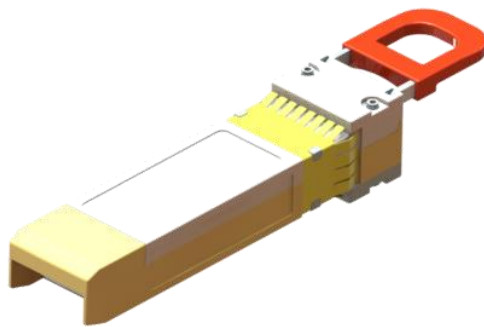
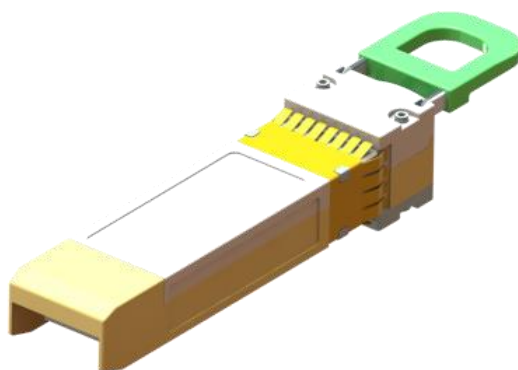


# SFP56 50G Loopback Module



**0-Watt**



**2.5-Watt**

## Features

- ◆ Industry's highest rated mating cycles for 2000 and above
- ◆ Built-in surge current mitigation technology
- ◆ Adjustable power consumption up to 2.5W
- ◆ Operating temperature: -40°C to 85°C
- ◆ +3.3V power supply
- ◆ Supports 10G/25G/56G PAM4 data rates
- ◆ 2-wire interface for integrated Digital Diagnostic Monitoring
- ◆ Signal integrity performance meets IEEE 802.3ba, 802.3bj, 802.3cd, standards respectively
- ◆ Enhanced EMC/EMI design for noise harsh environment
- ◆ Custom EEPROM available
- ◆ A multi-color LED indicator for high/low power modes
- ◆ Hot-pluggable
- ◆ RoHS 2.0 compliant

## Application

- ◆ SFP port/system testing
- ◆ Ethernet IEEE 802.3
- ◆ SONET, SDH, GBE, Fiber Channel Support

## Standard

- ◆ SFF-8024, SFF Cross Reference to Industry Products, Rev 4.7
- ◆ SFP MSA SFF-8472,8432,8419,8071
- ◆ EIA 364 Series
- ◆ IEEE 803.2bm
- ◆ IEEE 803.2bj
- ◆ IEEE 802.3cd
- ◆ IEEE802.3bs

### Description

Designed and engineered to accommodate customers high usage 2000 cycles at -40°C to 85°C, the loopback module series are the most reliable products in the market to enable the quickest customers systems production and deployment. Software defined multiple power consumption may emulate the optical module power, and the embedded insertion loss characteristics emulates the real-world cabling for 10G/25G/50G Ethernet/Infiniband/FC. The built-in surge current mitigation technology mitigates the DUT risks from being damaged. The broad operating temperature range accommodates the enterprise, datacom and telecom applications. The loopback module may be used for ports testing, field deployment testing and equipment troubleshooting.

### Specification

Absolute Maximum Ratings				
Parameter	Symbol	Min	Max	Unit
Storage Temperature	Ts	-40	+85	°C
Ambient Operating Temperature	Ta	-40	+85	°C
Storage Relative Humidity	RH <sub>s</sub>	0	95	%
Operating Relative Humidity	RH <sub>o</sub>	0	85	%
Power Supply Voltage	V <sub>cc</sub>	2.97	+3.63	V

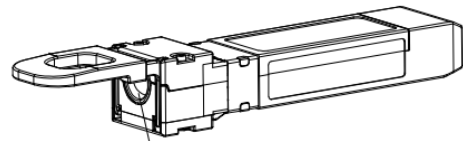
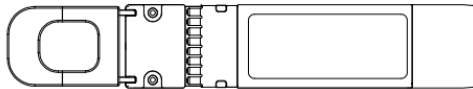
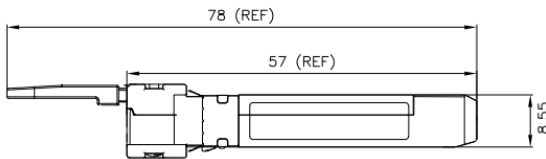
Recommended Operating Conditions					
Parameter	Symbol	Min	Typical	Max	Unit
Ambient Operating Temperature	Ta	-40	-	+85	°C
Power Supply Voltage	V <sub>cc</sub>	2.97	3.3	3.63	V
Data Rate	BRate	0.1	-	50	Gbps
Durability Cycles		-	2000	2250	Cycles

High Speed Characteristics						
Parameter	Symbol	Min	Typical	Max	Unit	Notes
Input/Output Impedance	Z <sub>d</sub>	90	100	110	Ohm	Differential Impedance
Differential Input/Output Return Loss	SDD11	IEEE 802.3bj CL92.10.3.			dB	At Nyquist Frequency

Insertion Loss	SDD21	$IL_{min}(f) = -0.005f^2 + 2 * IL_{catf}(f)$	-	$IL_{max}(f) = -0.015 * (8 + f)^2 + 2 * IL_{tcatf}(f)$	dB	<p>f is frequency in GHz ,  <math>IL_{catf}(f)</math> is the reference test fixture printed circuit board insertion loss per 4 Equation 92-35 of IEEE 802.3bj Standard at frequency f;                      Exclude the MCB insertion loss, at 13GHz, the loopback insertion loss is:                      SDD21MIN (13GHz) = -0.845dB, and                      SDD21MAX (13GHz) = -6.615dB</p>
Insertion Loss Deviation	ILD	-1.0	-	+1.0	dB	At Nyquist Frequency

### Package Outline

Dimensions are in millimeters. (Unit: mm)



LED:  
 Solid green: low-power mode  
 Solid red: high-power mode  
 Blinking green: low-power mode with alarm/warning flag  
 Blinking red: low-power mode with alarm/warning flag

### Ordering Information

Model Number	Part Number	Product Description
T-50-S-LB-000	1050100033000	SFP56 50GLoopback 0W, RED Pull-Tab
T-50-S-LB-025	1050100033025	SFP56 50G Loopback 2.5W, GREEN Pull-Tab