Preliminary

TMC-1C42-001

1 GHz InGaAs PIN plus Pre-amplifier

FEATURES:

- Industry standard TO-46 package with cap lens.
- Optimized for fiber optic application.
- Design for long wavelength 1.25 Gbps application.

ELECTRO-OPTICAL CHARACTERISTICS:

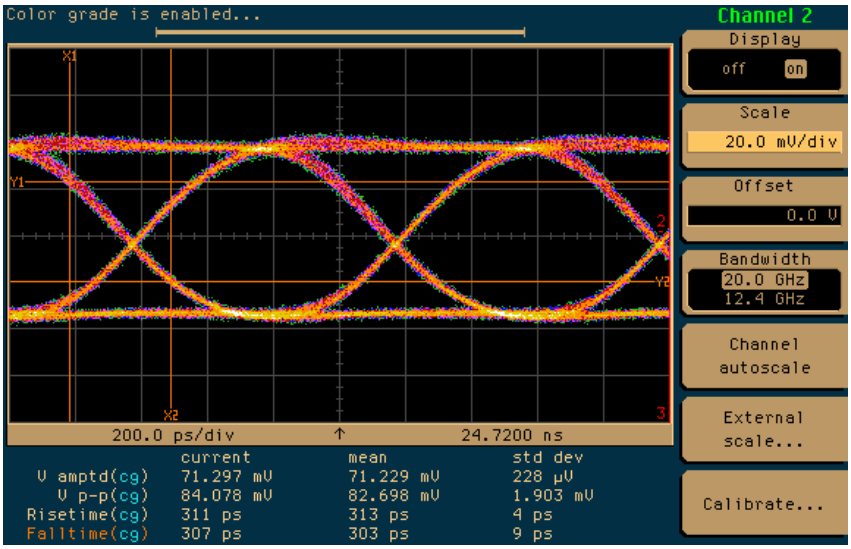
PARAMETERS	SYMBOL	MIN	TYP	MAX	UNIT	TEST CONDITIONS
Power Supply	V_{CC}	3.0		5.5	V	
Supply Current	I_{CC}		26	50	mA	no loads
Differential Responsivity	Rd	1.9	2.5	3.0	mV/μW	R_{load} = 100 ohm, P = -15 dBm @ 50 MHz, 1310nm
Single Ended Responsivity	Rs	0.9	1.2	1.5	mV/μW	R_{load} = 50 ohm, P = -15 dBm @ 50 MHz, 1310nm
Small-Signal Bandwidth	BW	750	920	1100	MHz	
Low-Frequency Cut off	LF		44		kHz	
Rise Time/Fall Time	tr/tf		300	400	ps	20 % ~ 80 %, P = -15 dBm, 1310nm
Single Ended Output Impedance	R_O	48	50	52	ohm	
RMS Input Referred Noise			220	290	nW	
Maximum Differential Output Voltage		185	250	415	mV p-p	P = 0 dBm, 1310nm
Wavelength	λ	1270		1380	nm	
Focal length	F	0.9	1.3	1.7	mm	From the surface of lens

ABSOLUTE MAXIMUM RATINGS:

PARAMETERS	MIN	MAX	UNIT	CONDITIONS
Storage Temperature	-40	100	°C	
Operating Temperature	-20	85	°C	
Lead Solder Temperature		260	°C	10 seconds

Eye Diagram: (typical)

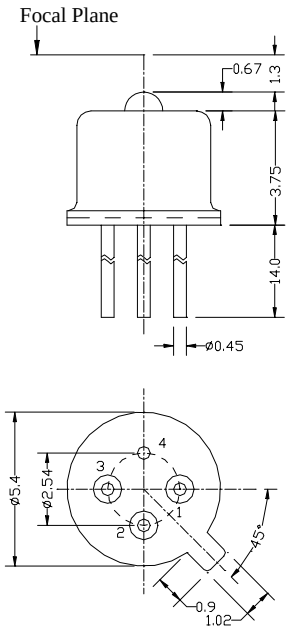
R_{load} = 50 ohm, P = -15 dBm @ 1250 Mbps, 1310 nm, PRBS = 2^7-1,



tr = 311ps, tf = 307ps

OUTLINE DIMENSIONS:

UNIT: mm



Pinout

1. $\overline{\text{Dout}}$
2. Dout
3. Vcc
4. Gnd

Notice:

1. The orientation of header tab is for reference only, the mechanical location might be changed upon the replaceable materials while the optical design is kept the same.
2. Regular delivery is *tabless*.