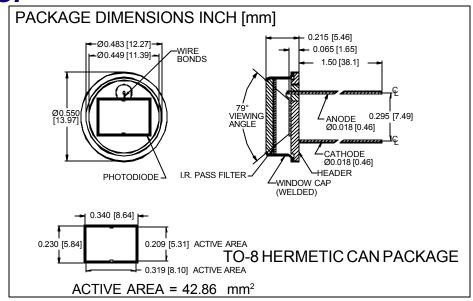
# **PHOTONIC DETECTORS INC**

## Silicon Photodiode, Near I.R. Photoconductive Type PDI-C109-F





RESPONSIVITY (A/W)

#### **FEATURES**

#### High speed

- Match to I.R. emitters
- Hermetic package

#### DESCRIPTION

The PDI-C109-F is a silicon, PIN planar • I.R. pass visible rejection diffused photodiode with NIR pass, visible light rejection optical filter. Ideal for high speed, low capacitance, photoconductive NIR applications. Packaged in a hermetic TO-8 metal can with a flat window cap.

### ABSOLUTE MAXIMUM RATING (TA=25°C unless otherwise noted)

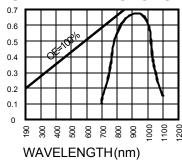
SYMBOL	PARAMETER	MIN	MAX	UNITS
V <sub>BR</sub>	Reverse Voltage		100	V
T <sub>STG</sub>	Storage Temperature	-55	+100	∘C
То	Operating Temperature Range	-40	+80	∘C
Ts	Soldering Temperature*		+240	⊙C
IL	Light Current		500	mA

<sup>\*1/16</sup> inch from case for 3 secs max

#### **APPLICATIONS**

- I.R. detector
- I.R. laser detector
- Photo-interrupters
- Industrial controls

#### **SPECTRALRESPONSE**



#### ELECTRO-OPTICAL CHARACTERISTICS (TA=25°C unless otherwise noted)

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SYMBOL	CHARACTERISTIC	TEST CONDITIONS	MIN	TYP	MAX	UNITS
Isc	Short Circuit Current	H = 100 fc, 2850 K	405	450		$\mu$ A
ΙD	Dark Current	H = 0, V <sub>R</sub> = 10 V		5	15	nA
RsH	Shunt Resistance	$H = 0, V_R = 10 \text{ mV}$	30	100		MΩ
TC R <sub>SH</sub>	RSH Temp. Coefficient	$H = 0, V_R = 10 \text{ mV}$		-8		%/℃
Сл	Junction Capacitance	$H = 0, V_R = 10 V^{**}$		120		рF
λrange	Spectral Application Range	Spot Scan	700		1100	nm
λр	Spectral Response - Peak	Spot Scan		950		nm
V <sub>BR</sub>	Breakdown Voltage	I = 10 μA	30	50		V
NEP	Noise Equivalent Power	VR = 10 V @ Peak		5x10 <sup>-13</sup>		W/√ <sub>Hz</sub>
tr	Response Time	RL = $1 \text{ K}\Omega \text{ V}_{\text{B}} = 50 \text{ V}$		25		nS