

## Fortinet Compatible FN-TRAN-SFP28-SR-FL Quick Spec:

Part Number: [FN-TRAN-SFP28-SR-FL](#)  
[FN-TRAN-SFP28-SR-FL-EXT](#)  
[FN-TRAN-SFP28-SR-FL-IND](#)

Form Factor: SFP28  
TX Wavelength: 850nm  
Reach: 100m  
Cable Type: MMF  
Rate Category: 25G  
Interface Type: SR  
DDM: Yes  
Connector Type: Dual-LC



## Fortinet Compatible FN-TRAN-SFP28-SR-FL Features

- Operating data rate up to 25.78Gbps
- 850nm VCSEL Transmitter
- Distance up to 100m @50 / 125 um OM4
- Distance up to 70m @50 / 125 um OM3
- Single 3.3V Power supply
- Duplex LC Connector Interface, Hot Pluggable
- Built-in dual CDR
- Electrical interface compliant to SFF-8431
- Power Dissipation < 1.0W
- Operating Case Temperature
  - Standard: 0°C to +70 °C
  - Extended -5°C to +85 °C
  - Industrial -40°C to +85 °C

## Fortinet Compatible FN-TRAN-SFP28-SR-FL Applications

- 25GBase-SR

## Product Description

The [FN-TRAN-SFP28-SR-FL](#) is SFP28 module for duplex optical data, communications up to 25.78Gb/s. It is with the SFP+ 20-pin connector to allow hot plug capability, Digital diagnostic functions are available via an I2C. It has built-in clock and data recovery (CDR). This module is designed for multi-mode fiber and operates at a nominal wavelength of 850 nm. The transmitter section uses a Vertical Cavity Surface Emitted Laser (VCSEL) and is a Class 1, laser compliant according to International Safety Standard IEC 60825. The receiver section uses, an integrated GaAs detector preamplifier (IDP) mounted in an optical header and a limiting post-amplifier IC.

## ABSOLUTE MAXIMUM RATINGS

The operation in excess of any absolute maximum ratings might cause permanent damage to this module.

Parameter	Symbol	Min	Max	Unit	Notes
Storage Temperature	TS	-40	85	°C	
Operating Case Temperature	TOP	0	70	°C	
Power Supply Voltage	V <sub>cc</sub>	-0.5	3.6	V	
Relative Humidity (non-condensation)	RH	5	85	%	

## RECOMMENDED OPERATING CONDITIONS

Parameter	Symbol	Min	Typical	Max	Unit	Notes
Operating Case Temperature	TOP	0		70	degC	
Power Supply Voltage	VCC	3.135	3.3	3.465	V	
Data Rate,				25.7812 5	Gb/s	
Data Rate Accuracy		-100		100	ppm	
Tx DISABLE Input Voltage –High		2			V	
Tx DISABLE Input Voltage – Low				0.8	V	
50 / 125 um MMF OM3	D	2		70	m	
50 / 125 um MMF OM4	D	2		100	m	

## Optical Characteristics

All parameters are specified under the recommended operating conditions unless otherwise specified..

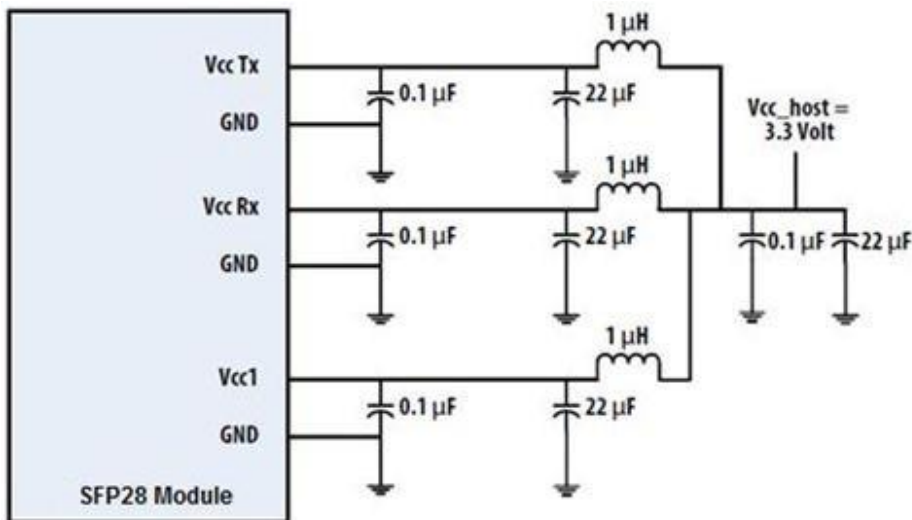
Parameter	Symbol	Min	Typical	Max	Unit	Notes
Power Consumption				1.0	W	
Supply Current	I <sub>cc</sub>			300	mA	
<b>Transmitter</b>						
Centre Wavelength	λ <sub>C</sub>	840	850	860	nm	
Spectral Width (RMS)@25Gb/s	Δλ	8.2		0.6	nm	
Average Output Power: 50 MMF	P <sub>out</sub>	-8.4		2.4	dBm	
Extinction Ratio	ER	2			dB	
<b>Receiver</b>						
Centre Wavelength	λ <sub>C</sub>	840	850	860	nm	
Receiver Sensitivity (OMA)	S <sub>min</sub>			-8.4	dBm	
Average Receiver Power	P <sub>in</sub>	-10.3		3	dBm	
Optical Return Loss	ORL			-12	At 1MHz	
LOS De-Assert	LOSD			-13	dB	
LOS Assert	LOSA	-30			dB	
LOS Hysteresis		0.5			dB	

## Digital Diagnostic Functions

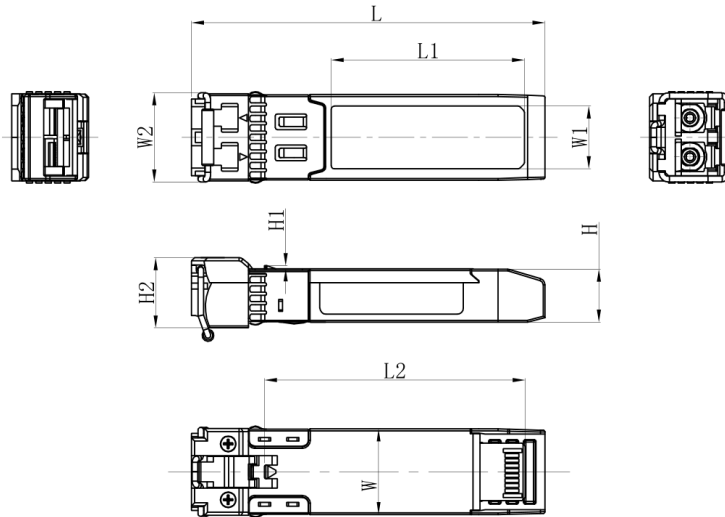
Digital diagnostics monitoring function is available on FluxLight's product. A 2-wire serial interface provides user to contact with module. It is compliant to SFF-8472 Rev10.2 with internal calibration mode. For external calibration mode please contact our sales stuff.

Parameter	Symbol	Min	Max	Unit	Notes
Temperature monitor absolute error	DMI_Temp	-3	+3	°C	
Supply voltage monitor absolute error	DMI_VCC	-0.1	+0.1	V	
TX power monitor absolute error	DMI_RX	-3	+3	dB	
RX power monitor absolute error	DMI_RX	-3	+3	dB	
Bias current monitor	DMI_Ibias	-10%	+10%	mA	

## Recommended Circuit



## Mechanical Dimensions

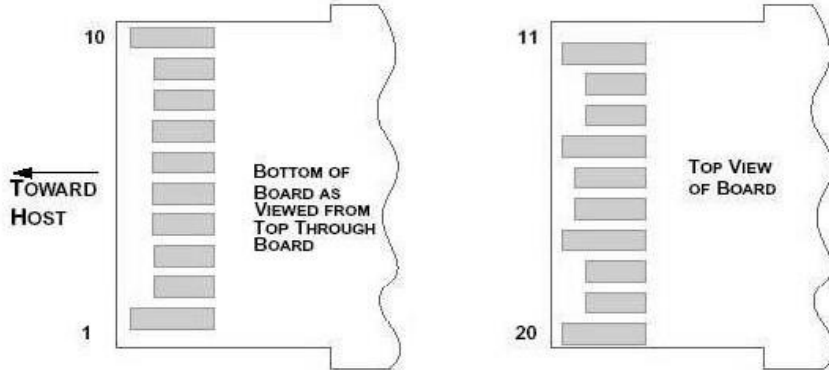


Unit: mm

	L	L1	L2	W	W1	W2	H	H1	H2
MAX	56.9	31.2	41.95	13.8	10.2	14.5	8.7	0.55	11.5
Typical	56.7	31.0	41.80	13.7	10.0	14.3	8.6	0.5	11.3
MIN	56.5	30.8	41.65	13.6	9.8	14.1	8.5	0.45	11.1

(Unit: mm [inch])

## Pin Assignment and Description



## Pin Assignment

PIN #	Symbol	Description	Notes
1	VeeT	Transmitter Ground	
2	TX_Fault	N/A	1
3	TX_DIS	Transmitter Disable	2
4	SDA	Tow Wire Serial Data	
5	SCL	Tow Wire Serial Clock	
6	MOD_DEF0	Module present, connect to VeeT	
7	RS0	N/A	1
8	LOS	LOS of Signal	2
9	RS1	N/A	1
10	VeeR	Reciever Ground	
11	VeeR	Reciever Ground	
12	RD-	Reciever Data Inverted	
13	RD+	Reciever Data Non-Inverted	
14	VeeR	Reciever Ground	
15	VccR	Reciever Supply 3.3V	
16	VccT	Transmitter Supply 3.3V	
17	VeeT	Transmitter Ground	
18	TD+	Transmitter Data Non-Inverted	
19	TD-	Transmitter Data Inverted	
20	VeeT	Transmitter Ground	

### Notes:

1. Signals not supported in SFP+ Copper pulled-down to VeeT with 30K ohms resistor
2. Passive cable assemblies do not support LOS and TX\_DIS

## Licensing

The following U.S. patents are licensed by Finisar to FluxLight, Inc.:

U.S. Patent Nos: 7,184,668, 7,079,775, 6,957,021, 7,058,310, 6,952,531, 7,162,160, 7,050,720