J16SI SERIES SILICON/GERMANIUM "SANDWICH" DETECTORS **Operating Instructions**



PB 1602

October 2000

Description

LED -

LED -

'GreyBody

Emitter

@ >400°C

Notes:

1.Q.(T

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.

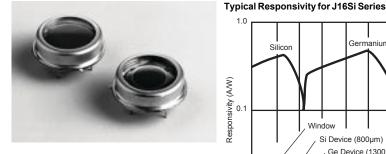
J16Si Series detectors are ideal for optic power measurements that need to differentiate between 800nm and either 1300nm or 1550nm. They are also useful for two-color temperature measurements from 500°C to 2000°C.

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

Fiber Multi-plexer

Dual-Wavelength Power Meter Application

Two-color Temperature Sensor Application



Applications

- Dual-Wavelength Power Meters
- Wavelength Demultiplexers
- Pyrometers

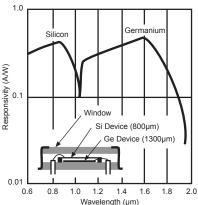
J165

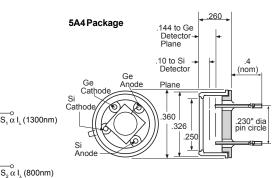
J16Si

5.0

Ge

Note: I, is intensity of light at specified wavelength





8A4 Package

1800

1000

 $Q_{\lambda} (T_{GB}) d\lambda$

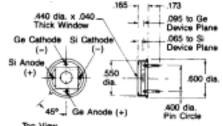
0.65 A/W@1300nr

1100

400

S₂ α

Q_λ (T_{GB})dλ



With Wind

20K

Side View

1.4E-12

Typical Shunt Typical NEP Activ Wavelength Operating Resistance RD @ λpeak and Model Number Part Number Size Element Responsivity Package Range @VR=10mV 300 Hz Temp. (mm` (µm) (ohms) W/Hz1/2) 3.5 Si 400-1000 0.45 A/W@800nm 4.0E-14 50M J16Si-5A4-R02M-SC 460066-1 22C 5A4 1100-1800 0.65 A/W@1300nm 120K 6.0E-13 2.0Ge 0.45 A/W@800nm 5.0 Si 400-1000 50M 4.0E-14 J16Si-8A4-R03M-SC 460063-1 22C 8A4 6<u>0K</u> 8.0E-13 1100-1800 0.65 A/W@1300nm 3.0 Ge 5.0 Si 400-1000 0.45 A/W@800nm 50M 4.0E-14 J16Si-8A4-R05M-SC 460129 22C 8A4

1100-1800

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



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Typical Specifications J16Si Series Ge @ 22°C

regardless of emissivity or absolute signal levels

Infrared Radiation

2. Ratio \hat{S}_1/S_2 can be used to determine greybody temperature T _{GB}

Lens

) is photon flux per unit wavelength interval from greybody source.