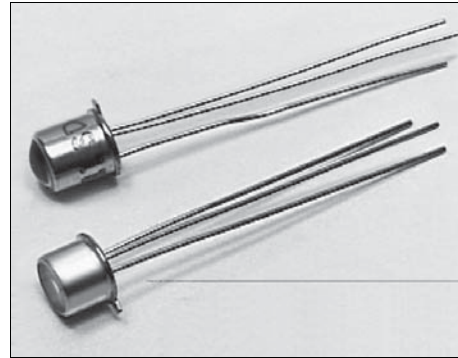


SD3443/5443

Silicon Phototransistor

FEATURES

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



INFRA-57.TIF

DESCRIPTION

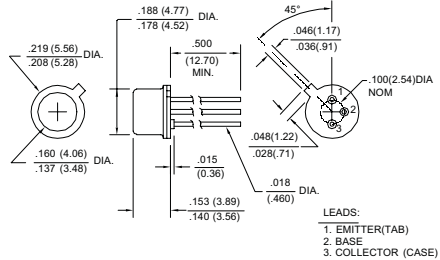
The SD3443/5443 series consists of an NPN silicon phototransistor mounted in a TO-46 metal can package. The SD3443 has flat window cans providing a wide acceptance angle, while the SD5443 has glass lensed cans providing a narrow acceptance angle. The TO-46 packages are ideally suited for operation in hostile environments.

The base is connected on all SD3443 and SD5433 standard products.

OUTLINE DIMENSIONS in inches (mm)

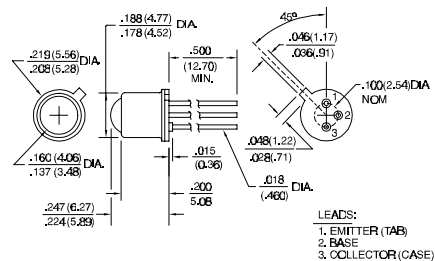
Tolerance	3 plc decimals	±0.005(0.12)
	2 plc decimals	±0.020(0.51)

SD3443



DIM_015.dwg

SD5443



DIM_15b.dwg

SD3443/5443

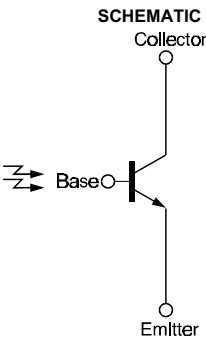
Silicon Phototransistor

ELECTRICAL CHARACTERISTICS (25°C unless otherwise noted)							
PARAMETER		SYMBOL	MIN	TYP	MAX	UNITS	TEST CONDITIONS
Light Current		I _L				mA	V _{CE} =5 V H=5 mW/cm ² (1)
SD3443-001			0.50				
SD3443-002			1.00				
SD3443-003			2.00				
SD5443-001			1.00				
SD5443-002			4.00				
SD5443-003			8.00				
SD5443-004			16.0				
Collector Dark Current		I _{CEO}			100	nA	V _{CE} =10 V, H=0
Collector-Emitter Breakdown Voltage		V _{(BR)CEO}	30			V	I _C =100 μA
Emitter-Collector Breakdown Voltage		V _{(BR)ECO}	5.0			V	I _E =100 μA
Collector-Emitter Saturation Voltage		V _{CE(SAT)}			0.4	V	I _C =0.4 mA H=5 mW/cm ²
Angular Response (2)		Ø				degr.	I _F =Constant
SD3443				90			
SD5443				18			
Rise And Fall Time		t _r , t _f		15		μs	V _{CC} =5 V, I _L =1 mA R _L =1000 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)	
Collector-Emitter Voltage	30 V
Emitter-Collector Voltage	5 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.



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

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SD3443/5443

Silicon Phototransistor

SWITCHING TIME TEST CIRCUIT

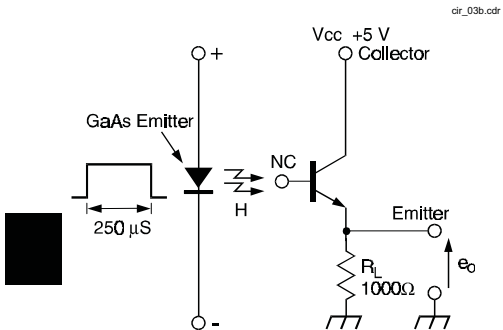
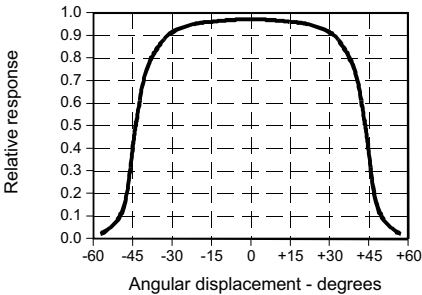


Fig. 1 Responsivity vs Angular Displacement (SD3443)



SWITCHING WAVEFORM

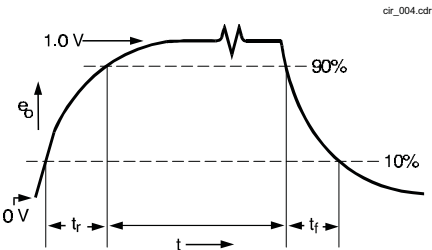


Fig. 2 Responsivity vs Angular Displacement (SD5443)

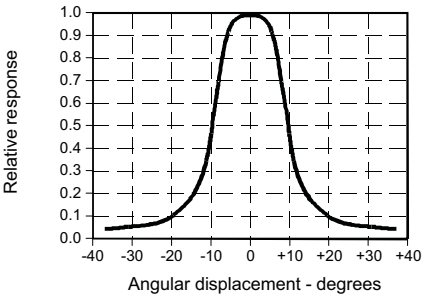


Fig. 3 Dark Current vs Temperature

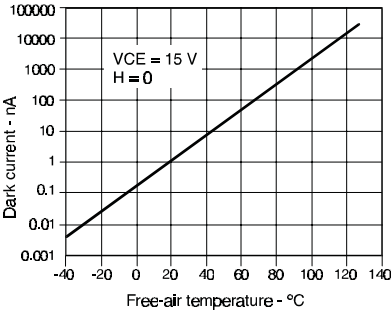
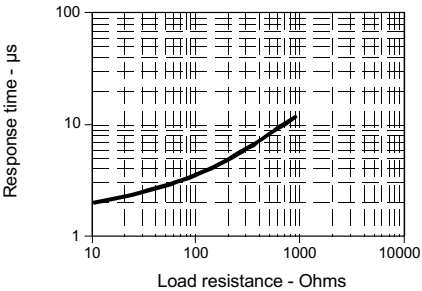


Fig. 4 Non-Saturated Switching Time vs Load Resistance



SD3443/5443

Silicon Phototransistor

Fig. 5 Spectral Responsivity

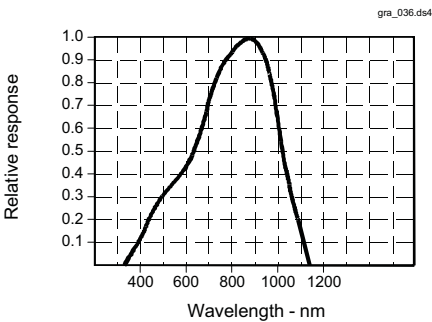


Fig. 6 Coupling Characteristics
SE3450 with SD3443

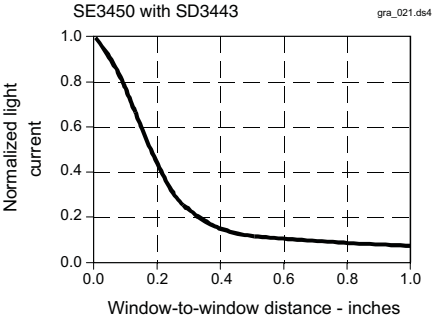


Fig. 7 Coupling Characteristics
SE5450 with SD5443

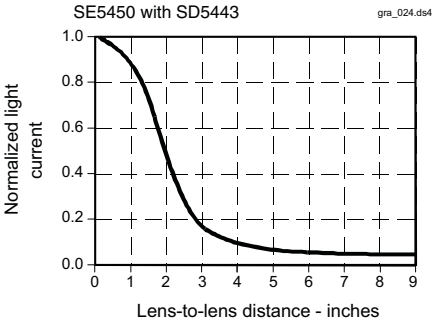
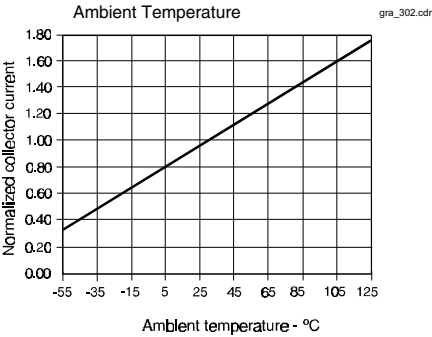


Fig. 8 Collector Current vs
Ambient Temperature



All Performance Curves Show Typical Values

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