

- ▶ Hot-Pluggable SFP Footprint LC Optical Transceiver
- ▶ Digital Diagnostic Function
- ▶ Class 1 Laser International Safety Standard IEC-60825 Compliant
- ▶ Compatible with Small Form Factor Pluggable Multi-Sourcing Agreement (MSA)

Note: Per Cisco Systems's literature, the Cisco switches with SFP slots do not accept modules other than Cisco's own SFPs. The Cisco switch identifies the manufacturer ID along with the part number and blocks operations to this port for non-Cisco interfaces. Other major SFP switch manufacturers do not indicate in their literature that such restrictions are imposed.

Transition Networks's SFP units fully comply with Multi-Sourcing Agreement (MSA). This compliance allows Transition Networks SFP modules to be used on other MSA-compliant SFP platforms without any problems.

Applications

- ▶ Gigabit Ethernet Switches and Routers
- ▶ Fibre Channel Switch Infrastructure
- ▶ XDSL Applications
- ▶ Metro Edge Switching

Additional Features

TN-SFP-SX or -LXx SFP modules:

- ▶ Compliant with IEEE 802.3z Gigabit Ethernet
- ▶ Compliant with Fiber Channel 1X SM-LC-L FC-PI

TN-SFP-OC3x SFP modules:

- ▶ Compliant with 100BASE-FX
- ▶ Compliant with Intermediate-Reach SONET OC-3 / SDH STM-1 (S-1.1)

TN-SFP-OC12x SFP modules:

- ▶ Compliant with Intermediate-Reach SONET OC-12 / SDH STM-4 (S-4.1)

TN-SFP-FC2Xx SFP modules:

- ▶ Compliant with IEEE 802.3z Gigabit Ethernet
- ▶ Compliant with Fiber Channel 1X/2X SM-LC-L FC-PI
- ▶ Compliant with Short-Reach SONET OC-48 / SDH STM-16 (S-16.1)

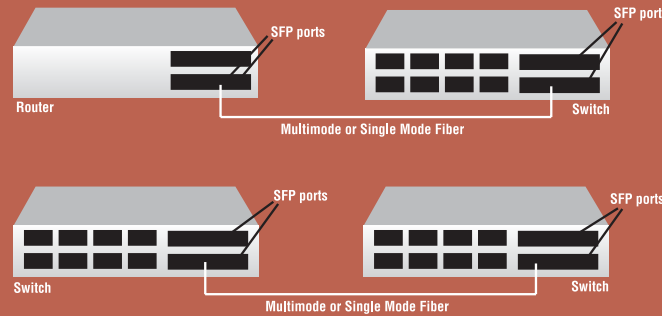
Can be used on Optical Line Converter xFMFF4040-100 (see pages 53 & 98)

CWDM wavelengths available upon request. Please contact Transition Networks.

TN-SFP-xxx



Fiber Connections with SFPs



Specifications

Standards IEEE 802.3 2003; ANSI X3.297-1997

Fiber Optic Connector Specs

SKU	Min TX PWR (dBm)	Max TX PWR (dBm)	RX Sens (dBm)	Max In PWR (dBm)	Link Budget (dB)
TN-SFP-OC3M	-19.0	-12.0	-30.0	-8.0	11.0
TN-SFP-OC3S	-14.0	-8.0	-31.0	-8.0	17.0
TN-SFP-OC12M	-19.0	-12.0	-26.0	-8.0	7.0
TN-SFP-OC12S	-14.0	-8.0	-28.0	-5.0	14.0
TN-SFP-SX	-9.0	4.0	-17.0	-3.0	8.0
TN-SFP-SXD	-9.0	-4.0	-17.0	-3.0	8.0
TN-SFP-ESX5	-10.0	-3.0	-18.0	-3.0	8.0
TN-SFP-ESX6	-10.0	-3.0	-18.0	-3.0	8.0
TN-SFP-LX1	-9.5	-3.0	-21.0	-3.0	11.5
TN-SFP-ELX1	-9.5	-3.0	-21.0	-3.0	11.5
TN-SFP-LX3	-5.0	0.0	-24.0	-3.0	19.0
TN-SFP-LX5	-5.0	0.0	-24.0	-3.0	19.0
TN-SFP-LX8	0.0	+5.0	-24.0	-3.0	24.0
TN-SFP-LX12	0.0	+5.0	-32.0	-9.0	32.0
TN-SFP-LX16	+1.0	+5.0	-36.0	-10.0	37.0
TN-SFP-FC2XM	-9.0	-4.0	-15.0	-3.0	6.0
TN-SFP-FC2XS2	-9.5	-3.0	-18.0	-3.0	8.5
TN-SFP-FC2XS15	-5.0	0.0	-18.0	0.0	13.0
TN-SFP-FC2XS40	-2.0	+3.0	-28.0	-9.0	26.0

Dimensions	Width: 0.52" [13 mm]
	Depth: 2.18" [55 mm]
	Height: 0.33" [8 mm]

Power	3.3V
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Power Consumption	0.66 watts
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Environment	TN-SFP-SX	TN-SFP-SXD
	TN-SFP-LX1	TN-SFP-ESX5
	TN-SFP-ESX6	TN-SFP-ELX1
	TN-SFP-FC2XM	TN-SFP-FC2XS2:
	-10°C – 85°C	
	TN-SFP-LX3	TN-SFP-LX5
	TN-SFP-LX8	TN-SFP-LX12
	TN-SFP-OCx	TN-SFP-LX16
	TN-SFP-FC2XS40	TN-SFP-FC2XS15:
	0°C – 70°C	

Compliance	IEC-60825; FDA 21; CFR 1040.10 and 1040.11
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Warranty	Lifetime
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Ordering Info

TN-SFP-OC3M
SFP 100BASE-FX/OC-3
1300nm MM (LC)
[2 km/1.2 mi.] Link Budget: 11.0 dB

TN-SFP-OC3S
SFP 100BASE-FX/OC-3
1310nm SM (LC)
[20 km/12.4 mi.] Link Budget: 17.0 dB

TN-SFP-OC12M
OC-12/STM-4 SFP 1300nm MM (LC)
[1 km/0.6 miles] Link Budget: 7.0 dB

TN-SFP-OC12S
OC-12/STM-4 SFP 1310nm SM (LC)
[20 km/12.4 mi.] Link Budget: 14.0 dB

TN-SFP-SX (model without DMI)
TN-SFP-SXD (model with DMI)
1000BASE-SX 850nm MM (LC)
[62.5/125µm: 220 m/722 ft.]
Link Budget: 8.0 dB
[50/125µm: 550 m/1804 ft.]
Link Budget: 8.0 dB

TN-SFP-ESX5
1000BASE-SX 1300nm Ext. MM (LC)
[50/125µm fiber only:
up to 2 km/1.2 mi.] Link Budget: 8.0 dB

TN-SFP-ESX6
1000BASE-SX 1300nm Ext. MM (LC)
[62.5/125µm fiber only:
up to 2 km/1.2 mi.] Link Budget: 8.0 dB

TN-SFP-LX1 (model with DMI)
TN-SFP-ELX1 (model without DMI)
1000BASE-LX 1310nm (LC) SM
[10 km/6.2 mi.] Link Budget: 11.5 dB

TN-SFP-LX3
1000BASE-LX 1310nm (LC) SM
[30 km/18.6 mi.] Link Budget: 19.0 dB

TN-SFP-LX5
1000BASE-LX 1550nm (LC) SM
[50 km/31.1 mi.] Link Budget: 19.0 dB

TN-SFP-LX8
1000BASE-LX 1550nm (LC) SM
[80 km/49.7 mi.] Link Budget: 24.0 dB

TN-SFP-LX12
1000BASE-LX 1550nm (LC) SM
[120 km/74.6 mi.] Link Budget: 32.0 dB

TN-SFP-LX16
1000BASE-LX 1550nm (LC) SM
[160 km/99.4 mi.] Link Budget: 37.0 dB

TN-SFP-FC2XM
OC-48/STM-16/Fibre Channel
1x/2x/1000BASE-SX 850nm (LC) MM
[62.5/125µm: 150 m/492 ft.]*
Link Budget: 6.0 dB
[50/125µm: 300 m/984 ft.]*
Link Budget: 6.0 dB

TN-SFP-FC2XS2
Fibre Channel 2x/1x / OC-48 / STM-16/
1000BASE-LX 1310nm SM (LC)
[2 km/1.2 miles] Link Budget: 8.5 dB

TN-SFP-FC2XS15
Fibre Channel 2x/1x / OC-48 / STM-16/
1000BASE-LX 1310nm SM (LC)
[15 km/9.3 mi.] Link Budget: 13.0 dB

TN-SFP-FC2XS40
Fibre Channel 2x/1x / OC-48 / STM-16/
1000BASE-LX 1310nm SM (LC)
[40 km/24.9 mi.] Link Budget: 26.0 dB

*Link distance at 1000BASE-SX and Fibre Channel 1x:
220m/722 ft using 62.5/125um MMF
550m/1804 ft using 50/125um MMF

*Link distance at Fibre Channel 2x/OC-48/STM-16:
150m/492 ft using 62.5/125um MMF
300m/984 ft using 50/125um MMF