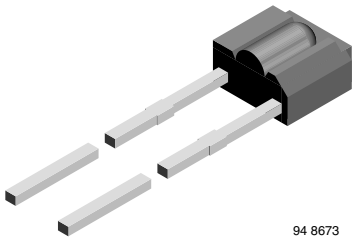
Silicon NPN Phototransistor, RoHS Compliant



FEATURES

- Package type: leaded
- Package form: side view
- Dimensions (L x W x H in mm): 3.6 x 2.2 x 3.4
- High radiant sensitivity
- Daylight blocking filter matches with 940 nm emitters
- Fast response times
- Angle of half sensitivity: $\varphi_1 = \pm 30°$, horizontal
- Package matches with IR emitter series TSSS2600
- Lead (Pb)-free component in accordance with RoHS 2002/95/EC and WEEE 2002/96/EC

Pb-free

e2

RoHS COMPLIANT

DESCRIPTION

TEST2600 is a silicon NPN phototransistor with high radiant sensitivity in black, miniature, side view plastic package with daylight blocking filter. Filter bandwidth is matched with 900 nm to 950 nm IR emitters.

APPLICATIONS

- Optical switches
- Counters and sorters
- Interrupters
- Tape and card readers
- Encoders
- Position sensors

PRODUCT SUMMARY

COMPONENT	I_{ca} (mA)	φ (deg)	$\lambda_{0.5}$ (nm)
TEST2600	2.5	± 30	850 to 980

Note

Test condition see table “Basic Characteristics”

ORDERING INFORMATION

ORDERING CODE	PACKAGING	REMARKS	PACKAGE FORM
TEST2600	Bulk	MOQ: 5000 pcs, 5000 pcs/bulk	Side view

Note

MOQ: minimum order quantity

ABSOLUTE MAXIMUM RATINGS

PARAMETER	TEST CONDITION	SYMBOL	VALUE	UNIT
Collector emitter voltage		V_{CEO}	70	V
Emitter collector voltage		V_{ECO}	5	V
Collector current		I_C	50	mA
Collector peak current	$t_p/T = 0.5$, $t_p \leq 10$ ms	I_{CM}	100	mA
Total power dissipation	$T_{amb} \leq 55$ °C	P_V	100	mW
Junction temperature		T_j	100	°C
Operating temperature range		T_{amb}	- 40 to + 85	°C
Storage temperature range		T_{stg}	- 40 to + 100	°C
Soldering temperature	t ≤ 3 s, 2 mm frpm case	T_{sd}	260	°C
Thermal resistance junction/ambient	Connected with Cu wire, 0.14 mm²	R_{thJA}	450	K/W

Note

T_{amb} = 25 °C, unless otherwise specified

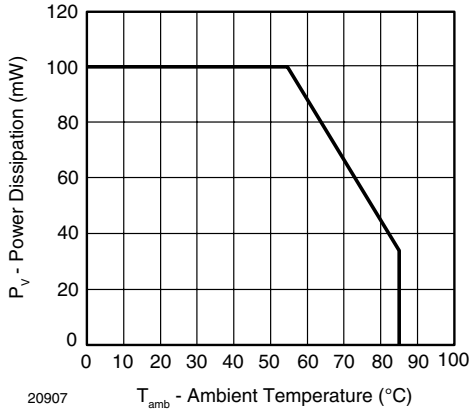


Fig. 1 - Power Dissipation Limit vs. Ambient Temperature

BASIC CHARACTERISTICS						
PARAMETER	**TEST CONDITION**	**SYMBOL**	**MIN.**	**TYP.**	**MAX.**	**UNIT**
Collector emitter breakdown voltage	I_C = 1 mA	$V_{(BR)CEO}$	70			V
Collector emitter dark current	V_{CE} = 20 V, E = 0	I_{CEO}		1	100	nA
Collector emitter capacitance	V_{CE} = 5 V, f = 1 MHz, E = 0	C_{CEO}		6		pF
Collector light current	E_e = 1 mW/cm², λ = 950 nm, V_{CE} = 5 V	I_{ca}	1	2.5		mA
Angle of half sensitivity	horizontal	φ_1		± 30		deg
	vertical	φ_2		± 60		deg
Wavelength of peak sensitivity		λ_p		920		nm
Range of spectral bandwidth		$\lambda_{0.5}$		850 to 980		nm
Collector emitter saturation voltage	E_e = 1 mW/cm², λ = 950 nm, I_C = 0.1 mA	V_{CEsat}			0.3	V
Turn-on time	V_S = 5 V, I_C = 5 mA, R_L = 100 Ω	t_{on}		6		µs
Turn-off time	V_S = 5 V, I_C = 5 mA, R_L = 100 Ω	t_{off}		5		µs
Cut-off frequency	V_S = 5 V, I_C = 5 mA, R_L = 100 Ω	f_c		110		kHz

Note

T_{amb} = 25 °C, unless otherwise specified

BASIC CHARACTERISTICS

T_{amb} = 25 °C, unless otherwise specified

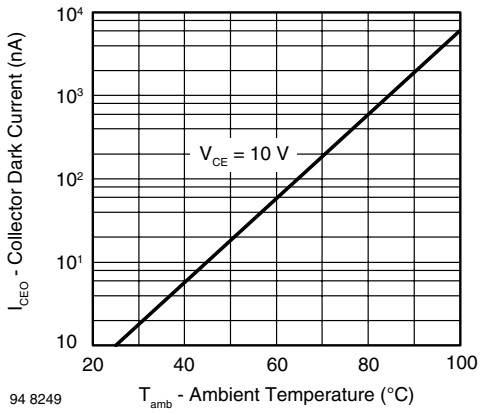


Fig. 2 - Collector Dark Current vs. Ambient Temperature

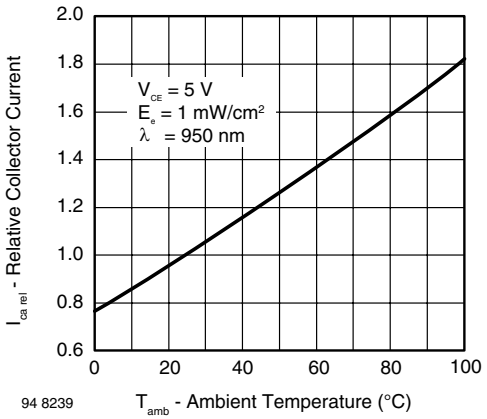


Fig. 3 - Relative Collector Current vs. Ambient Temperature

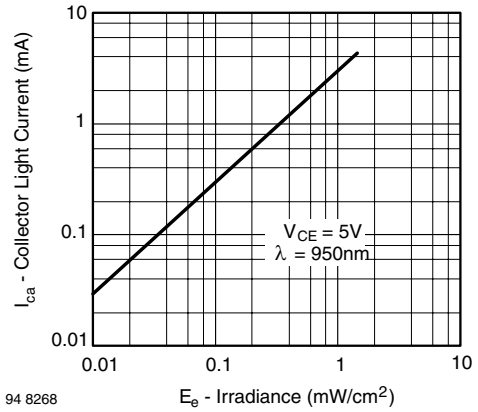


Fig. 4 - Collector Light Current vs. Irradiance

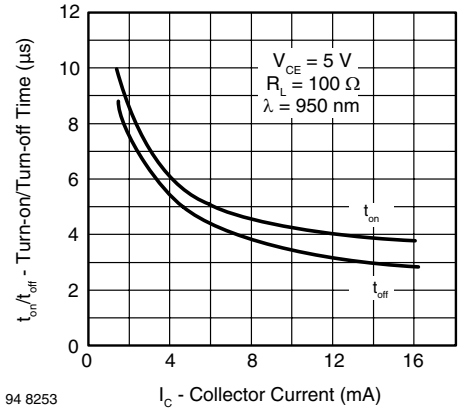


Fig. 7 - Turn-on/Turn-off Time vs. Collector Current

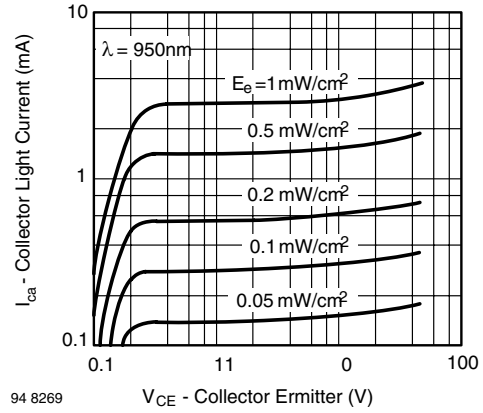


Fig. 5 - Collector Light Current vs. Collector Emitter Voltage

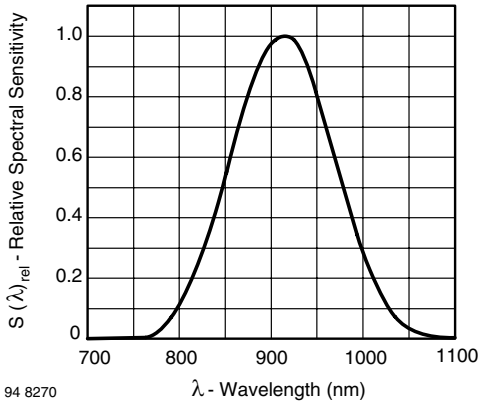


Fig. 8 - Relative Spectral Sensitivity vs. Wavelength

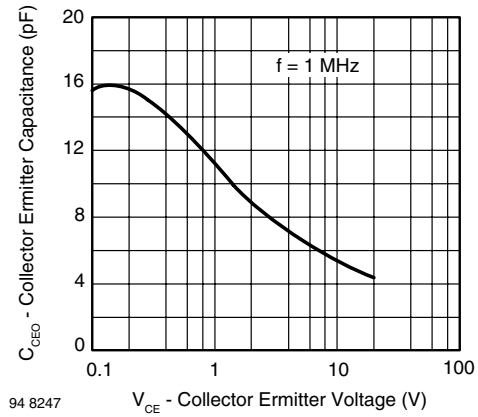


Fig. 6 - Collector Emitter Capacitance vs. Collector Emitter Voltage

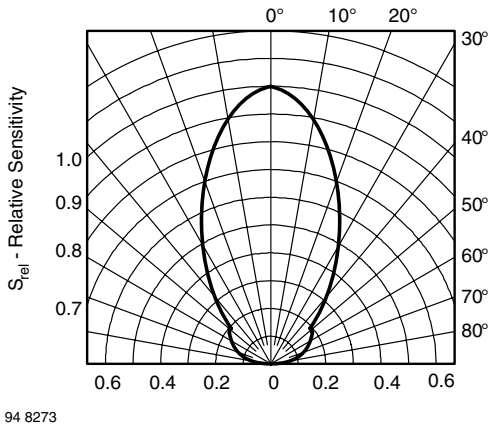


Fig. 9 - Relative Radiant Sensitivity vs. Angular Displacement

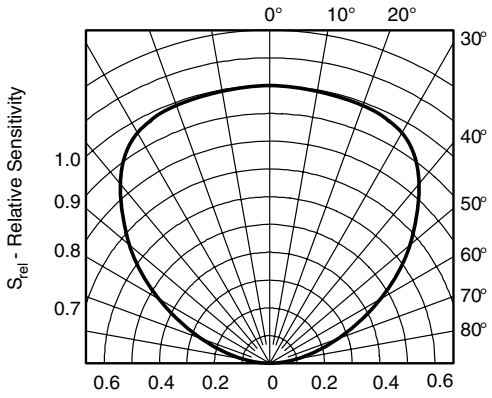
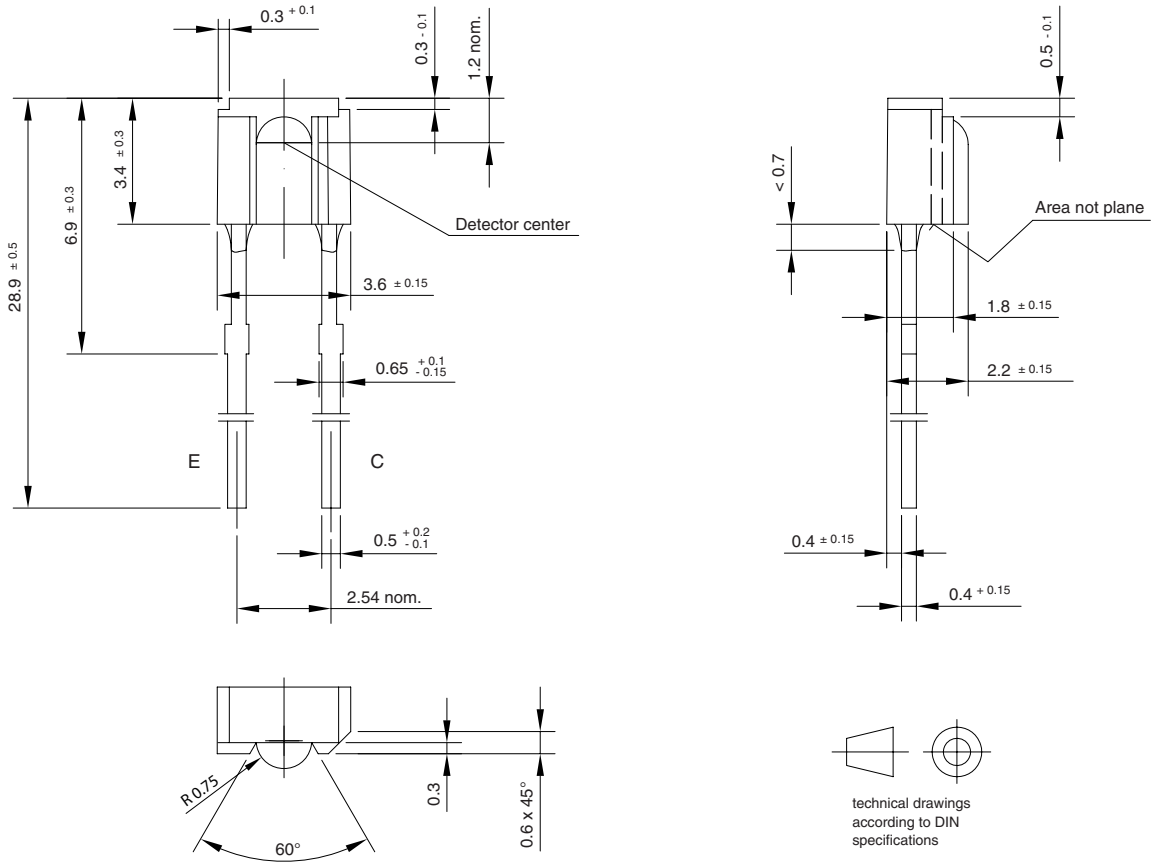


Fig. 10 - Relative Radiant Sensitivity vs. Angular Displacement

PACKAGE DIMENSIONS in millimeters



Drawing-No.: 6.544-5242.01-4
Issue: 3; 18.04.96
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