



## AC6521 Series

### 2.5 Gbps Long Wavelength Single Mode ROSA



Photo showing ROSA with optional -30dB  
ORL receptacle (option: L3 or L4)

#### Features:

- Low power dissipation (140 mW), +3.3 V operation
- Wide dynamic range with differential output
- High Optical Return Loss, <-30 dB (option)
- Wide operation temperature (-40°C to +85°C)
- Suitable for 2.5 Gbps applications needing receptacle style connectorization

**Applications:** Telecom and Datacom

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

Parameter	Symbol	Min.	Typ.	Max.	Unit
Power Supply	$V_{cc}$	3.0	3.3	3.6	V
Supply Current <sup>(1)</sup>	$I_{cc}$		42	58	mA
Photodetector Bias	$V_{PD}$		3.3		V
Bandwidth	BW	1.5	2.0		GHz
Low-Frequency Cut Off	LF		5		kHz
Rise Time/Fall Time <sup>(2,3)</sup>	$T_r/T_f$			150	ps
Wavelength	$\lambda$	1100		1650	nm
Responsivity	R	0.75	0.85		A/W
Optical Return Loss <sup>(5)</sup>	ORL	-30			dB
Single Ended Output Impedance	$R_o$		50		Ohms
Sensitivity <sup>(3,4)</sup>	$P_{sens}$		-24	-23	dBm
Optical Overload <sup>(3,4)</sup>	$P_{ovld}$	-1	0		dBm
Conversion Gain <sup>(6)</sup>	CG	1400	1800		V/W
Max. Diff. Output Voltage	$V_{diff}$		330	350	mVpp

(1) No Loads

(2) 20% to 80% at -20 dBm input

(3)  $\lambda=1550$  nm

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

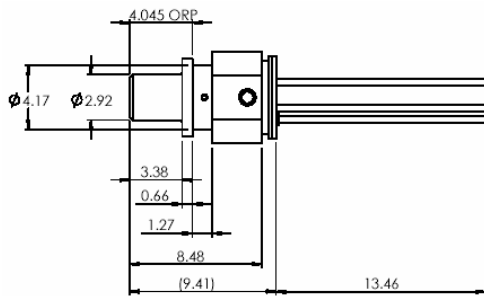
(5) For receptacle option L3 or L4, -14dB otherwise

(6) Single ended output voltage (peak to peak) to optical power swing (OMA) at  $P_{sens}$

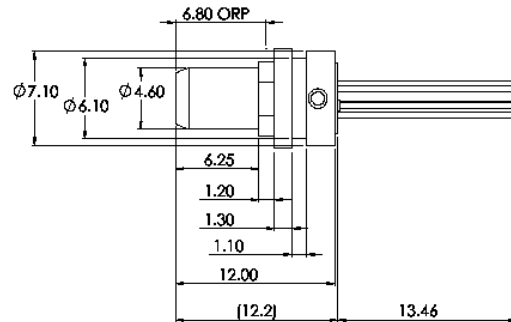
**Absolute Maximum Ratings:**

Parameter	Symbol	Min	Max	Unit
Case Temperature	$T_C$	-40	+85	$^{\circ}C$
Storage Temperature	$T_{stg}$	-40	100	$^{\circ}C$
Humidity Range	RH	5	95	%
Amplifier Bias Voltage	$V_{ccmax}$	-0.5	5.0	V
Input Optical Power	$P_{max}$		+6	dBm
Load Solder Temp. and Time			260 $^{\circ}C$ , 10sec	

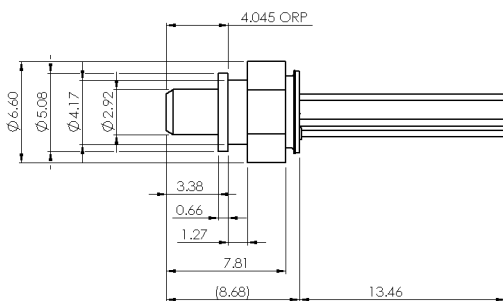
**Outline Drawings (Customer special order is available):**



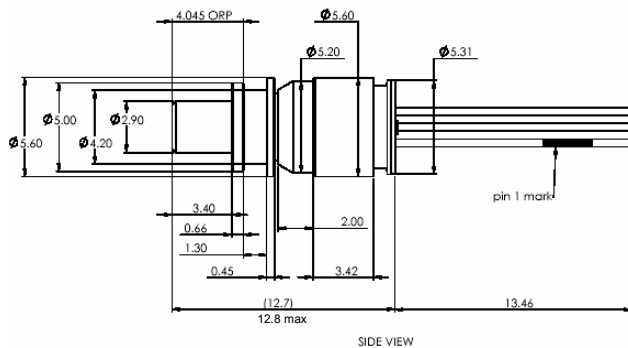
**Plastic LC receptacle, Option L1**



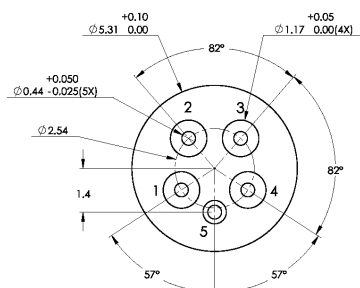
**Plastic SC receptacle, Option S1**



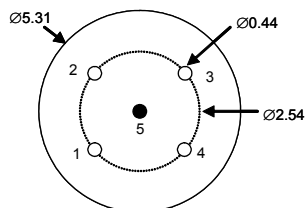
**Metal LC receptacle, Option L2**



**Metal LC receptacle with -30dB ORL, Options L3 and L4. Type F pinout shown**



**Bottom View for  
Pin-out “B” and “E”**



**Bottom View for  
Pin-out “F”**

5-pin Pin-out Assignment			
Pin #	“B”	“E”	“F”*
1	Dout-P	V <sub>PD</sub>	Dout-P
2	V <sub>CC</sub>	Dout-N	V <sub>pd</sub>
3	V <sub>PD</sub>	Dout-P	V <sub>CC</sub>
4	Dout-N	V <sub>CC</sub>	Dout-N
5	GND	GND	GND

Note: “F” uses alternate 5-pin header. See Bottom View drawings

### Ordering Information:

#### AC6521-W-YZ

**W** = Pin-out: “B,” “E,” or “F” see table and Bottom View Drawings. (Custom pin-out available)

**YZ** = Receptacle type: “L1” for LC Plastic, “L2” for LC Metal, “L3” for LC metal (-30dB ORL), “L4” for LC metal (-30dB ORL) electrically isolated from header, “S1” for SC plastic

Example: **AC6521-B-L3** is an Archcom 5-pin, 2.5 Gbps pin ROSA with Type-B pin-out with -30dB optical return loss metal LC receptacle

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