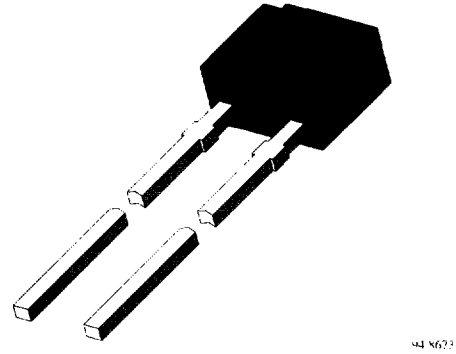
TEST2600

Silicon NPN Phototransistor

Description

TEST2600 is a high sensitive silicon NPN epitaxial planar phototransistor in a miniature side view plastic package with cylindrical lens.
Its epoxy casting is designed as a infrared filter to spectrally match to GaAs IR emitters (λ_p=950nm).



Features

- High radiant sensitivity (2.5 mA)
- Miniature side view package with cylindrical lens
- Very wide viewing angle $\varphi = \pm 30°/\pm 60°$
- Suitable for near IR radiation
- Matches with TSSS 2600 IR emitter

Applications

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

Absolute Maximum Ratings

T_{amb} = 25°C

Parameter	Test Conditions	Symbol	Value	Unit
Collector Emitter Voltage		V_{CEO}	70	V
Emitter Collector Voltage		V_{ECO}	5	V
Collector Current		I_C	50	mA
Peak Collector Current	$t_p/T = 0.5$, $t_p \leqq 10$ ms	I_{CM}	100	mA
Total Power Dissipation	$T_{amb} \leqq 55$ °C	P_{tot}	100	mW
Junction Temperature		T_j	100	°C
Storage Temperature Range		T_{stg}	–55...+100	°C
Soldering Temperature	t ≦ 3 s, 2 mm from case	T_{sd}	260	°C
Thermal Resistance Junction/Ambient		R_{thJA}	450	K/W

Basic Characteristics

T_{amb} = 25°C

Parameter	Test Conditions	Symbol	Min	Typ	Max	Unit
Collector Emitter Breakdown Voltage	I_C = 1 mA	$V_{(BR)CEO}$	70			V
Collector 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=1mW/cm², λ=950nm, V_{CE}=5V	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...980		nm
Collector Emitter Saturation Voltage	E_e=1mW/cm², λ=950nm, I_C=0.1mA	V_{CEsat}			0.3	V
Turn–On Time	V_S=5V, I_C=5mA, R_L=100Ω	t_{on}		6		µs
Turn–Off Time	V_S=5V, I_C=5mA, R_L=100Ω	t_{off}		5		µs
Cut–Off Frequency	V_S=5V, I_C=5mA, R_L=100Ω	f_c		110		kHz

Typical Characteristics (T_{amb} = 25°C unless otherwise specified)

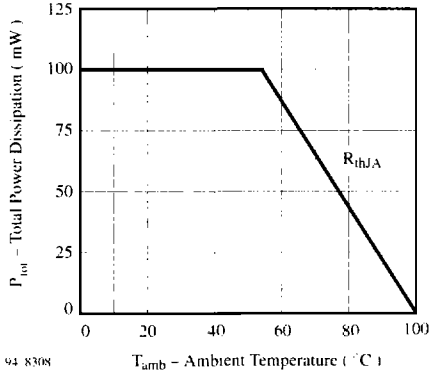


Figure 1. Total Power Dissipation vs. Ambient Temperature

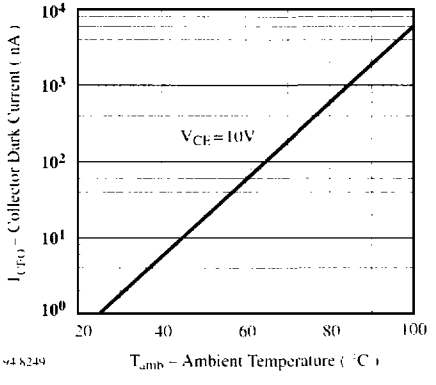


Figure 2. Collector Dark Current vs. Ambient Temperature

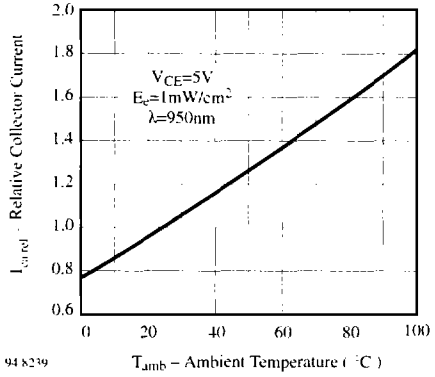


Figure 3. Relative Collector Current vs. Ambient Temperature

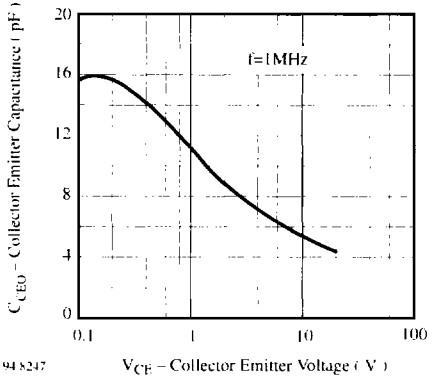


Figure 6. Collector Emitter Capacitance vs. Collector Emitter Voltage

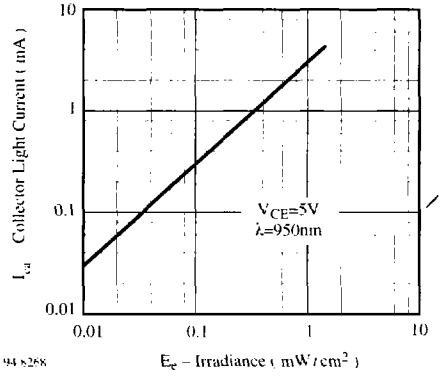


Figure 4. Collector Light Current vs. Irradiance

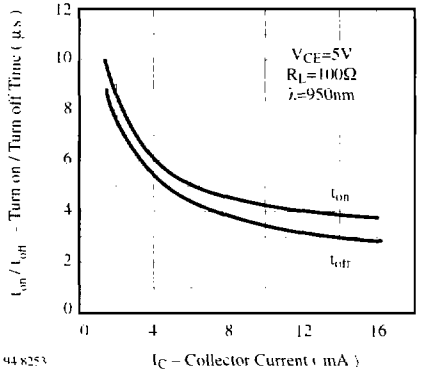


Figure 7. Turn On/Turn Off Time vs. Collector Current

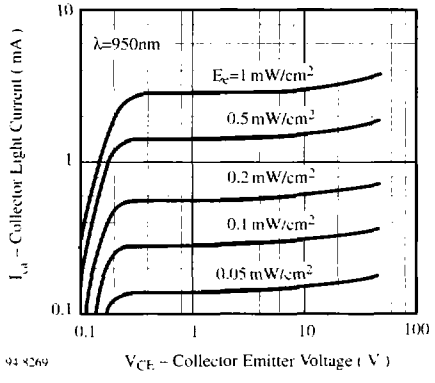


Figure 5. Collector Light Current vs. Collector Emitter Voltage

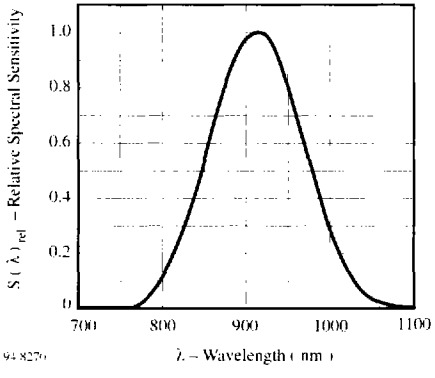


Figure 8. Relative Spectral Sensitivity vs. Wavelength

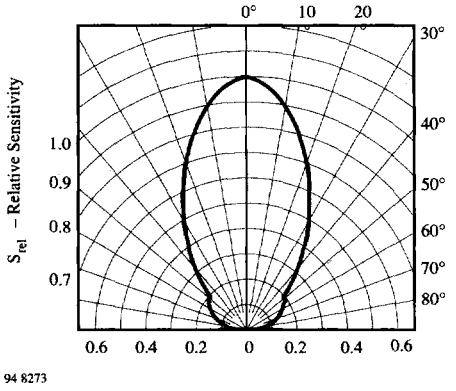


Figure 9. Relative Radiant Sensitivity vs. Angular Displacement

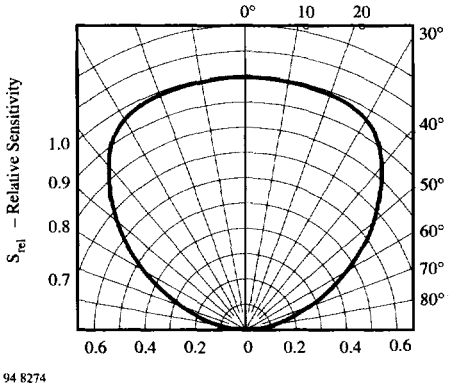


Figure 10. Relative Radiant Sensitivity vs. Angular Displacement

Dimensions in mm