

Vishay Semiconductors

Silicon NPN Phototransistor, RoHS Compliant



DESCRIPTION

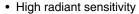
TEST2600 is a silicon NPN phototransistor with high radiant sensitivity in black, miniature, side view plastic package with daylight blocking filter. Filter bandwidth is matched with 900 nm to 950 nm IR emitters.

FEATURES

• Package type: leaded

• Package form: side view

• Dimensions (L x W x H in mm): 3.6 x 2.2 x 3.4



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

APPLICATIONS

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

PRODUCT SUMMARY			
COMPONENT	I _{ca} (mA)	φ (deg)	λ _{0.5} (nm)
TEST2600	2.5	± 30	850 to 980

Note

Test condition see table "Basic Characteristics"

ORDERING INFORMAT				
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	$t_p/T = 0.5, t_p \le 10 \text{ ms}$	I _{CM}	100	mA
Total power dissipation	T _{amb} ≤ 55 °C	P _V	100	mW
Junction temperature		Tj	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 mm ²	R _{thJA}	450	K/W

Note

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

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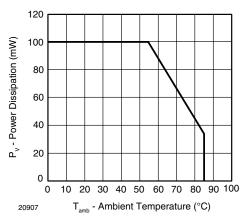


Fig. 1 - Power Dissipation Limit vs. Ambient Temperature

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	$E_e = 1 \text{ mW/cm}^2, \lambda = 950 \text{ nm},$ $V_{CE} = 5 \text{ V}$	I _{ca}	1	2.5		mA
Angle of half sensitivity	horizontal	Ψ1		± 30		deg
	vertical	φ ₂		± 60		deg
Wavelength of peak sensitivity		λ_{p}		920		nm
Range of spectral bandwidth		λ _{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		μs
Turn-off time	$V_S = 5 \text{ V}, I_C = 5 \text{ mA}, R_L = 100 \Omega$	t _{off}		5		μs
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

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

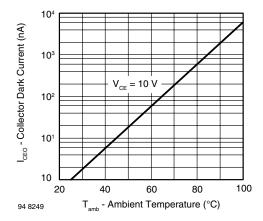


Fig. 2 - Collector Dark Current vs. Ambient Temperature

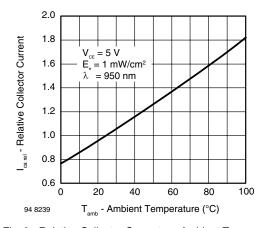


Fig. 3 - Relative Collector Current vs. Ambient Temperature



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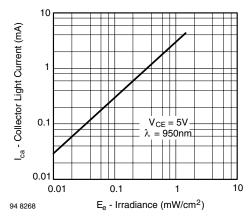


Fig. 4 - Collector Light Current vs. Irradiance

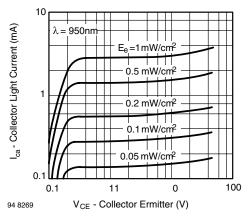


Fig. 5 - Collector Light Current vs. Collector Emitter Voltage

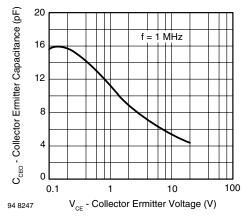


Fig. 6 - Collector Emitter Capacitance vs. Collector Emitter Voltage

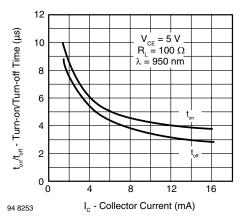


Fig. 7 - Turn-on/Turn-off Time vs. Collector Current

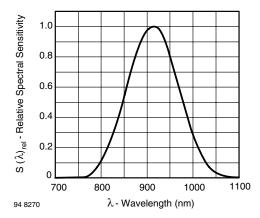


Fig. 8 - Relative Spectral Sensitivity vs. Wavelength

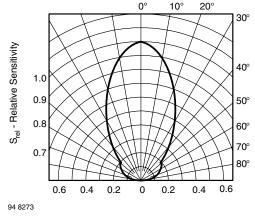


Fig. 9 - Relative Radiant Sensitivity vs. Angular Displacement

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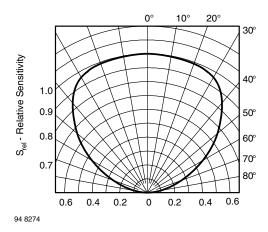
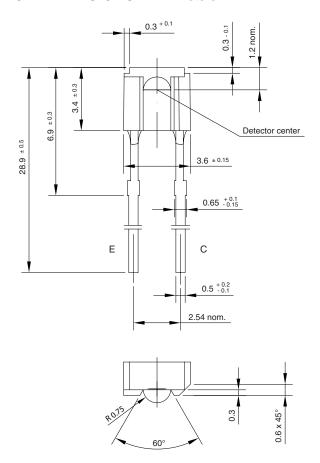
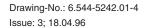


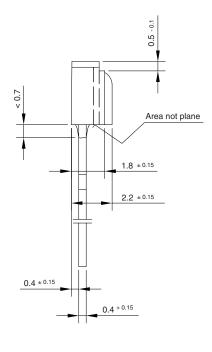
Fig. 10 - Relative Radiant Sensitivity vs. Angular Displacement

PACKAGE DIMENSIONS in millimeters





95 11487







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