Preliminary

TMC-8D42–002

1 GHz GaAs PIN plus Pre-amplifier

FEATURES:

• Industry standard TO-46 package with cap lens.

• Optimized for fiber optic application.

• Suitable for 1.25 Gbps applications.

ELECTRO-OPTICAL CHARACTERISTICS:

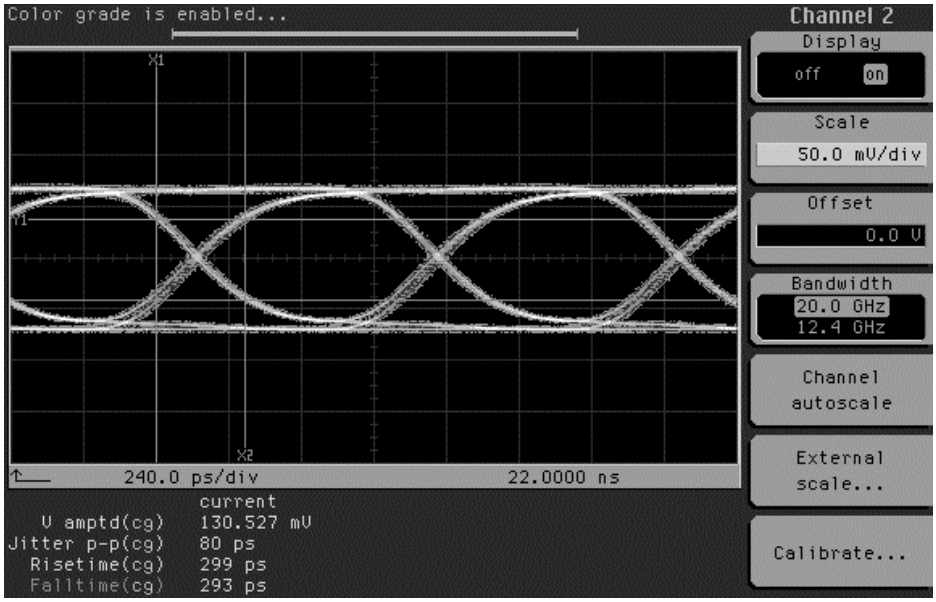
PARAMETERS	SYMBOL	MIN	TYP	MAX	UNIT	TEST CONDITIONS
Power Supply	V_{CC}	3.0		5.5	V	
Supply Current	I_{CC}		26	50	mA	no loads
Differential Responsivity	Rd	1.1	1.4	1.7	mV/μW	R_{load} = 100 ohm, P = -15 dBm @ 50 MHz, 850 nm
Single Ended Responsivity	Rs	0.5	0.7	0.8	mV/μW	R_{load} = 50 ohm, P = -15 dBm @ 50 MHz, 850 nm
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 = -15dBm, 850nm
Single Ended Output Impedance	R_O	48	50	52	ohm	
RMS Input Referred Noise			390	520	nW	
Maximum Differential Output Voltage		185	250	415	mV p-p	P = 0 dBm, 850nm
RMS Output Referred Noise	Vn			1.6	mV	P = 0 dBm, 850nm
Power Supply Rejection Ratio	PSRR		50		dB	
Wavelength	λ	770		860	nm	

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

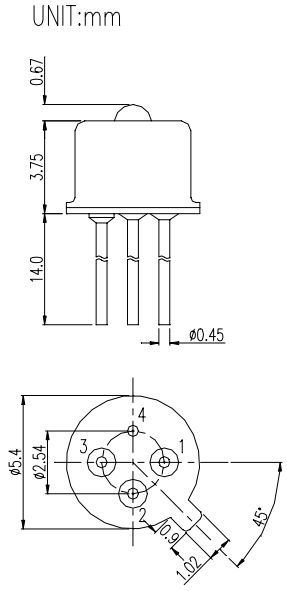
Eye Diagram:

R_{load} = 50 ohm, P = -10 dBm @ 1250 Mbps, 850nm, PRBS = 2^7-1,



tr = 299ps, tf = 293ps, Jitter p-p = 80ps

OUTLINE DIMENSIONS:



Pinout

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