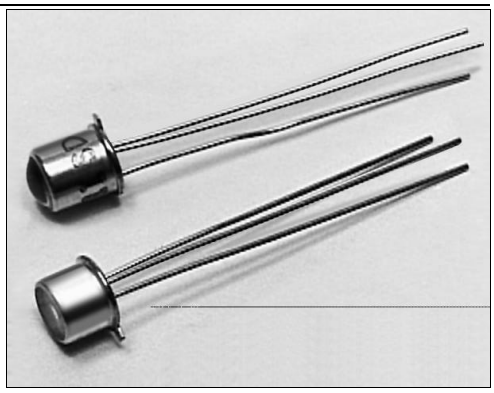
SD3421/5421

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



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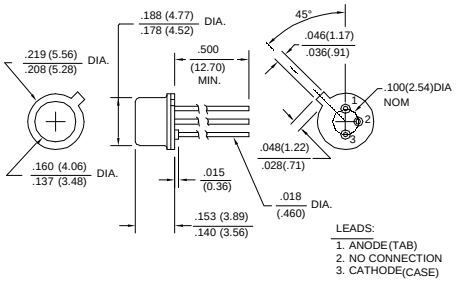
DESCRIPTION

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)

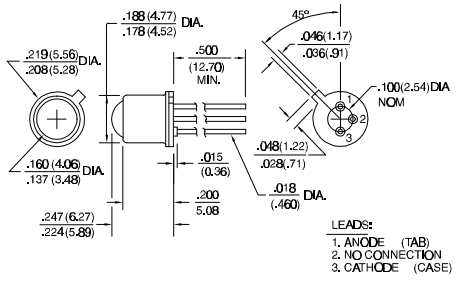
Tolerance	3 plc decimals	±0.005(0.12)
	2 plc decimals	±0.020(0.51)

SD3421



DIM_011.ds4

SD5421



DIM_11b.cdr

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ELECTRICAL CHARACTERISTICS (25°C unless otherwise noted)

PARAMETER	SYMBOL	MIN	TYP	MAX	UNITS	TEST CONDITIONS
Light Current	I_L				µA	V_R=20 V
SD3421-002		10.0				H=5 mW/cm² (1)
SD5421-002		40.0				
Dark Current	I_D			20	nA	V_R=20 V
						H=0
Reverse Breakdown Voltage	V_{BR}	75			V	I_R=10 µA
Angular Response (2)	Ø				degr.	I_F=Constant
SD3421			90			
SD5421			18			
Rise And Fall Time	t_r, t_f		15		ns	V_R=20 V
						R_L=50 Ω

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

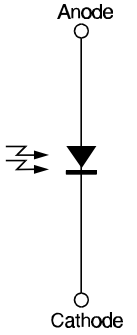
ABSOLUTE MAXIMUM RATINGS

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

SCHEMATIC



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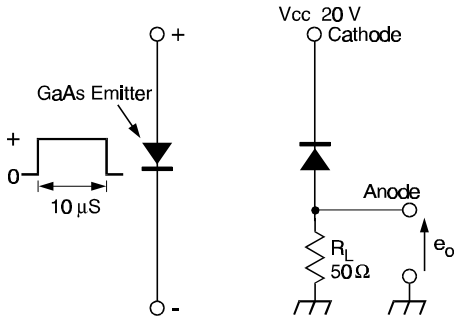
SWITCHING TIME TEST CIRCUIT

cir_001.cdr



SWITCHING WAVEFORM

cir_002.cdr

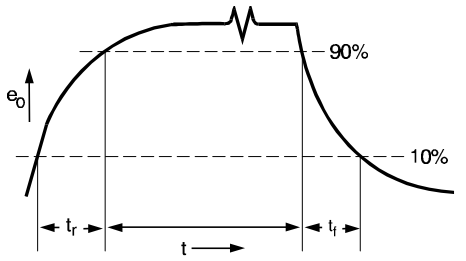


Fig. 1 Responsivity vs Angular Displacement (SD3421)

gra_052.ds4

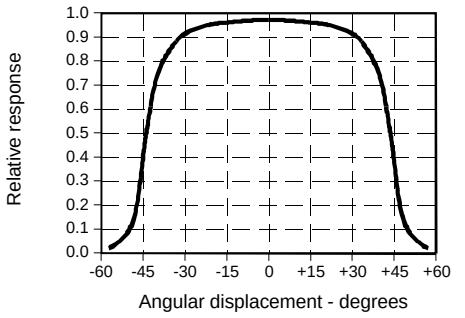


Fig. 2 Responsivity vs Angular Displacement (SD5421)

gra_053.ds4

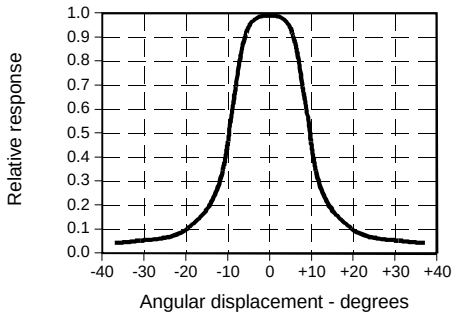


Fig. 3 Dark Current vs Temperature

gra_038.ds4

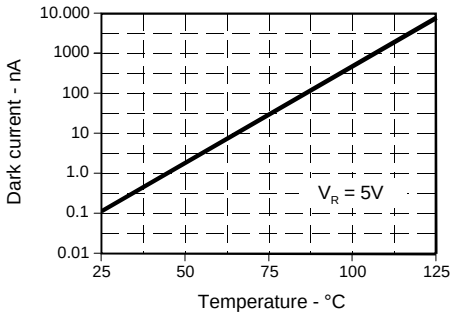


Fig. 4 Spectral Responsivity

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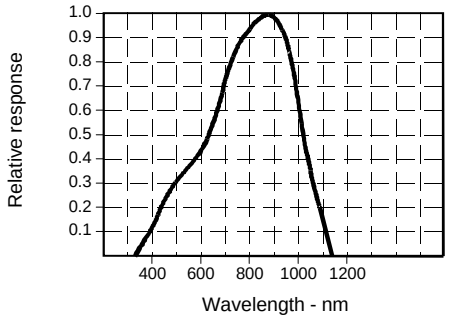

All Performance Curves Show Typical Values

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