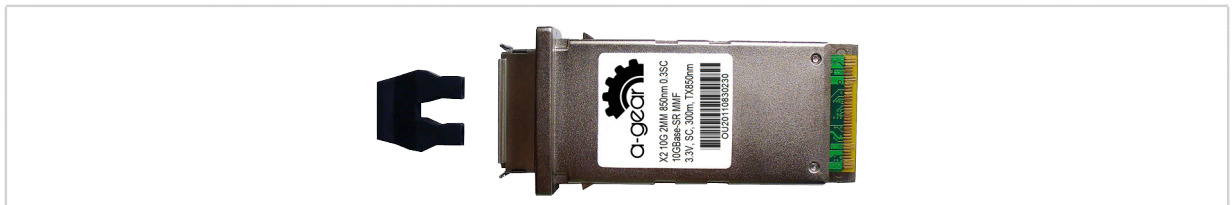


# Product Specification

## X2 10G SR 03km SC Optical Transceiver



### 1. Features

- XAUI Electrical Interface: 4 Lanes @ 3.125Gbit/s
- Hot Z-Pluggable
- SC-Duplex Optical Receptacle
- MDIO, DOM Support
- 850 nm wavelength VCSEL
- PIN Photo-detector
- Operating Case Temperature: 0 to 70 °C
- Compliant to IEEE 802.3ae 10GBASE-ER Application
- Compliant to X2 MSA
- Mechanical Footprint: 91mm L x 36mm W x 13.46\* H [\*Other heights available]

### 2. Reference

- IEEE 802.3ae as 10GBASE-ER, X2 MSA Release 1.0b.

### 3. Product Description

A-GEAR's 10GbE X2 transceiver module X2 10G SR 03km SC is a hot pluggable in the Z-direction module that is usable in typical router line card applications, Storage, IP network and LAN and compliant to X2 MSA. The X2 10G SR 03km SC is a fully integrated 10.3Gb it/s optical transceiver module that consists of a 10.3Gbit/s optical transmitter and receiver, XAUI interface, Mux and Demux with clock and data recovery(CDR). This version of A-GEAR Inc. transceiver line uses an 850nm VCSEL Laser Diode to achieve 300m over multi-mode fiber as 10GBASE-ER of the IEEE 802.3ae.

## 4. Absolute Maximum Ratings

Stresses in excess of the Absolute Maximum Ratings can cause permanent damage to the transceiver.

Parameter	Symbol	Min.	Max.	Unit
Supply Voltage	$V_{CC1}$	0	+5.5	V <sup>[1]</sup>
Supply Voltage	$V_{CC2}$	0	+3.6	V <sup>[2]</sup>
Supply Voltage	$V_{CC3}$	0	+ 1.5	V <sup>[3]</sup>
Optical Receiver Input	$P_{IMAX}$	-	+ 1.5	dBm <sup>[4]</sup>
Case Temperature	$T_C$	0	+70	°C <sup>[5]</sup>
Storage Temperature	$T_{STR}$	-40	+85	°C

**Notes:**

- [1] +5V
- [2] +3.3V
- [3] APS
- [4] Average
- [5] Figure 1

## 5. Operating Environment

Electrical and optical characteristics below are defined under this operating environment, unless otherwise specified.

Parameter	Symbol	Min.	Typical	Max.	Unit
Supply Voltage	$V_{CC1}$	4.75	5	5.25	V <sup>[1]</sup>
Supply Voltage	$V_{CC2}$	3.135	3.3	3.465	V <sup>[2]</sup>
Supply Voltage	$V_{CC3}$	1.152	1.2	1.248	V <sup>[3]</sup>
Case Temperature	$T_C$	0	25	70	°C <sup>[4]</sup>

**Notes:**

- [1] +5V
- [2] +3.3V
- [3] APS
- [4] Figure 1

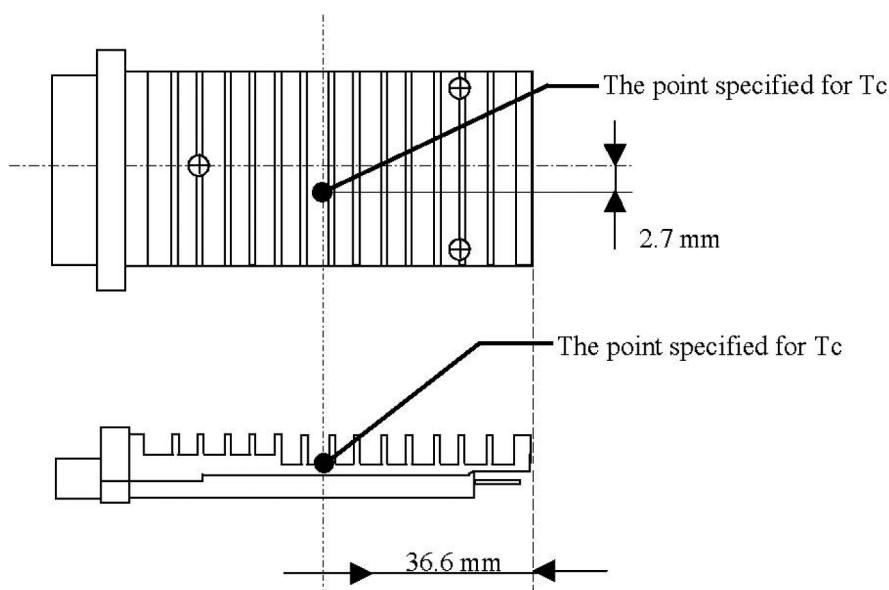


Figure 1. The Point Specified for Case Temperature ( $T_c$ ).

## 6. Optical Characteristics

Parameter	Symbol	Min.	Typical	Max.	Unit
Center Wavelength	$\lambda_c$	840	850	860	nm
Signaling speed		-	10.3125	-	Gbit/s
Signaling speed variation from nominal		-100	-	+ 100	ppm
Optical modulation amplitude	OMA	-5.2	-	-	dBm
Optical Output Power	$P_f$	-	-	+0.5	dBm <sup>[1]</sup>
Optical Waveform	-	-	-	-	
Side Mode Suppression Ratio	$S_r$	30	-	-	dB <sup>[1]</sup>
Extinction Ratio	$E_r$	3.5	-	-	dB
Off Transmit Power	$P_{off}$	-	-	-28	dBm <sup>[1]</sup>
Receiver Sensitivity in OMA	OMA rmin	-	-	-9.9	dBm
Receiver Overload	$R_{ro}$	+0.5	-	-	dBm <sup>[1]</sup>
Receiver Return Loss	RL	12	-	-	dB <sup>[1]</sup>

**Notes:**

[1] Average

## 7. Power Supply Characteristics

Parameter	Symbol	Min.	Typical	Max.	Unit
Supply Voltage	V <sub>CC1</sub>	4.75	5.00	5.25	V
Supply Voltage	V <sub>CC2</sub>	3.135	3.300	3.465	V
Supply Voltage	V <sub>CC3</sub>	1.15	1.20	1.25	V
Supply Current	I <sub>CC1</sub>	-	-	1.4	A <sup>[1]</sup>
Supply Current	I <sub>CC2</sub>	-	-	1.2	A <sup>[2]</sup>
Power Consumption	P <sub>Ds</sub>	-	-	3.3	W

**Notes:**

- [1] +3.3 V
- [2] APS

## 8. Mechanical dimensions

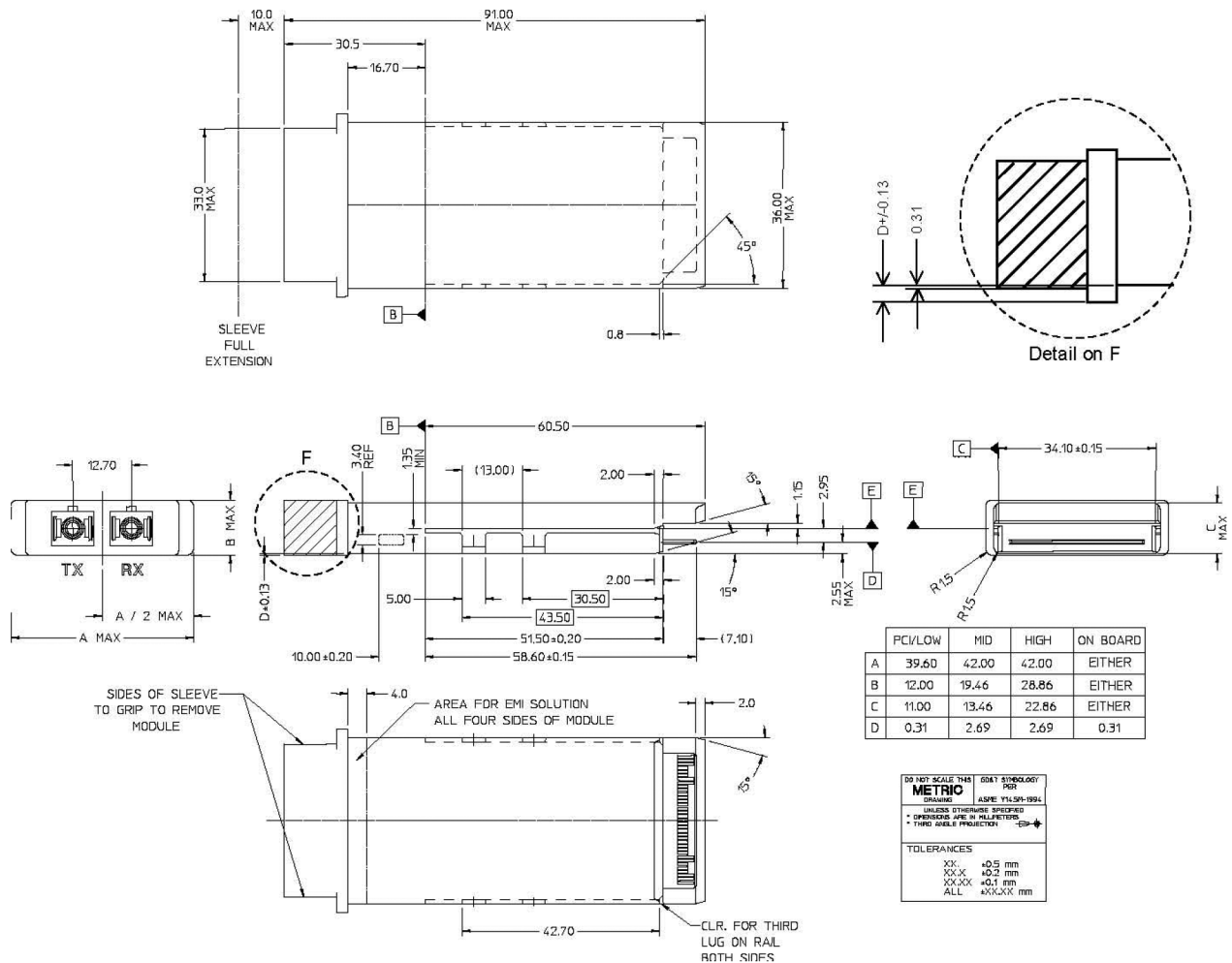


Figure 2. Mechanical dimensions.