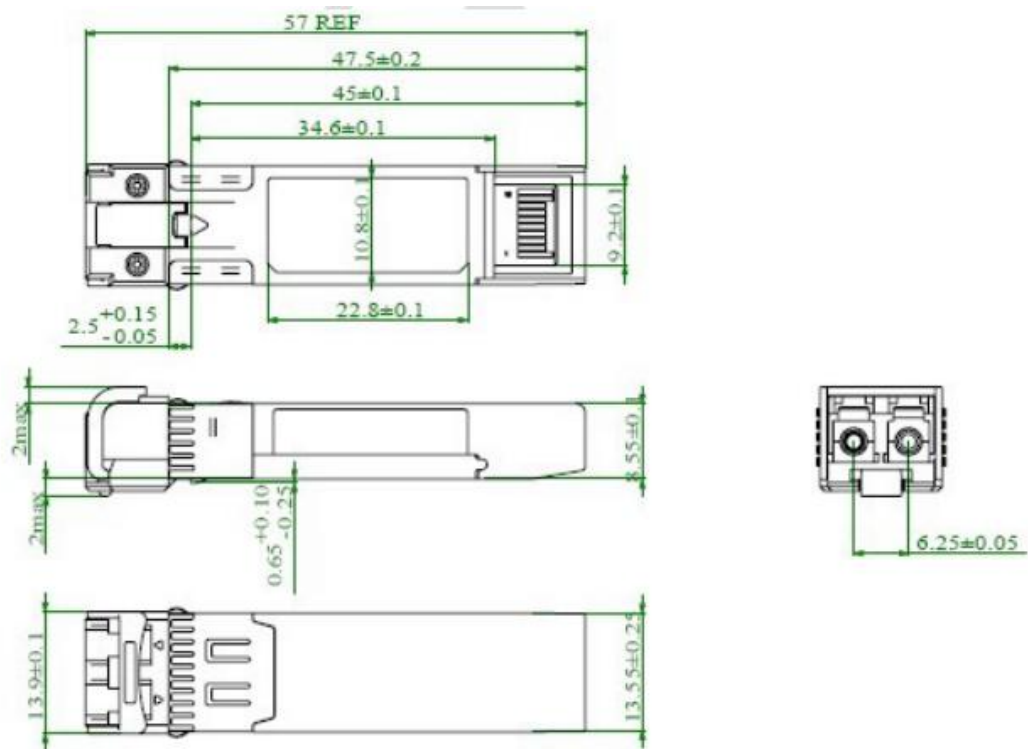
0~95
Serial ID Defined by SFP MSA (96 bytes)
96~127
Vendor Specific (32 bytes)
128~255
Reserved (128 bytes)

6.2 DDM THRESHOLD

	Low Alarm	Low Warn	High Warn	High Alarm
Temperature CLSFP25GSR	-10℃	-5℃	70℃	75℃
Temperature CLSFP25GSRI	-50℃	-40℃	85℃	100℃
Voltage	3V	3.1V	3.5V	4V
Tx Bias	2mA	3mA	10mA	11mA
Tx Power	-9dBm	-6dBm	3dBm	3.5dBm
Rx Power	-13dBm	-10dBm	3dBm	3.5dBm

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7. Mechanical Specifications



8. LABEL

ENTA SOURCE offers label OEM design and print. Label barcode supports code128 and 2D barcode

SIZE: 26mm*10.5mm

Ordering Information

Part No.	Data Rate	Laser	Fiber Type	Distance	Optical Interface	Temp	DDMI
ETSPL25G01D	25.78Gbps	850nm	MMF	100m	LC	-5~70 °C	Y
ETSPL25G01DI	25.78Gbps	850nm	MMF	100m	LC	-40~85 °C	Y

VERSION UPDATE:

VERSION NO.	DATE	UPDATED INFORMATION
V20160818	20160818	1. EEPROM& DDM Threshold updated 2. "LABEL" added 3. Ordering information updated 4. Product picture updated

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