



# Product specification

## 1.25G-LX10 SFP 1310nm 10km Dom Transceiver

### 15-SFPBXSMLC004



## Description

The 15-SFPBXSMLC004 are small form factor pluggable (SFP) transceivers compatible with multi-sourcing agreement (MSA). They are suitable for single-mode fibre (SMF) communications in 1.25Gbps Ethernet and 1G/2G Fibre Channel

Hughes transceivers are Class 1 Laser Products compliant with FDA regulations and meet Class 1 eye safety requirements of EN 60825 and the electrical safety requirements of EN 60950.

## Maximum Ratings

Parameter	Symbol	Min.	Max.	Unit
Supply Voltage	V <sub>cc</sub>	-0.5	3.6	V
Storage Temperature	T <sub>s</sub>	-40	85	°C

## Recommended Operating Conditions

Parameter	Symbol	Min.	Typical	Max.	Unit
Power Supply Voltage	V <sub>cc</sub>	3.15	3.3	3.45	V
Power Supply Current	I <sub>cc</sub>			250	mA
Data Rate			1.25	2.125	GBps
Max Link Length on 9/125µm SMF	L <sub>max</sub>		10		km

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### Optical Specifications

Parameter	Symbol	Min.	Typical	Max.	Unit
<b>Transmitter</b>					
Centre Wavelength	$\lambda_c$	1260	1310	1360	nm
Spectral Width (RMS)	$\sigma$			4	nm
Average Output Power	P <sub>out</sub>	-9		-3	dBm
Extinction Ratio	ER	9			dB
Optical Rise/Fall Time	tr/tf			1	ns
<b>Receiver</b>					
Centre Wavelength	$\lambda_c$	1200	1310	1600	nm
Receiver Sensitivity	P <sub>IN</sub>			-23	dBm
Receiver Overload	P <sub>max</sub>	1			dBm
LOS De-Assert	LOS <sub>D</sub>			-30	dBm
LOS Assert	LOS <sub>A</sub>	-35			dBm
LOS Hysteresis		0.5		4.5	dB

### Electrical Specifications

Parameter	Symbol	Min.	Typical	Max.	Unit
<b>Transmitter</b>					
Input Differential Impedance	Z <sub>in</sub>	90	100	110	$\Omega$
Data Input Swing Differential	V <sub>in</sub>	500		2400	mV
Tx-Dis Disable	V <sub>d</sub>	2.0		V <sub>cc</sub>	V
Tx-Dis Enable	V <sub>en</sub>	0		0.8	V
TX-Fault (Fault)		2.0		V <sub>cc</sub> +0.3	V
TX-Fault (Normal)		0		0.8	V
<b>Receiver</b>					
Data Output Swing Differential	V <sub>out</sub>	370		2000	mV
Rx-Los Fault	V <sub>lf</sub>	2.0		V <sub>cc</sub> +0.3	V
Rx-Los Normal	V <sub>ln</sub>	0		0+0.8	V





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### Pin Descriptions

Pin	Symbol	Description	Ref.
1	VEET	Transmitter Ground (Common with Receiver Ground)	6.1
2	TFAULT	Transmitter Fault.	
3	TDIS	Transmitter Disable. Laser output disabled on high or open.	6.2
4	MOD_DEF(2)	Module Definition 2. Data line for Serial ID.	6.3
5	MOD_DEF(1)	Module Definition 1. Clock line for Serial ID.	6.3
6	MOD_DEF(0)	Module Definition 0. Grounded within the module.	6.3
7	Rate Select	No connection required	
8	LOS	Loss of Signal indication. Logic 0 indicates normal	6.4
9	VEER	Receiver Ground (Common with Transmitter Ground)	6.1
10	VEER	Receiver Ground (Common with Transmitter Ground)	6.1
11	VEER	Receiver Ground (Common with Transmitter Ground)	6.1
12	RD-	Receiver Inverted DATA out. AC Coupled.	
13	RD+	Receiver Non-inverted DATA out. AC Coupled.	
14	VEER	Receiver Ground (Common with Transmitter Ground)	6.1
15	VCCR	Receiver Power Supply	
16	VCCT	Transmitter Power Supply	
17	VEET	Transmitter Ground (Common with Receiver Ground)	6.1
18	TD+	Transmitter Non-Inverted DATA in. AC Coupled.	
19	TD-	Transmitter Inverted DATA in. AC Coupled.	
20	VEET	Transmitter Ground (Common with Receiver Ground)	6.1

#### Notes:

- 6.1 Circuit ground is internally isolated from chassis ground.
- 6.2 Laser output disabled on TDIS >2.0V or open, enabled on TDIS <0.8V.
- 6.3 Should be pulled up with 4.7k - 10kohms on host board to a voltage between 2.0V and 3.6V. MOD\_DEF(0) pulls line low to indicate module is plugged in.
- 6.4 LOS is open collector output. Should be pulled up with 4.7k -10kohms on host board to a voltage between 2.0V and 3.6V. Logic 0 indicates normal operation; logic 1 indicates loss of signal.





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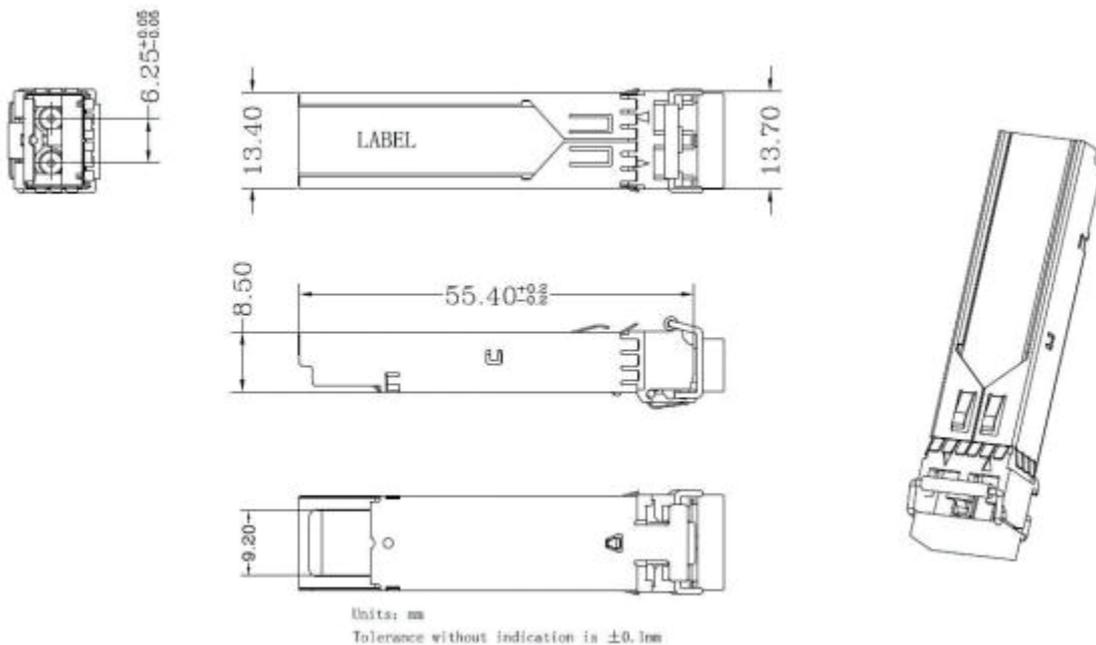
### 15-SFPBXSMC004

#### EEPROM & DDM threshold

2 Wire Address 1010000X (A0h)	
0~95	Serial ID Defined by SFP MSA (96 bytes)
96~127	Vendor Specific (32 bytes)
128~255	Reserved (128 bytes)

	Low Alarm	Low Warn	High Warn	High Alarm
Temperature	- 5°C	0°C	70°C	75°C
Voltage	3V	3.1V	3.6V	3.7V
TX Bias	3mA	4mA	70mA	75mA
Tx Power	-13.5dBm	-9.5dBm	-1dBm	1dBm
Rx Power	-23dBm	-19dBm	-3dBm	1dBm

#### Mechanical Drawing



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