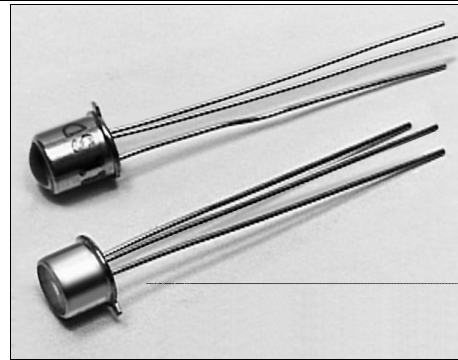


# SD3421/5421

## 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

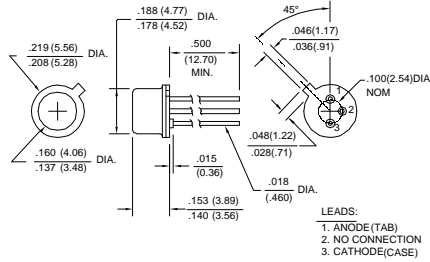
### DESCRIPTION

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)

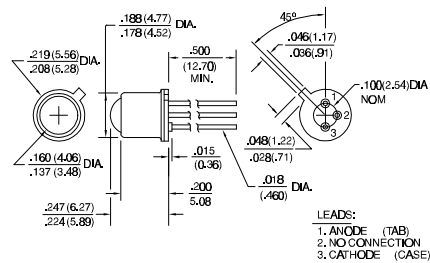
Tolerance 3 plc decimals ±0.005(0.12)  
2 plc decimals ±0.020(0.51)

#### SD3421



DIM\_011.dsd

#### 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			$\mu\text{A}$	$V_R=20\text{ V}$ $H=5\text{ mW/cm}^2$ (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

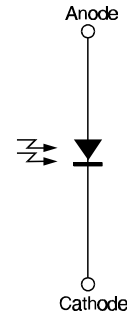
(25°C Free-Air Temperature unless otherwise noted)

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

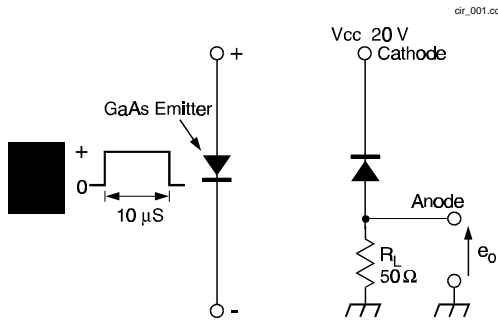


Fig. 1 Responsivity vs Angular Displacement (SD3421)

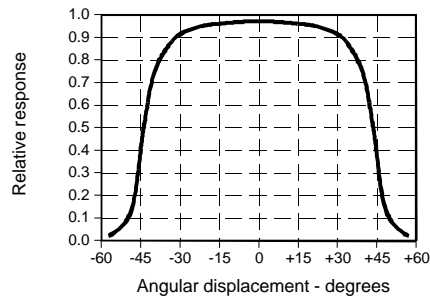
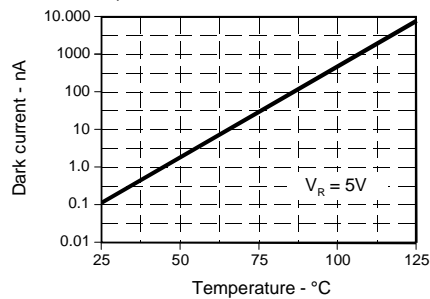


Fig. 3 Dark Current vs Temperature



SWITCHING WAVEFORM

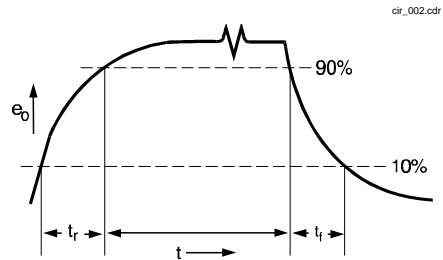


Fig. 2 Responsivity vs Angular Displacement (SD5421)

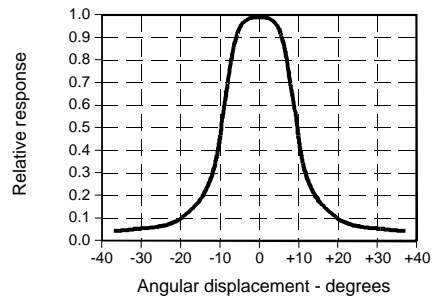
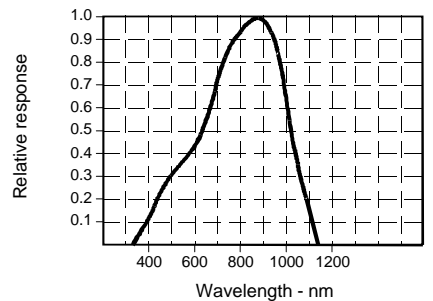


Fig. 4 Spectral Responsivity



All Performance Curves Show Typical Values

# SD3421/5421

Silicon PIN Photodiode

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