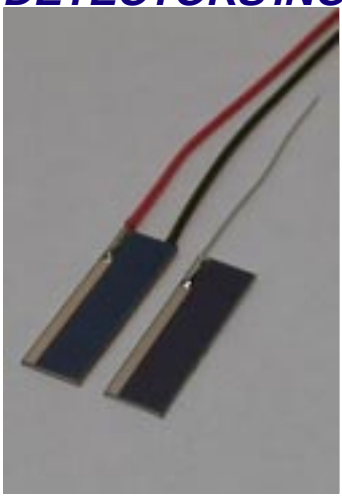
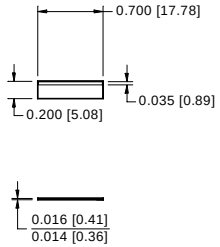
PHOTONIC DETECTORS INC.

Silicon Photodiode, Blue Enhanced Solderable Chips

Photoconductive Type PDB-C612 Photovoltaic Type PDB-V612

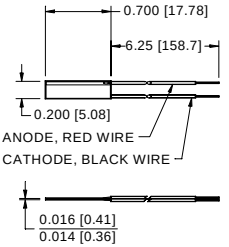


PACKAGE DIMENSIONS INCH (mm)



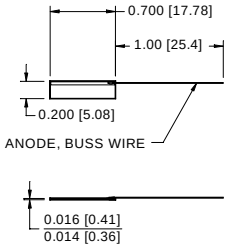
BARE CHIP

ACTIVE AREA = 68.7 mm²
PDB-C612-1
PDB-V612-1



30 GAGE P.V.C. WIRE

PDB-C612-2
PDB-V612-2



30 GAGE BUSS WIRE

PDB-C612-3
PDB-V612-3

FEATURES

- Blue enhanced
- Photovoltaic type
- Photoconductive type
- High quantum efficiency

DESCRIPTION: Low cost blue enhanced planar diffused silicon solderable photodiode. The **PDB-V612** cell is designed for low noise, photovoltaic applications. The **PDB-C612** cell is designed for low capacitance, high speed, photoconductive operation. They are available bare, PVC or buss wire leads.

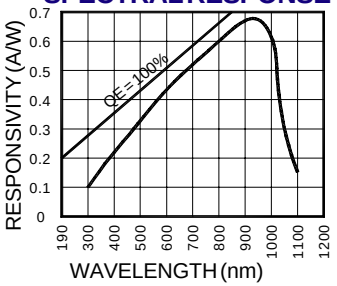
APPLICATIONS

- Optical encoder
- Position sensor
- Industrial controls
- Instrumentation

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

SYMBOL	PARAMETER	PDB-C612		PDB-V612		UNITS
		MIN	MAX	MIN	MAX	
V_{BR}	Reverse Voltage		75		25	V
T_{STG}	Storage Temperature	-40	+125	-40	+125	°C
To	Operating Temperature Range	-40	+100	-40	+100	°C
Ts	Soldering Temperature		+224		+224	°C
I_L	Light Current		500		500	mA

SPECTRAL RESPONSE



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

SYMBOL	CHARACTERISTIC	TEST CONDITIONS	PDB-C612			PDB-V612			UNITS
			MIN	TYP	MAX	MIN	TYP	MAX	
Isc	Short Circuit Current	H = 100 fc, 2850 K	810	900		720	800		μA
I_D	Dark Current	H = 0, V_R = 5 V*		75	150		40	80	nA
R_{SH}	Shunt Resistance	H = 0, V_R = 10 mV	5	10		7	15		MΩ
TC R_{SH}	R_{SH} Temp. Coefficient	H = 0, V_R = 10 mV		-8			-8		% / °C
C_J	Junction Capacitance	H = 0, V_R = 5 V**		300			9000		pF
λrange	Spectral Application Range	Spot Scan	350		1100	350		1100	nm
λp	Spectral Response - Peak	Spot Scan		940			940		nm
V_{BR}	Breakdown Voltage	I = 10 μA	25	50		5	15		V
NEP	Noise Equivalent Power	V_R = 0 V @ Peak	7.0 x 10^{-13} TYP			2.16 x 10^{-13} TYP			W/ $\sqrt{Hz}$
tr	Response Time	RL = 1 KΩ V_R = 5 V**		45			2800		nS

*VR = 100 mV on Photovoltaic type **VR = 0 V on Photovoltaic type