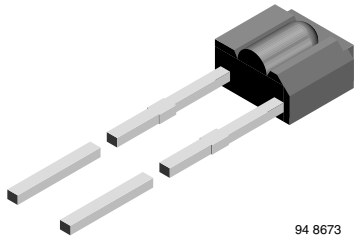


## Silicon NPN Phototransistor, RoHS Compliant



94 8673

### 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.

### 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:  $\varphi_1 = \pm 30^\circ$ , horizontal
- Package matches with IR emitter series TSSS2600
- Lead (Pb)-free component in accordance with RoHS 2002/95/EC and WEEE 2002/96/EC


**RoHS**  
COMPLIANT

### APPLICATIONS

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

### PRODUCT SUMMARY

COMPONENT	$I_{ca}$ (mA)	$\varphi$ (deg)	$\lambda_{0.5}$ (nm)
TEST2600	2.5	$\pm 30$	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	$T_{amb} \leq 55^\circ\text{C}$	$P_V$	100	mW
Junction temperature		$T_j$	100	$^\circ\text{C}$
Operating temperature range		$T_{amb}$	- 40 to + 85	$^\circ\text{C}$
Storage temperature range		$T_{stg}$	- 40 to + 100	$^\circ\text{C}$
Soldering temperature	$t \leq 3$ s, 2 mm frpm case	$T_{sd}$	260	$^\circ\text{C}$
Thermal resistance junction/ambient	Connected with Cu wire, 0.14 mm <sup>2</sup>	$R_{thJA}$	450	K/W

#### Note

$T_{amb} = 25^\circ\text{C}$ , unless otherwise specified

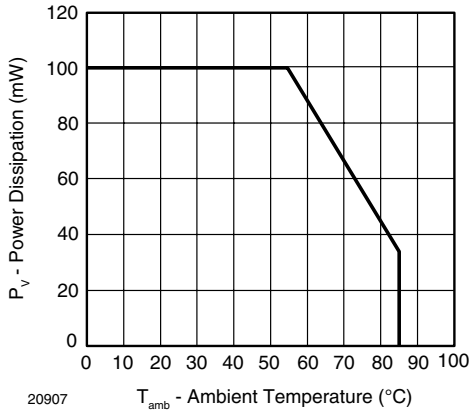


Fig. 1 - Power Dissipation Limit vs. Ambient Temperature

BASIC CHARACTERISTICS						
PARAMETER	TEST CONDITION	SYMBOL	MIN.	TYP.	MAX.	UNIT
Collector emitter breakdown voltage	$I_C = 1 \text{ mA}$	$V_{(BR)CEO}$	70			V
Collector emitter dark current	$V_{CE} = 20 \text{ V}, E = 0$	$I_{CEO}$		1	100	nA
Collector emitter capacitance	$V_{CE} = 5 \text{ V}, f = 1 \text{ MHz}, E = 0$	$C_{CEO}$		6		pF
Collector light current	$E_e = 1 \text{ mW/cm}^2, \lambda = 950 \text{ nm}, V_{CE} = 5 \text{ V}$	$I_{ca}$	1	2.5		mA
Angle of half sensitivity	horizontal	$\varphi_1$		$\pm 30$		deg
	vertical	$\varphi_2$		$\pm 60$		deg
Wavelength of peak sensitivity		$\lambda_p$		920		nm
Range of spectral bandwidth		$\lambda_{0.5}$		850 to 980		nm
Collector emitter saturation voltage	$E_e = 1 \text{ mW/cm}^2, \lambda = 950 \text{ nm}, I_C = 0.1 \text{ mA}$	$V_{CEsat}$			0.3	V
Turn-on time	$V_S = 5 \text{ V}, I_C = 5 \text{ mA}, R_L = 100 \Omega$	$t_{on}$		6		$\mu\text{s}$
Turn-off time	$V_S = 5 \text{ V}, I_C = 5 \text{ mA}, R_L = 100 \Omega$	$t_{off}$		5		$\mu\text{s}$
Cut-off frequency	$V_S = 5 \text{ V}, I_C = 5 \text{ mA}, R_L = 100 \Omega$	$f_c$		110		kHz

Note

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BASIC CHARACTERISTICS

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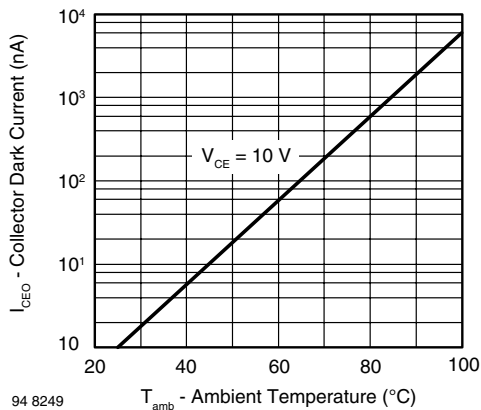


Fig. 2 - Collector Dark Current vs. Ambient Temperature

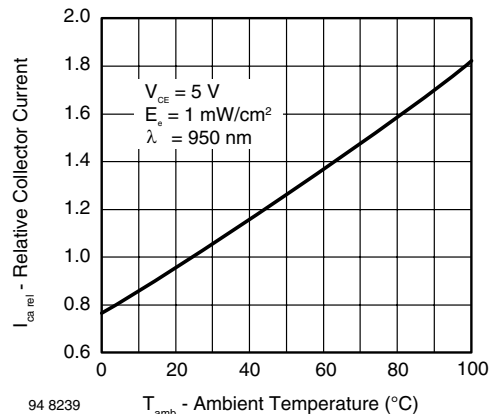


Fig. 3 - Relative Collector Current vs. Ambient Temperature

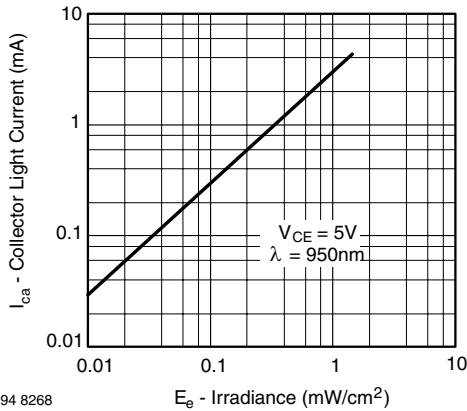


Fig. 4 - Collector Light Current vs. Irradiance

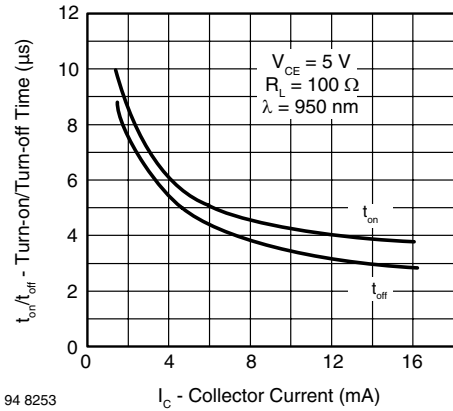


Fig. 7 - Turn-on/Turn-off Time vs. Collector Current

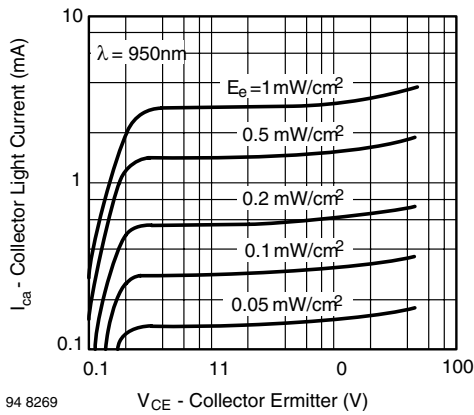


Fig. 5 - Collector Light Current vs. Collector Emitter Voltage

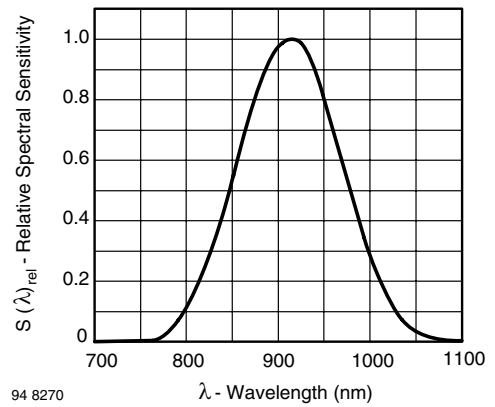


Fig. 8 - Relative Spectral Sensitivity vs. Wavelength

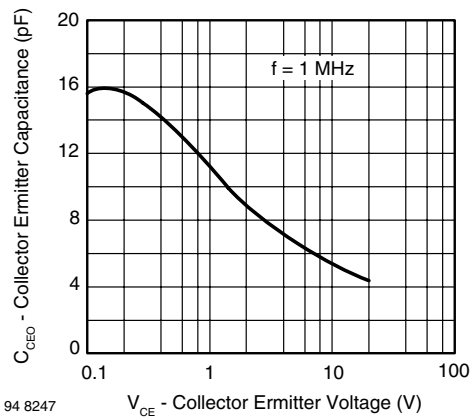


Fig. 6 - Collector Emitter Capacitance vs. Collector Emitter Voltage

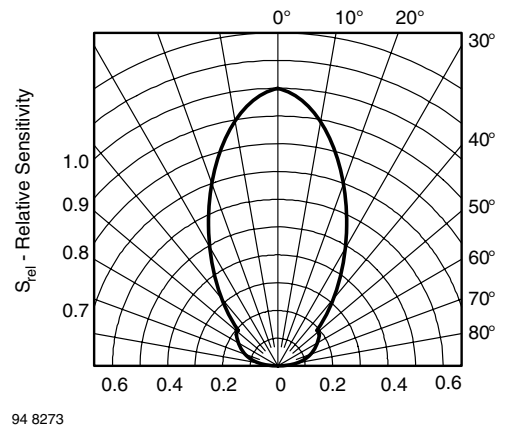


Fig. 9 - Relative Radiant Sensitivity vs. Angular Displacement





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