

InGaAs 1 mm Quadrant PIN Preamplifier Module



CMC Electronics' 264-339837 series is an InGaAs 1 mm quadrant PIN receiver with four (4) built-in trans-impedance amplifiers in a 1-inch 12-lead TO-can package.

Customizations to bandwidth, rise time and responsivity will be available upon request.

Features

- 1 mm diameter quadrant InGaAs PIN
- 2 MHz bandwidth
- Low noise Equivalent Power (NEP)
- Spectral Response: 1000 – 1600 nm
- Eye safe operating band
- Common Cathode configuration
- Hermetically Sealed 1-inch TO-can

Applications

- Free-Space Optical (FSO) Communication
- Precision Guided Munition (PGM)
- Laser Warning Systems (LWS)
- Laser Range Finding (LRF)
- Laser Spot Tracking
- Laser Alignment
- Position Sensor

Table 1. Electro-Optical Characteristics

Unless otherwise specified: $T_A = 25\text{ }^{\circ}\text{C}$, $V_+ = 5.0\text{ V}$, $V_- = -5.0\text{ V}$, $V_{\text{PIN}} = 5.0$, $R_L = 100\text{ }\Omega$, $\lambda = 1570\text{ nm} \pm 10\text{ nm}$

Parameter	Min.	Typ.	Max.	Units
Responsivity				
1060 nm		3.0		MV/W
1550 nm		4.1		MV/W
Noise equivalent power (DC -100 kHz)		175		fW/ $\sqrt{\text{Hz}}$
Output impedance, R_{out}		10		Ω
Bandwidth		2		MHz
Rise time (10-90 %)		200		ns
Fall time (90-10 %)		200		ns
Linear Output Voltage Swing (Pulse)	1.5	2.5		V
Output Offset Voltage	-0.5	0	0.5	V
Supply current V_+ (pin 2)		110	250	mA
Supply current V_- (pin 8)		65	150	mA
Channel to channel crosstalk		5	10	%
Quadrant uniformity			5	%

Table 2. Absolute-Maximum Ratings, Limiting Values

Parameter	Symbol	Min.	Max.	Units
Average photocurrent	I_{ave}		25	μA
Maximum Optical Power, CW			500	nW
Preamplifier Voltage V_+	V_{pos}		6	V
Preamplifier Voltage V_-	V_{neg}	-6		V
Quadrant PIN Breakdown Voltage	V_{br}		15	V
Operating Temperature	T_{op}	-40	85	$^{\circ}\text{C}$
Storage Temperature	T_{stor}	-55	125	$^{\circ}\text{C}$
Soldering Temperature (5 s, leads only)			250	$^{\circ}\text{C}$

Figure 1. Typical Normalized Responsivity

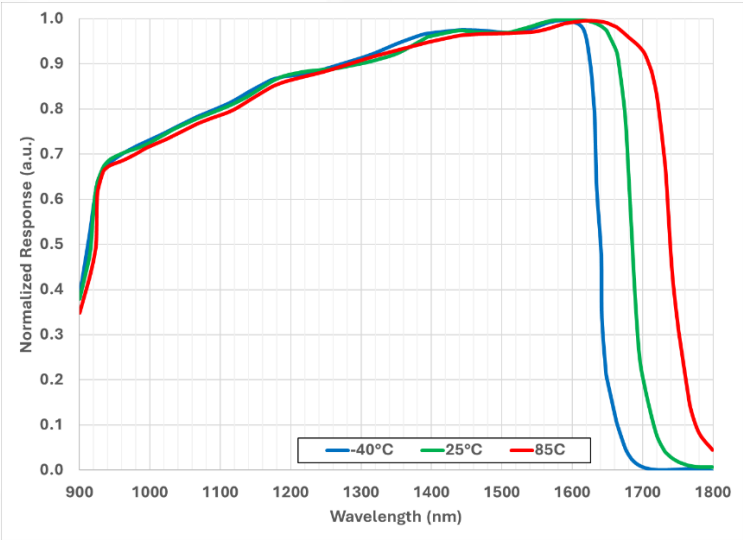
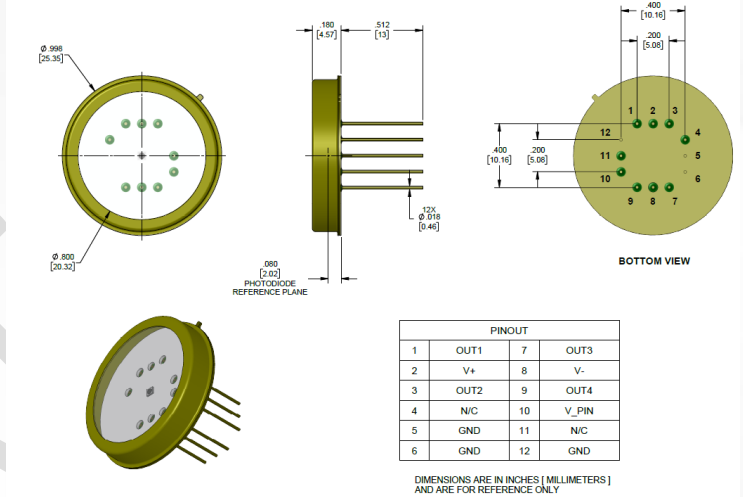


Figure 2. Package Dimension and Pinout

Unless otherwise specified, dimensions are in inches (mm) and are for reference only.



VAR Options

VAR	264-33837-VAR
-001	InGaAs PIN 1 mm diameter active area, TIA



For more information, visit www.cmcelectronics.ca/optoelectronics or email us at opto@cmcelectronics.ca

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