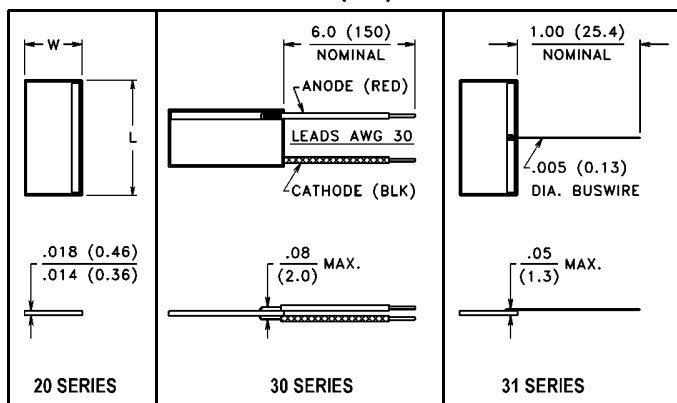


PRODUCT DESCRIPTION

This series of planar, P on N, large area silicon photodiodes is characterized for use in the photovoltaic (unbiased) mode. Their excellent speed and broadband sensitivity makes them ideal for detecting light from a variety of sources such as LEDs, IREs, flashtubes, incandescent lamps, lasers, etc. Improved shunt resistance minimizes amplifier offset and drift in high gain systems. The solderable contact system on these photodiodes provides a cost effective design solution for many applications.

PACKAGE DIMENSIONS inch (mm)



ABSOLUTE MAXIMUM RATINGS

Storage Temperature:

- 40°C to 150°C Series 20, 31
- 40°C to 105°C Series 30

Operating Temperature:

- 40°C to 125°C Series 20, 31
- 40°C to 105°C Series 30

Reverse Voltage:

6.0 Volts

CASE 44C ANODE (ACTIVE) SURFACE SHOWN CATHODE IS BACKSIDE

| DIMENSIONS | VTS__81 | VTS__83 | VTS__84 |
|-------------|---------------------------------------|--------------------------------------|--------------------------------------|
| L | .800 (20.32) | .800 (20.32) | .400 (10.16) |
| W | .400 (10.16) | .200 (5.08) | .200 (5.08) |
| ACTIVE AREA | .290 ² (187 ²) | .132 ² (85 ²) | .065 ² (42 ²) |

ELECTRO-OPTICAL CHARACTERISTICS @ 25°C (See also VTS curves, page 67)

| SYMBOL | CHARACTERISTIC | TEST CONDITIONS | VTS__81 | | | VTS__83 | | | VTS__84 | | | UNITS |
|--------------------------------|---|-----------------------|---------|------|------|---------|------|------|---------|------|------|------------------------|
| | | | Min. | Typ. | Max. | Min. | Typ. | Max. | Min. | Typ. | Max. | |
| I _{SC} | Short Circuit Current | H = 1000 lux, 2850 K | 1.10 | 1.50 | | 0.5 | 0.64 | | 0.25 | 0.33 | | mA |
| TC I _{SC} | I _{SC} Temperature Coefficient | H = 1000 Lux, 2850 K | | 0.20 | | | .20 | | | .20 | | %/°C |
| I _D | Dark Current | H = 0, VR = 100 mV | | 100 | 500 | | 50 | 200 | | 40 | 100 | nA |
| TC I _D | ID Temp. Coefficient | H = 0, VR = 100 mV | | +11 | | | +11 | | | +11 | | %/°C |
| R _{SH} | Shunt Resistance | H = 0, VR = 10 mV | | 0.6 | | | 1.2 | | | 1.5 | | MΩ |
| C _J | Junction Capacitance | H = 0, V = 0 V, 1 MHz | | 3.5 | | | 1.75 | | | 1.0 | | nF |
| S _R | Sensitivity | @ 400 nm | .18 | 0.20 | | 0.18 | 0.20 | | 0.18 | 0.20 | | A/W |
| Re | Responsivity | 400 nm, 0.18 A/W | | 0.34 | | | 0.15 | | | 0.07 | | A/(W/cm ²) |
| TC V _{OC} | Sensitivity @ Peak | 925 nm | | 0.60 | | | 0.60 | | | 0.60 | | A/W |
| t _R /t _F | Response Time @ 1 kΩ Load | VR = 1 V, 830 nm | | 6.4 | | | 3.4 | | | 1.8 | | μsec |
| V _{OC} | Open Circuit Voltage | H = 1000 Lux, 2850 K | 0.25 | 0.45 | | 0.25 | 0.45 | | 0.25 | 0.45 | | Volts |
| TC V _{OC} | V _{OC} Temperature Coefficient | H = 1000 Lux, 2850 K | | -2.6 | | | -2.6 | | | -2.6 | | mV/°C |