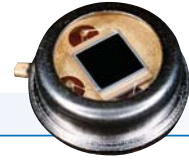


Wavelength Sensitive Photodiodes



Special characteristics

- two p-n junctions constructed vertically
- operating range: 450 - 950 nm
- spectral resolution: 0.01 nm
- specially for monochromatic light

Application
Optimized
Solutions

General ratings

Type No.		Order number	Active area		Dimensional outline	Absolute maximum ratings	
Chip	Package		Size (mm)	Area (mm ²)	Window material	Operating temperatur	Storage temperatur
WS7.56	TO5	500148	2.75 x 2.75	7.56	clear glass	-20 ... +55 °C	-40 ... +100 °C
WS7.56	TO5i	500154					
WS7.56	PCBA	500008					

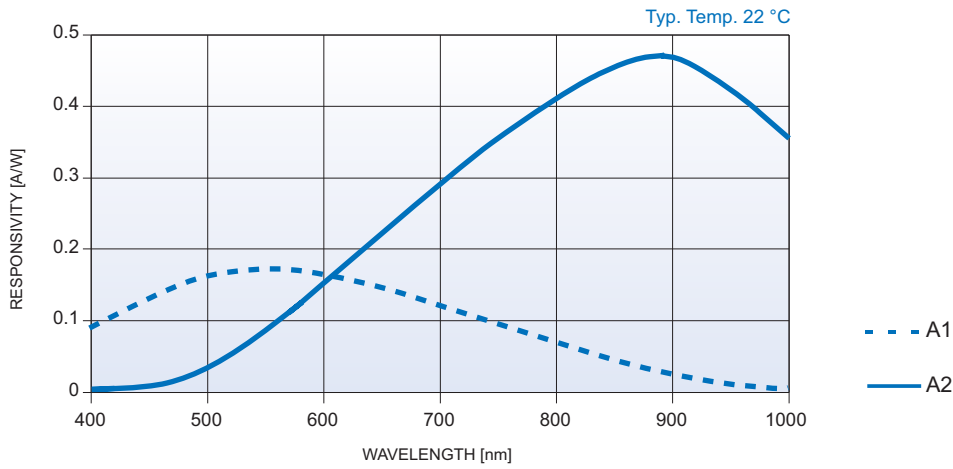
Electrical and optical characteristics (Typical values at 22 °C)

Type No.	Spectral Responsivity (A/W)		Dark current	Junction Capacitance		Rise time (µs)		Shunt Resistance	
	Diode 1, at 550 nm	Diode 2, at 890 nm	at 5 V (nA)	Diode 1, at 0 V (nF)	Diode 2, at 0 V (nF)	Diode 1 at 0 V, 1 kΩ	Diode 2 at 0 V, 1 kΩ	Diode 1 at 10 mV	Diode 2 at 10 mV
WS7.56 TO5	typ. 0.20	typ. 0.45	10	typ. 1.0	typ. 0.1	10	1	2 GΩ	100 MΩ
WS7.56 TO5i			5						
WS7.56 PCBA			10						

RoHS compliant

Wavelength Sensitive Photodiodes

Typical Spectral Response



Standard packages

scale 4:1

T05

Side view dimensions: $\text{Ø } 8.2$, 1.65 ± 0.1 , 3.5 ± 0.5 , 13.2 ± 0.5 , $\text{Ø } 0.45$.

Top view dimensions: $\text{Ø } 5.1$, window $\text{Ø } 5.9$, $\text{Ø } 9.1$.

Pin-No.	Connection
1	Cathode 1
2	Anode 1
3	Anode 2
	connected with Case

scale 4:1

T05i

Side view dimensions: $\text{Ø } 8.2$, 1.9 ± 0.1 , 3.5 ± 0.5 , 13.2 ± 0.5 , $\text{Ø } 0.45$.

Top view dimensions: $\text{Ø } 5.1$, window $\text{Ø } 5.9$, $\text{Ø } 9.1$.

Pin-No.	Connection
1	Anode 1
2	Anode 2
3	Case
4	Cathode 1+2

Wavelength Sensitive Photodiodes

Special characteristics:

The WS7.56 Wavelength Sensor has two p-n junctions constructed vertically on a common silicon substrate.

The upper diode has enhanced blue and the lower enhanced red response. Absorbed radiation between 450 and 900 nm thus generates two photocurrents proportional to the wavelength of the incident light.

The quotient of the signals is independent of light level up to the saturation point.

The wavelength of monochromatic light or the spectral density peak of polychromatic light can therefore be determined.

Application hints:

During photovoltaic operation ($U_R = 0V$) an intensity un independence for Q (quotient of both the photo currents) is to expect for a radiation up to $150 \mu W$. This range can be increased up to 3 mW when operating with bias voltage ($U_R = \text{max. } 5V$).

A possible application circuit is shown.

Handling precautions:

- Soldering temperature 260°C for max. 10 s. The device must be protected against solder flux vapour!
- min. Pin - length 2 mm
- ESD - protection Only small danger for the device. Standard precautionary measures are sufficient.
- Storage Store devices in conductive foam.

