

SFP28-25G-ER

6. Optical characteristics

Transmitter	Specification	Receiver	Specification
Centre wavelength / lane ranges	1295-1310 nm	Input wavelength	1272.55-1310.19 nm
Average launch power	0 to +6 dBm	Sensitivity, AVG / OMA	-19 dBm
Laser-off launch power	-30 dBm max	Overload	-4 dBm min
Spectral width (-20 dB)	1 nm max	Receiver reflectance	-26 dB max
SMSR / extinction ratio	30 dB min / 6 dB min	LOS assert / deassert	-30 dBm min / -20 dBm max
TX and dispersion penalty	1 dB max	LOS hysteresis	0.5 dB min
Output eye mask	IEEE 802.3cc		

Receiver sensitivity and overload: BER $\leq 5 \times 10^{-5}$. The source references an eye-mask note (2) but does not supply its text.

7. Digital diagnostics and management

Monitor	Range	Accuracy	Calibration
Temperature	0 to +70°C	$\pm 3^\circ\text{C}$	Internal
Supply voltage	3.0-3.6 V	$\pm 3\%$	Internal
Bias current	0-100 mA	$\pm 10\%$	Internal
TX power	0 to +6 dBm	± 3 dB	Internal
RX power	-19 to -4 dBm	± 3 dB	Internal

Two-wire serial interface SCL/SDA provides serial ID and live diagnostics. The memory-map description states both internal and external calibration; the monitor table specifies internal calibration.

Timing / logic	Specification	Timing / logic	Specification
TX-disable negate / assert	2 ms / 100 μs max	Initialize, incl. fault reset	300 ms max
TX-fault assert	100 μs max	TX-disable to reset	10 μs min
LOS assert / deassert	100 / 100 μs max	Serial-ID clock	100 kHz typ; 400 kHz max
MOD_DEF(0:2) high	2 to Vcc V	MOD_DEF(0:2) low	0.8 V max

Memory map: A0h (1010000X): serial ID 0-95 (96 bytes); vendor-specific 96-127 (32); reserved 128-255 (128). A2h (1010001X): alarm/warning thresholds 0-55 (56); calibration constants 56-95 (40); real-time diagnostics 96-119 (24); vendor-specific 120-127 (8); user-writable EEPROM 128-247 (120); vendor-specific 248-255 (8).

Pin map: TX grounds 1/17/20; RX grounds 10/11/14; TX-fault 2; TX-disable 3; SDA 4; SCL 5; module-absent 6 (grounded in module); RS0/RS1 7/9: not connected; LOS 8; RX data +/- 12/13; RX/TX supply 15/16; TX data +/- 18/19. Hot-plug sequence: grounds 1; supplies 2; remaining contacts 3.

TX-fault and LOS are open-collector: host pull-ups 4.7-10 k Ω to 2.0 V through Vcc+0.3 V (TX-fault), or 2.0-3.6 V (LOS). Low means normal; high means fault/loss. TX disabled above 2.0 V or open; enabled below 0.8 V. RX outputs are AC-coupled 100 Ω differential lines, requiring 100 Ω SERDES termination. TX inputs are AC-coupled and internally terminated at 100 Ω . Source circuit: 50 Ω single-ended data paths; 10 k Ω module TX-disable pull-up; two host TX-control and three management pull-ups of 4.7-10 k Ω .

8. Safety and regulatory

Class I laser; RoHS compatibility; SFP/SFP+ MSA and SFF-8472.

9. Ordering information

GLOBALfiber part number	Original product description
S25G-ER	SFP28, 25 GbE-ER, DDM, 40km, 1310nm, 18dB, SM