

InGaAs 50, 80 and 200 um Avalanche Photodiode in Hermetic Package



CMC Electronics' 264-339767-VAR series is an InGaAs APD with low k factor, low capacitance and high responsivity, in a TO-hermetic package. Based on an industry proven design optimized for fast overload recovery, the 264-339767 InGaAs APDs have a high QE (Quantum Efficiency) over the wavelength of 1000 to 1600 nm. Low NEP at high temperature can be achieved with the APD's low leakage current.

Temperature compensation for constant responsivity is eased by the large delta V.

Customization is possible (3 VAR already available).

Electro-Optical Characteristics at $T_A=25^\circ\text{C}$

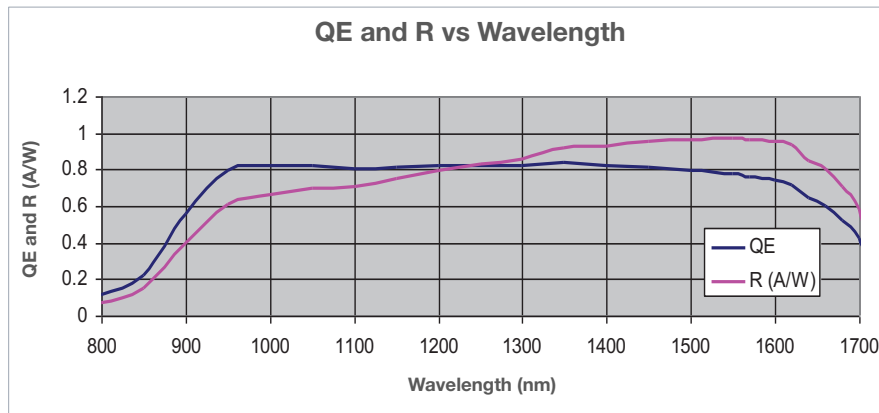


Figure 1. Responsivity and Quantum Efficiency

FEATURES

- Low k Factor of 0.17
- Fast Overload Recovery
- High Delta V
- Wide Operating Temperature Range
- Hermetic TO-46/TO-18 Case

APPLICATIONS

- Range Finding
- LiDAR
- Laser Scanning
- Instrumentation
- Industrial, Analytical

Electro-Optical Characteristics at $T_A=25^\circ\text{C}$
Conditions: $T_A=25^\circ\text{C}$, $M=10$ unless otherwise specified

Parameter	200 μm DIA VAR -001			80 μm DIA VAR -002			50 μm DIA VAR -003			Unit
	Min.	Typ.	Max.	Min.	Typ.	Max.	Min.	Typ.	Max.	
V_R for specified responsivity	25	*note1	80	25	*note1	80	25	*note1	80	V
$V_{BR} - \text{VOP (Delta-V)}$	5	8	-	5	8	-	5	8	-	V
Spectral Noise Current (In) @ 25°C	-	0.3	0.9	-	0.1	0.4	-	-	0.3	pA/√Hz
Bandwidth, f_{-3dB}	-	1.0	-	-	2.0	-	-	2.5	-	GHz
Responsivity (R) 1550 nm, $M=10$	9.4	-	-	9.4	-	-	9.4	-	-	A/W
Maximum Useable Gain ⁽²⁾ (M)	10	20	-	10	20	-	10	20	-	
Capacitance	-	2.0	2.4	-	0.65	0.7	-	0.55	0.6	pF
Operating Temperature	-45		+85	-45		+85	-45		+85	°C
Storage Temperature	-55		+125	-55		+125	-55		+125	°C

Notes: 1. V_{BR} as specified on datasheet of each device.
 2. Noise increases with gain and depends on bulk and surface currents.

Package Dimension and Pinout

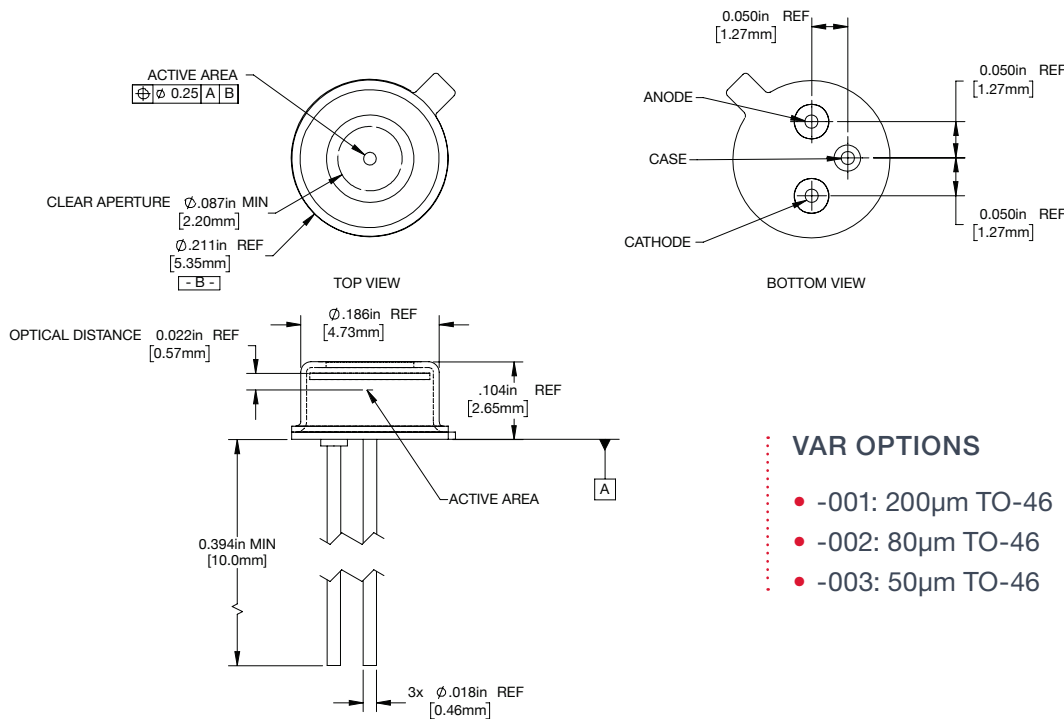


Figure 2. PACKAGE DIMENSIONS [mm]