PbSe IR Detector

Model: OPR1000-PBSE-O

Features

- With a 20% cut-off of 4.7um
- Single element
- TO package

Applications

- Flame monitoring
- Gas detection and analysis

Absolute Maximum Ratings (T_a=23℃)

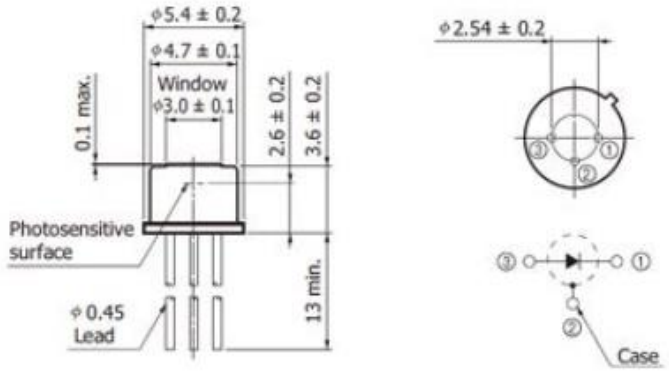
Parameter	Symbol	Value			Unit	Test conditions
		Min.	Typ.	Max.		
Chip Size	size	1000*1000			μm	
Peak responsivity	S	44000			V/W	Ipk, 1050Hz
Peak Wavelength	λ_p		3.8		μm	
20% cut-off wavelength	λ_c		4.5		μm	
Time constant	T		2	5	μs	
Min. D*	λ_{mk}	9.0×10^{9}			cm*Hz$^{1/2}$/W	@1050Hz,1Hz
Peak D	λ_{pk}	1.2×10^{10}	1.8×10^{10}		cm*Hz$^{1/2}$/W	@1050Hz,1Hz
Dark Resitance	R_d	0.1	0.8	3.5	MΩ/Square	
Rated element Temperature				+85	℃	
Detector operating temperature		+23			℃	

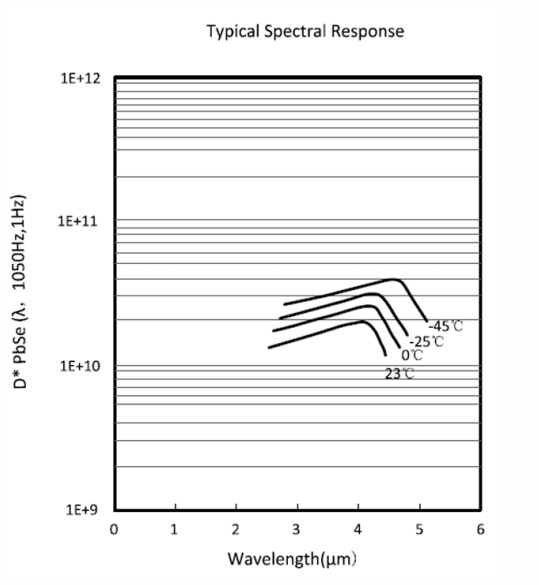
Measured with 500K blackbody.

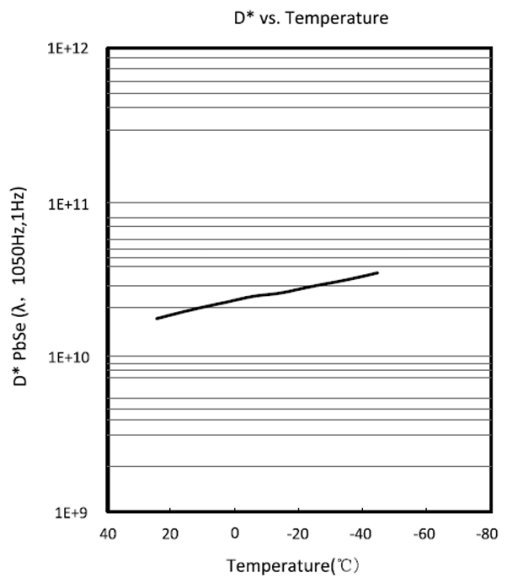
Detector tested using 50V/mm across the detector and 1MΩ load resistor.

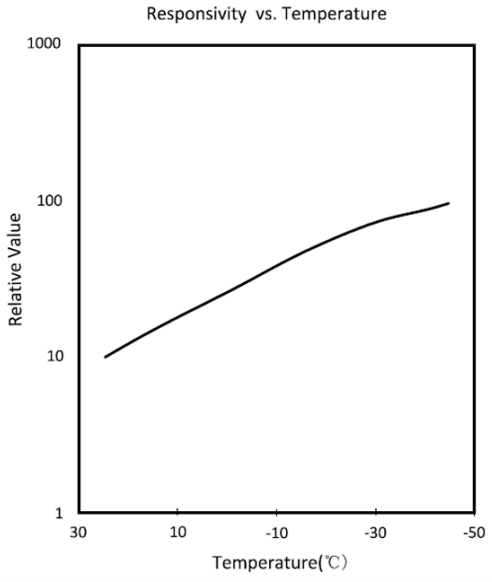
Block Diagram and Pin description

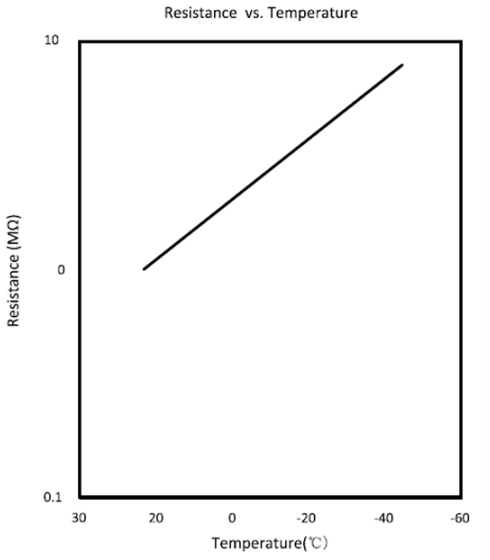
Note: All dimension are in millimeters

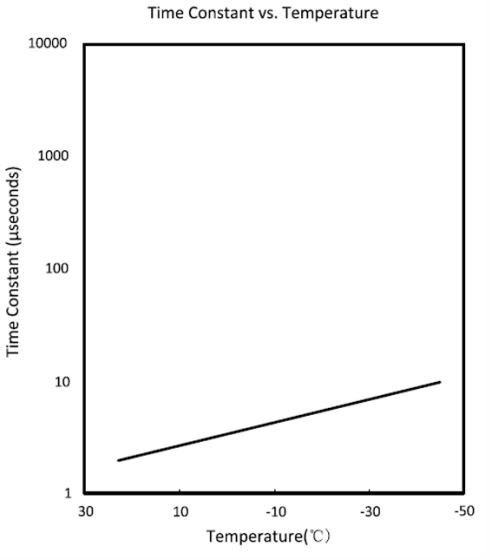



Typical Spectral Response
D* PbSe (λ、1050Hz,1Hz)
1E+12
1E+11
1E+10
1E+9
0
1
2
3
4
5
6
Wavelength(μm)
-45℃
-25℃
0℃
23℃


D* vs. Temperature
D* PbSe (λ、1050Hz,1Hz)
1E+12
1E+11
1E+10
1E+9
40
20
0
-20
-40
-60
-80
Temperature(℃)


Responsivity vs. Temperature
Relative Value
1000
100
10
1
30
10
-10
-30
-50
Temperature(℃)


Resistance vs. Temperature
Resistance (MΩ)
10
0
0.1
30
20
0
-20
-40
-60
Temperature(℃)


Time Constant vs. Temperature
Time Constant (μseconds)
10000
1000
100
10
1
30
10
-10
-30
-50
Temperature(℃)