

TMC-1A59-718

10Gbps InGaAs APD plus Pre-amplifier

FEATURES:

- Industry standard TO-46 package with short cap lens.
- Design for long wavelength 10.3125Gbps application.
- Single power supply +3.3V.



ELECTRO-OPTICAL CHARACTERISTICS: ($T_A = 25^\circ\text{C}$)

PARAMETERS	SYMBOL	MIN	TYP	MAX	UNIT	TEST CONDITIONS
Power Supply	V_{CC}	3.0	3.3	3.6	V	
Supply Current	I_{CC}	20	27	38	mA	no loads
APDTIA Breakdown Voltage	V_{BR}	32		43	V	$I_d = 10\mu\text{A}$
Operating Voltage	V_{OP}		$V_{BR}-3.5$			$V_{CC} = 3.3\text{V}$
V_{BR} Temperature Coefficient	γ	0.02	0.03	0.04	$^\circ\text{C}^{-1}$	
Differential Responsivity	R_d		13.0		$\text{mV}/\mu\text{W}$	$R_{load} = 100\text{ohm}$, $P = -20\text{dBm}$, $\lambda = 1550\text{nm}$
Single Ended Responsivity	R_s		6.5		$\text{mV}/\mu\text{W}$	$R_{load} = 50\text{ohm}$, $P = -20\text{dBm}$, $\lambda = 1550\text{nm}$
Small-Signal Bandwidth	BW		6.2		GHz	$P = -20\text{dBm}^{(1)}$
Low-Frequency Cut off	LF			30	kHz	
Saturation Power	P_{Sat}	-7			dBm	$V_{op} = (V_{BR} - 3.5\text{V})$
Single Ended Output Impedance	R_o		50		ohm	
Wavelength	λ	1260		1600	nm	
Sensitivity				-25.0	dBm	$\lambda = 1550\text{nm}$, @10.3125Gbps ⁽¹⁾ PRBS 31, ER=7dB, BER=1E-12 $V_{op} = (V_{BR} - 3.5\text{V})$
				-30.5	dBm	$\lambda = 1550\text{nm}$, @10.3125Gbps ⁽¹⁾ PRBS 31, ER=7dB, BER=1E-3 $V_{op} = (V_{BR} - 3.5\text{V})$

Notes:

1. The spec. and test data are subjected to ROSM level (flexible circuit attached) measurement.

ABSOLUTE MAXIMUM RATINGS:

PARAMETERS	MIN	MAX	UNIT	TEST CONDITIONS
Storage Temperature	-40	100	$^\circ\text{C}$	
Operating Temperature	-40	85	$^\circ\text{C}$	
Reverse current		3.6	mA	$V_{op} = (V_{BR} - 3.5\text{V})$
Lead Solder Temperature		260	$^\circ\text{C}$	10 seconds



