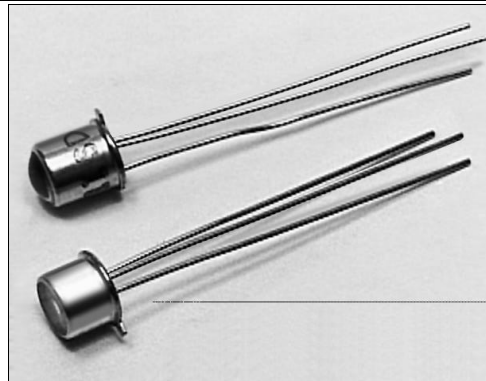


SD3421/5421

Silicon PIN Photodiode

FEATURES

- TO-46 metal can package
- Choice of flat window or lensed package
- 90° or 18° (nominal) acceptance angle option
- Fast response time
- Wide operating temperature range (-55°C to +125°C)
- Mechanically and spectrally matched to SE3450/5450, SE3455/5455 and SE3470/5470 infrared emitting diodes



INFRA-57.TIF

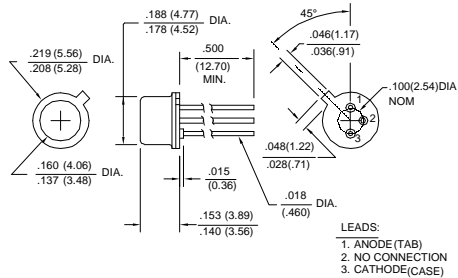
DESCRIPTION

The SD3421/5421 series consists of PIN photodiodes mounted in a TO-46 metal can package. The SD3421 utilizes flat window cans providing a wide acceptance angle, while the SD5421 employs glass lensed cans providing a narrow acceptance angle. The TO-46 packages are ideally suited for operation in hostile environments.

OUTLINE DIMENSIONS in inches (mm)

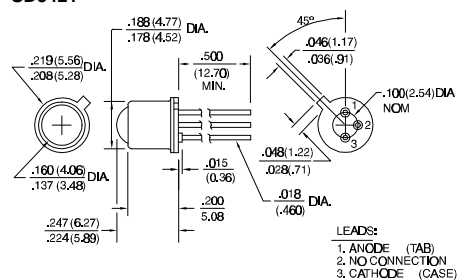
| | | |
|-----------|----------------|--------------|
| Tolerance | 3 plc decimals | ±0.005(0.12) |
| | 2 plc decimals | ±0.020(0.51) |

SD3421



DIM_011.ds4

SD5421



DIM_11b.cdr

SD3421/5421

Silicon PIN Photodiode

ELECTRICAL CHARACTERISTICS (25°C unless otherwise noted)

| PARAMETER | SYMBOL | MIN | TYP | MAX | UNITS | TEST CONDITIONS |
|---|-------------|--------------|----------|-----|---------------|--|
| Light Current SD3421-002 SD5421-002 | I_L | 10.0 40.0 | | | μA | $V_R=20\text{ V}$ $H=5\text{ mW/cm}^2$ ⁽¹⁾ |
| Dark Current | I_D | | | 20 | nA | $V_R=20\text{ V}$ $H=0$ |
| Reverse Breakdown Voltage | V_{BR} | 75 | | | V | $I_R=10\ \mu\text{A}$ |
| Angular Response ⁽²⁾ SD3421 SD5421 | \emptyset | | 90 18 | | degr. | $I_F=\text{Constant}$ |
| Rise And Fall Time | t_r, t_f | | 15 | | ns | $V_R=20\text{ V}$ $R_L=50\ \Omega$ |

Notes

- The radiation source is a tungsten lamp operating at a color temperature of 2870°K.
- Angular response is defined as the total included angle between the half sensitivity points.

ABSOLUTE MAXIMUM RATINGS

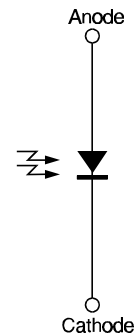
(25°C Free-Air Temperature unless otherwise noted)

| | |
|--------------------------------|-----------------------|
| Cathode Anode Voltage | 75 V |
| Power Dissipation | 150 mW ⁽¹⁾ |
| Operating Temperature Range | -55°C to 125°C |
| Storage Temperature Range | -65°C to 150°C |
| Soldering Temperature (10 sec) | 260°C |

Notes

- Derate linearly from 25°C free-air temperature at the rate of 1.43 mW/°C.

SCHEMATIC



Honeywell reserves the right to make changes in order to improve design and supply the best products possible.

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SD3421/5421

Silicon PIN Photodiode

SWITCHING TIME TEST CIRCUIT

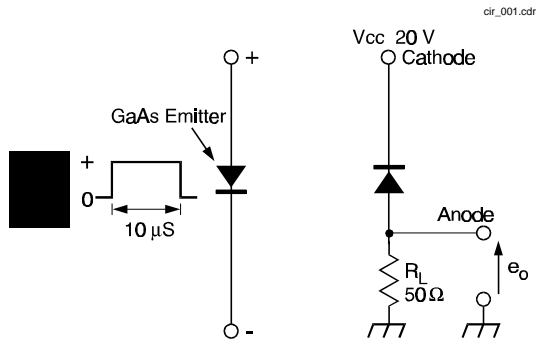
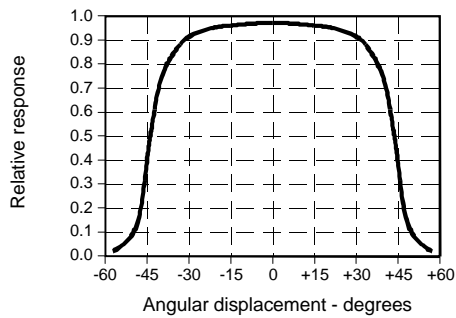


Fig. 1 Responsivity vs Angular Displacement (SD3421)



SWITCHING WAVEFORM

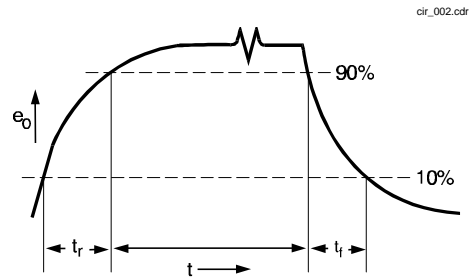


Fig. 2 Responsivity vs Angular Displacement (SD5421)

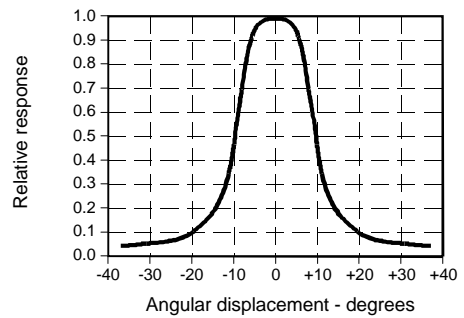


Fig. 3 Dark Current vs Temperature

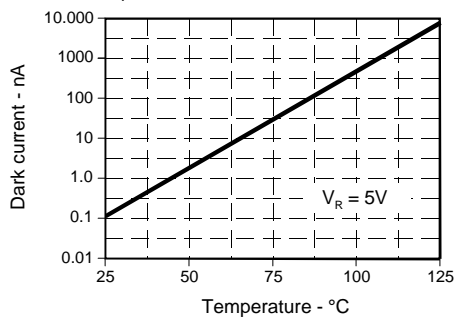
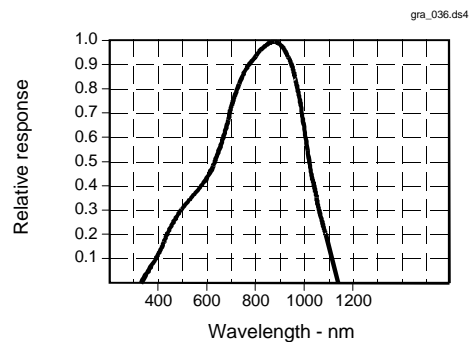


Fig. 4 Spectral Responsivity



All Performance Curves Show Typical Values

SD3421/5421
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