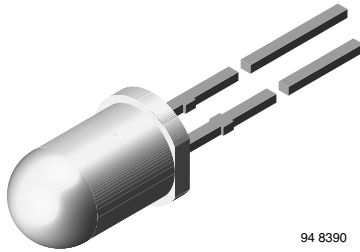


Ambient Light Sensor, RoHS Compliant



94 8390

DESCRIPTION

TEPT5600 ambient light sensor is a silicon NPN epitaxial planar phototransistor in a T-1 $\frac{3}{4}$ package. It is sensitive to visible light much like the human eye and has peak sensitivity at 570 nm.

FEATURES

- Package type: leaded
- Package form: T-1 $\frac{3}{4}$
- Dimensions (in mm): \varnothing 5
- High photo sensitivity
- Adapted to human eye responsivity
- Angle of half sensitivity: $\varphi = \pm 20^\circ$
- Lead (Pb)-free component in accordance with RoHS 2002/95/EC and WEEE 2002/96/EC


RoHS
COMPLIANT

APPLICATIONS

- Replacement of cadmium sulfide (CdS) photo resistors
- Ambient light sensor

PRODUCT SUMMARY

COMPONENT	I _{PCE} (μA)	φ (deg)	λ _{0.5} (nm)
TEPT5600	350	± 20	440 to 800

Note

Test condition see table "Basic Characteristics"

ORDERING INFORMATION

ORDERING CODE	PACKAGING	REMARKS	PACKAGE FORM
TEPT5600	Bulk	MOQ: 4000 pcs, 4000 pcs/bulk	T-1 $\frac{3}{4}$

Note

MOQ: minimum order quantity

ABSOLUTE MAXIMUM RATINGS

PARAMETER	TEST CONDITION	SYMBOL	VALUE	UNIT
Collector emitter voltage		V _{CEO}	6	V
Emitter collector voltage		V _{ECO}	1.5	V
Collector current		I _C	20	mA
Power dissipation	T _{amb} ≤ 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 distance to package	T _{sd}	260	°C
Thermal resistance junction/ambient	J-STD-051, soldered on PCB	R _{thJA}	230	K/W

Note

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

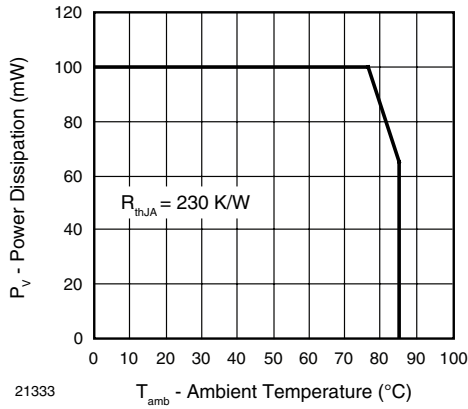


Fig. 1 - Power Dissipation Limit vs. Ambient Temperature

BASIC CHARACTERISTICS						
PARAMETER	TEST CONDITION	SYMBOL	MIN.	TYP.	MAX.	UNIT
Collector emitter breakdown voltage	$I_C = 0.1 \text{ mA}$	V_{CE0}	6			V
Collector dark current	$V_{CE} = 5 \text{ V}, E = 0$	I_{CE0}		3	50	nA
Collector emitter capacitance	$V_{CE} = 0 \text{ V}, f = 1 \text{ MHz}, E = 0$	C_{CE0}		16		pF
Photo current	$E_v = 20 \text{ lx}, \text{CIE illuminant A}, V_{CE} = 5 \text{ V}$	I_{PCE}	25	70	140	μA
	$E_v = 100 \text{ lx}, \text{CIE illuminant A}, V_{CE} = 5 \text{ V}$	I_{PCE}		350		μA
Angle of half sensitivity		ϕ		± 20		deg
Wavelength of peak sensitivity		λ_p		570		nm
Range of spectral bandwidth		$\lambda_{0.5}$		440 to 800		nm

Note

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

BASIC CHARACTERISTICS

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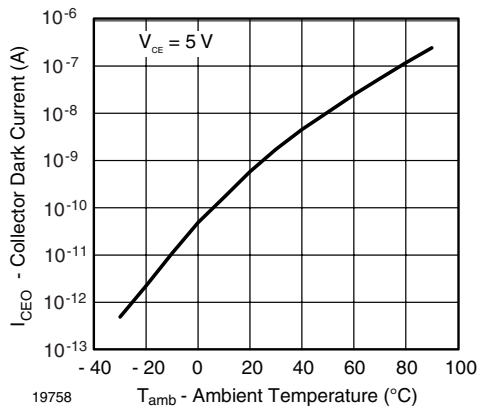


Fig. 2 - Collector Dark Current vs. Ambient Temperature

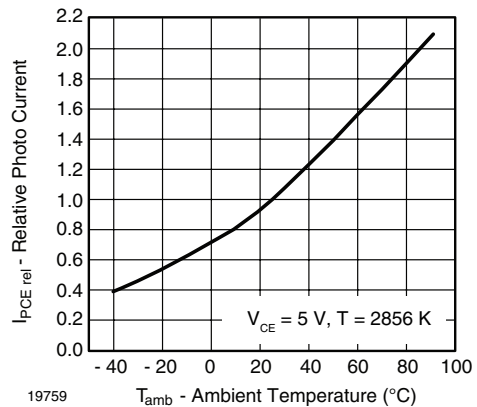


Fig. 3 - Relative Photo Current vs. Ambient Temperature

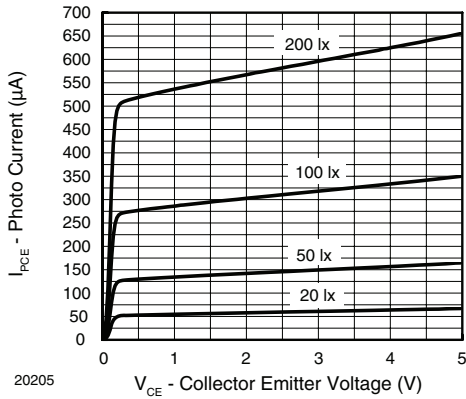


Fig. 4 - Photo Current vs. Collector Emitter Voltage

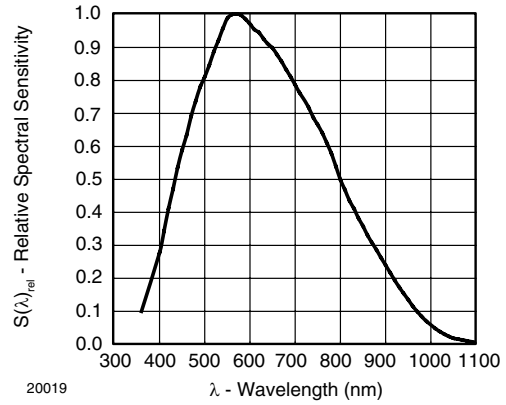


Fig. 7 - Relative Spectral Sensitivity vs. Wavelength

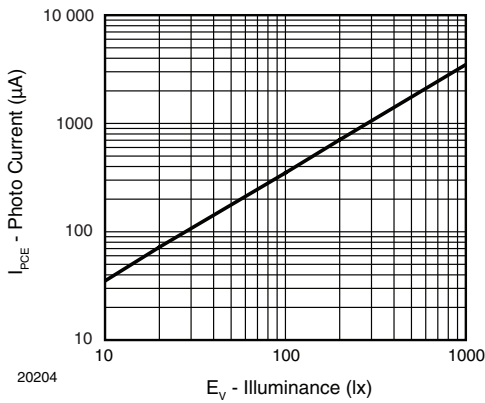


Fig. 5 - Photo Current vs. Illuminance

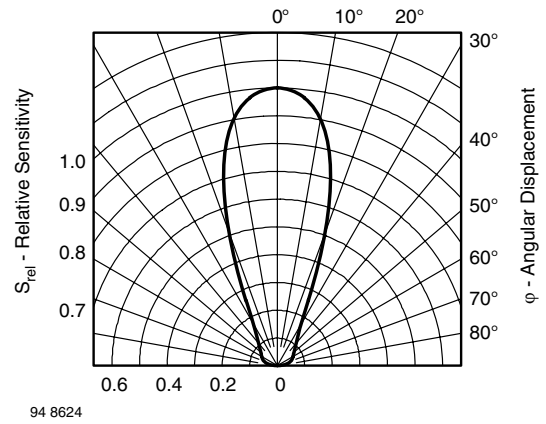


Fig. 8 - Relative Radiant Sensitivity vs. Angular Displacement

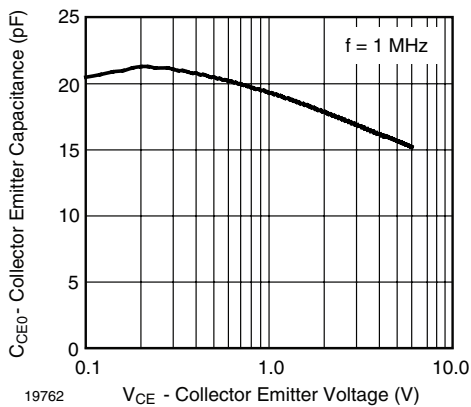
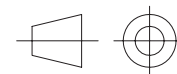
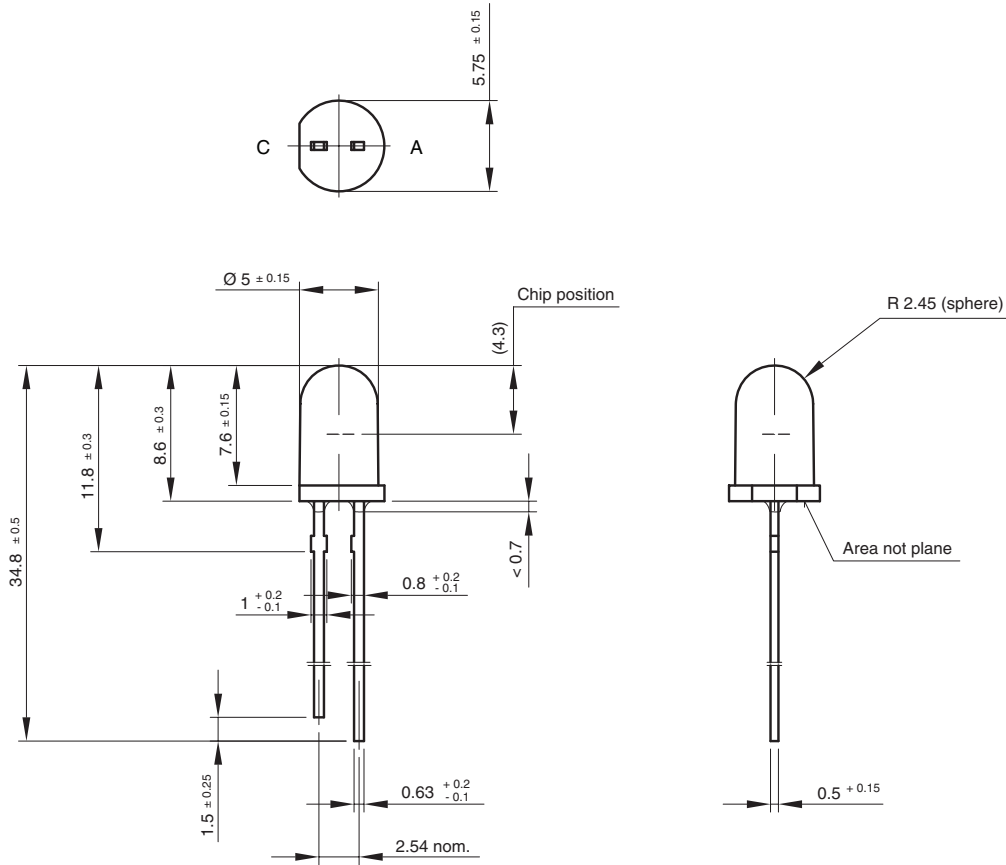


Fig. 6 - Collector Emitter Capacitance vs. Collector Emitter Voltage

PACKAGE DIMENSIONS in millimeters



technical drawings
according to DIN
specifications

Drawing-No.: 6.544-5185.02-4

Issue:1; 01.07.96

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