

# J16SI SERIES SILICON/GERMANIUM "SANDWICH" DETECTORS

## Operating Instructions



**TELEDYNE  
JUDSON TECHNOLOGIES**  
A Teledyne Technologies Company

**PB 1602**  
October 2000

### Description

Two color detectors consist of a high performance Silicon detector mounted in a "sandwich" configuration over another detector.

The silicon photodiode responds to radiation from 400 nm to 1000 nm. Longer wavelengths pass through the silicon and are detected by the detector underneath.

J16Si Series detectors are ideal for optic power measurements that need to differentiate between 800nm and either 1300nm or 1550nm. They are also useful for two-color temperature measurements from 500°C to 2000°C.

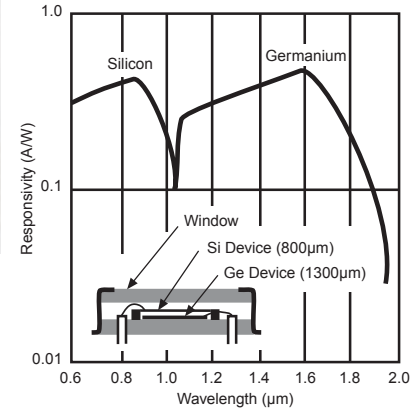
The Si and Ge elements each require a preamplifier. A Teledyne Judson model PA-7 is recommended for each element.



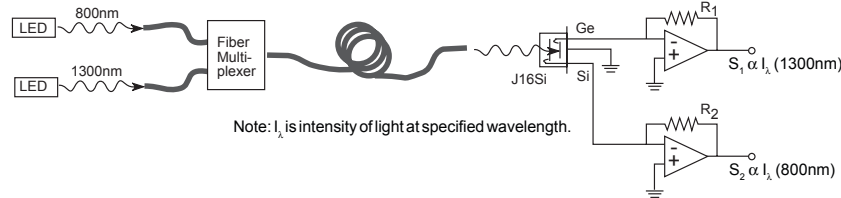
### Applications

- Dual-Wavelength Power Meters
- Wavelength Demultiplexers
- Pyrometers

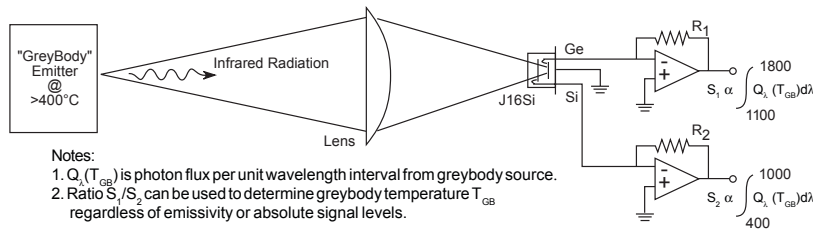
### Typical Responsivity for J16Si Series



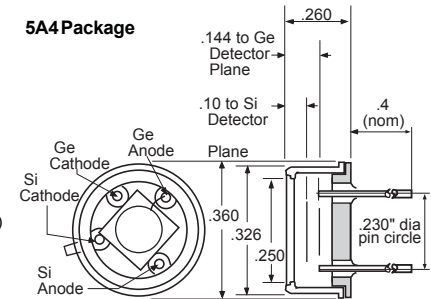
### Dual-Wavelength Power Meter Application



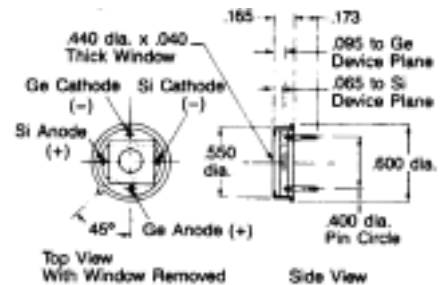
### Two-color Temperature Sensor Application



### 5A4 Package



### 8A4 Package



### Typical Specifications J16Si Series Ge @ 22°C

Model Number	Part Number	Operating Temp.	Active Size (mm)	Element	Wavelength Range (μm)	Responsivity	Typical Shunt Resistance RD @ VR=10mV (ohms)	Typical NEP @ Apeak and 300 Hz (W/Hz <sup>1/2</sup> )	Package
J16Si-5A4-R02M-SC	460066-1	22C	3.5 2.0	Si Ge	400-1000 1100-1800	0.45 A/W@800nm 0.65 A/W@1300nm	50M 120K	4.0E-14 6.0E-13	5A4
J16Si-8A4-R03M-SC	460063-1	22C	5.0 3.0	Si Ge	400-1000 1100-1800	0.45 A/W@800nm 0.65 A/W@1300nm	50M 60K	4.0E-14 8.0E-13	8A4
J16Si-8A4-R05M-SC	460129	22C	5.0 5.0	Si Ge	400-1000 1100-1800	0.45 A/W@800nm 0.65 A/W@1300nm	50M 20K	4.0E-14 1.4E-12	8A4

Information in this document is believed to be reliable. However, no responsibility is assumed for possible inaccuracies or omission. Specifications are subject to change without notice.