



## AC6539 Series

### 10 Gbps High Gain Long Wavelength Single Mode ROSA



AC6539 with 6-pin  
XMD flex circuit

#### Features:

- Large area photodiode for excellent coupling from SM fibers
- High Gain TIA with high sensitivity
- Low cost TO-46 package with differential output
- Wide operation temperature (-40°C to +85°C)
- Suitable for 10 Gbps applications needing receptacle style connectorization

Available with a flex circuit configuration

#### Electrical/Optical Characteristics ( $T_c=25^\circ\text{C}$ )

Parameter	Symbol	Min.	Typ.	Max.	Unit
Power Supply	$V_{cc}$	3.1	3.3	3.5	V
Supply Current <sup>(1)</sup>	$I_{cc}$		60	65	mA
Photodetector Bias	$V_{PD}$		3.3		V
Bandwidth	BW	6	8		GHz
Low-Frequency Cut Off	LF		100		kHz
Group Delay Variation <sup>(2)</sup>	GDV		$\pm 20$		ps
Wavelength	$\lambda$	1250		1600	nm
Optical Overload <sup>(3,4)</sup>	$P_{over}$	+3	+4		dBm
Sensitivity <sup>(3,4)</sup>	$P_{sens}$		-19	-17.5	dBm
Conversion Gain <sup>(5)</sup>		1100	1500		V/W
Max. Diff. Output Voltage	$V_{diff}$		250		mVpp

(1) No Loads

(2) 1 GHz to 8 GHz

(3)  $\lambda=1550$  nm

(4) BER =  $10^{-12}$ , PRBS  $2^{31}-1$ , ER = 10 dB

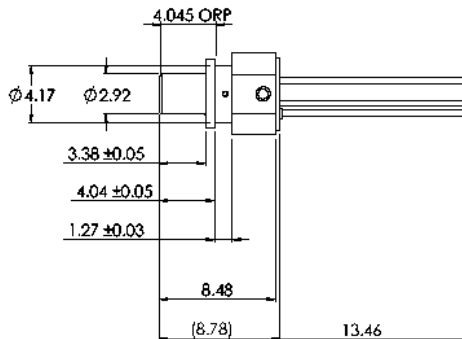
(5) Single ended output voltage (peak to peak) to optical power swing (OMA)

#### Absolute Maximum Ratings:

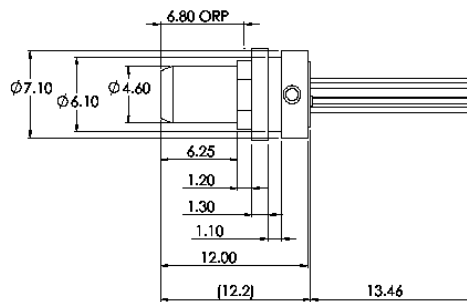
Parameter	Symbol	Min	Max	Unit
Case Temperature	$T_C$	-40	+85	°C
Storage Temperature	$T_{stg}$	-40	100	°C
Humidity Range	RH	5	95	%
Amplifier Bias Voltage	$V_{ccmax}$		7.75	V
Input Optical Power	$P_{max}$		+5	dBm
Load Solder Temp. and Time			260 °C, 10sec	



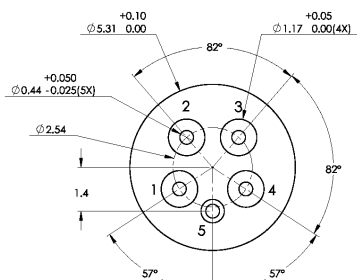
Outline Drawing (Customer special order is available):



**Plastic LC 5-pin version**



**Plastic SC 5-pin version**

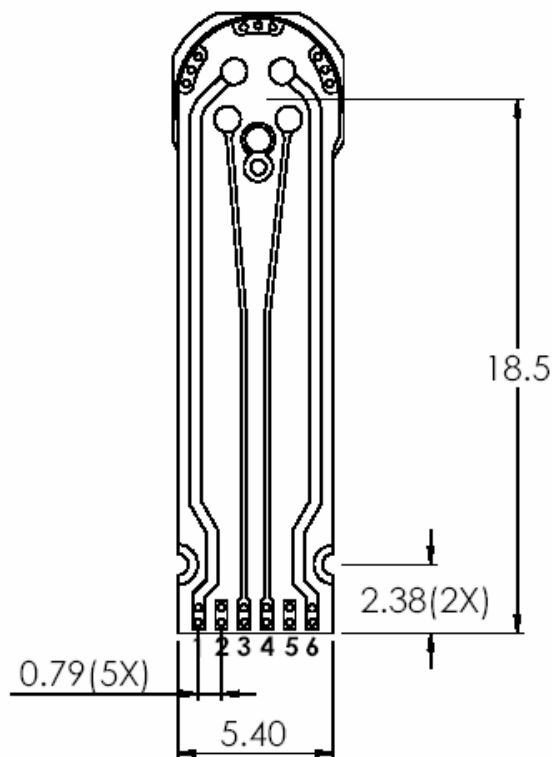


**Bottom View**

<b>5-pin straight lead Pin-out Assignment</b>	
Pin #	“B”
1	Dout-P
2	Vcc
3	Vpd
4	Dout-N
5	GND



### 6-pin Flex Circuit (Trace View)



6-pin Flex Pin-out	
Pin #	FL2
1	Vcc
2	GND
3	Dout-P
4	Dout-N
5	GND
6	Vpd

#### Ordering Information:

##### AC6539-B-YZ-FLX

**B** = Pin-out: “B” see 5-pin straight lead pin-out Assignment table.

**YZ** = Receptacle type: “L1” for LC Plastic, “L2” for LC Metal, “L3” for LC metal (-27dB ORL), “S1” for SC plastic

**FL2** = Flex circuit option “FL2” for 6-pin flex

Example: **AC6539-B-L1-FL2** is an Archcom 5-pin, 10 Gbps High Gain ROSA for SM fiber with type-B pin-out with low cost plastic LC receptacle and 6-pin flex circuit.

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