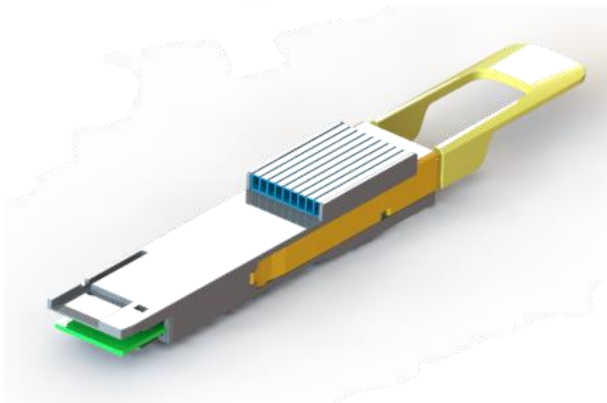
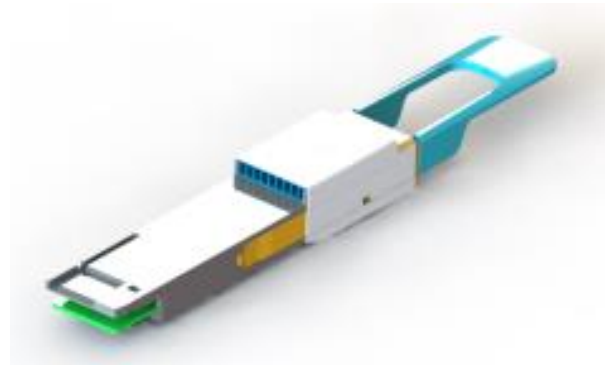


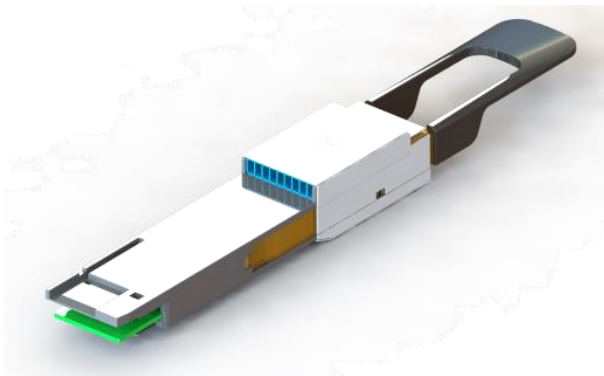
QSFP-DD 400G LOOPBACK MODULE



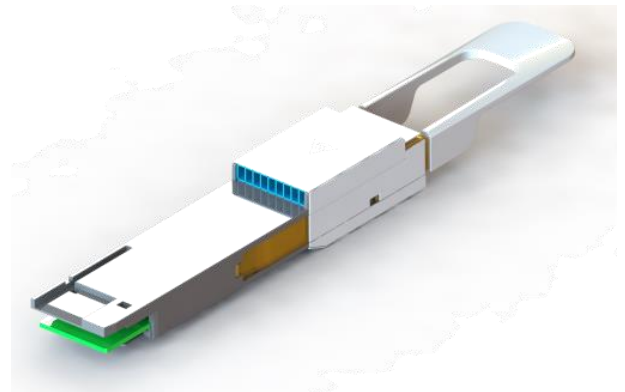
0-Watt



14-Watt TBD



16-Watt



20-Watt

FEATURES

- ◆ Industry's highest rated mating cycles for 2000 and above
- ◆ Built-in surge current mitigation technology
- ◆ Adjustable power consumption up to evenly distributed to the 3 regions, each region is individually
- ◆ Operating temperature: -40°C to 85°C
- ◆ +3.3V power supply
- ◆ Supports 8*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 heat dissipation technology for high power testing
- ◆ Custom EEPROM available
- ◆ A multi-color LED indicator for high/low power modes
- ◆ Hot-pluggable
- ◆ RoHS 2.0 compliant

REFERENCES

- [1] Common Management Interface Specification, Rev 3.0
- [2] QSFP-DD Hardware Specification, Rev 5.0
- [3] UM10204, I2 C-bus specification and user manual, Rev. 6 – 4 April 2014
- [4] IEEE Std 802.3cd
- [5] SFF-8024, SFF Cross Reference to Industry Products, Rev 4.4

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 200G/400G 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.

Absolute Maximum Ratings

Parameter	Symbol	Min	Max	Unit
Storage Temperature	Tst	-40	+85	°C
Operating Case Temperature	Tc	-40	+85	°C
Storage Relative Humidity	RHs	0	95	%
Operating Humidity	RHo	0	85	%
Supply Voltage	Vcc	2.97	3.63	V

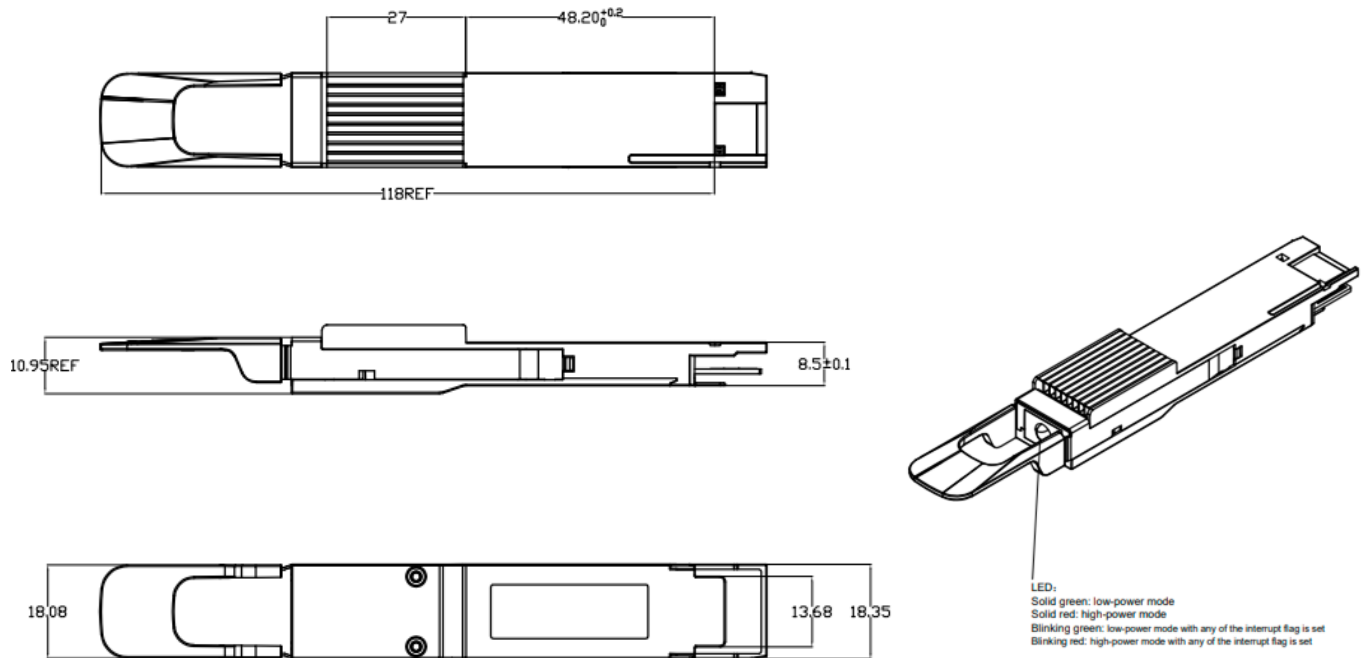
Recommended Operating Conditions

Parameter	Symbol	Min	Typical	Max	Unit
Operating Case temperature	Tc	-40		85	°C
Supply Voltage	Vcc	2.97	3.3	3.63	V
Data Rate	BRate	0.1	-	400	Gbps
Durability Cycles			2000	2250	Cycles

Electrical Specifications

Parameter	Symbol	Min	Typical	Max	Unit	Note
Differential input impedance	Zin	90	100	110	ohm	Differential Impedance
Insertion Loss	SDD21	$SDD21_{MIN} = -0.005 * f^2 - 2 * IL_{catf}(f)$	-	$SDD21_{MAX} = -0.015 * (8 + f)^2 - 2 * IL_{tcatf}(f)$	dB	f is frequency in GHz; $IL_{catf}(f)$ is the reference test fixture printed circuit board insertion loss3 at frequency f; Exclude the MCB insertion loss, at 13GHz, the loopback insertion loss is $SDD21_{MIN}(13GHz) = -0.845dB$, $SDD21_{MAX}(13GHz) = -6.615dB$
Insertion Loss Deviation	ILD	-1		1	dB	At Nyquist Frequency
Return Loss		IEEE 802.3bj CL92.10.3.				At Nyquist Frequency
Skew between lanes	SKEW			200	ps	

Mechanical Dimensions



Mechanical Drawing

Ordering Information

Model Number	Part Number	Product Description
T-50-QD-LB-000	1180100033000	QSFP-DD 400G LOOPBACK ,0W,YELLOW PULLTAB
T-50-QD-LB-140	1180100033140	QSFP-DD 400G LOOPBACK ,14W,CYAN PULLTAB
T-50-QD-LB-160	1180100033160	QSFP-DD 400G LOOPBACK ,16W,BLACK PULLTAB
T-50-QD-LB-200	1180100033200	QSFP-DD 400G LOOPBACK ,20W,WHITE PULLTAB