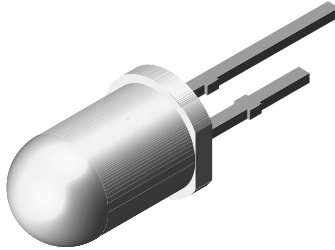


Ambient Light Sensor



94 8390

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: $\varphi = \pm 20^\circ$
- Compliant to RoHS Directive 2002/95/EC and in accordance to WEEE 2002/96/EC



Note

** Please see document "Vishay Material Category Policy":
www.vishay.com/doc?99902

APPLICATIONS

- Replacement of cadmium sulfide (CdS) photoresistors
- Ambient light sensor

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.

PRODUCT SUMMARY

COMPONENT	I_{PCE} (A)	φ (deg)	$\lambda_{0.5}$ (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. Label with I_{PCE} group on each bulk. Specifications of group A/B/C/D see table "Type Dedicated Characteristics" on page 2	T-1 $\frac{3}{4}$

Note

- MOQ: minimum order quantity

ABSOLUTE MAXIMUM RATINGS ($T_{amb} = 25^\circ\text{C}$, unless otherwise specified)

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	$T_{amb} \leq 55^\circ\text{C}$	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 distance to package	T_{sd}	260	$^\circ\text{C}$
Thermal resistance junction/ambient	J-STD-051, soldered on PCB	R_{thJA}	230	K/W

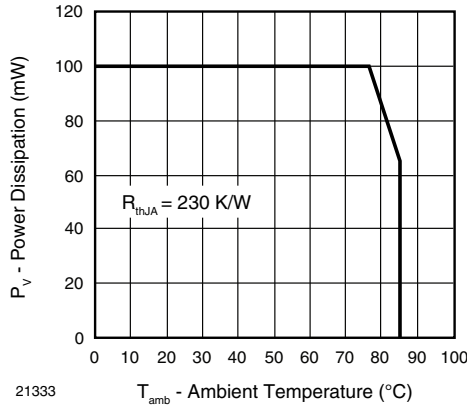


Fig. 1 - Power Dissipation Limit vs. Ambient Temperature

BASIC CHARACTERISTICS (T _{amb} = 25 °C, unless otherwise specified)						
PARAMETER	TEST CONDITION	SYMBOL	MIN.	TYP.	MAX.	UNIT
Collector emitter breakdown voltage	I _C = 0.1 mA	V _{CEO}	6			V
Collector dark current	V _{CE} = 5 V, E = 0	I _{CEO}		3	50	nA
Collector emitter capacitance	V _{CE} = 0 V, f = 1 MHz, E = 0	C _{CEO}		16		pF
Photo current	E _v = 20 lx, CIE illuminant A, V _{CE} = 5 V	I _{PCE}	25		226.8	μA
	E _v = 100 lx, CIE illuminant A, V _{CE} = 5 V	I _{PCE}		350		μA
Angle of half sensitivity		φ		± 20		deg
Wavelength of peak sensitivity		λ _p		570		nm
Range of spectral bandwidth		λ _{0.5}		440 to 800		nm

TYPE DEDICATED CHARACTERISTICS (T _{amb} = 25 °C, unless otherwise specified)						
PARAMETER	TEST CONDITION	BINNED GROUP	SYMBOL	MIN.	MAX.	UNIT
Photo current	E _v = 20 lx, CIE illuminant A, V _{CE} = 5 V, T _{amb} = 25 °C	A	I _{PCE}	25	50.4	μA
		B	I _{PCE}	41.7	84	μA
		C	I _{PCE}	69.4	140	μA
		D	I _{PCE}	113.4	226.8	μA

Note

- Each 4000 piece bag will contain a single group. The label on the bag will indicate which binned group is in the bag. A specific group cannot be ordered. Production shipments containing multiple bags will likely include multiple groups. Please design accordingly.

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

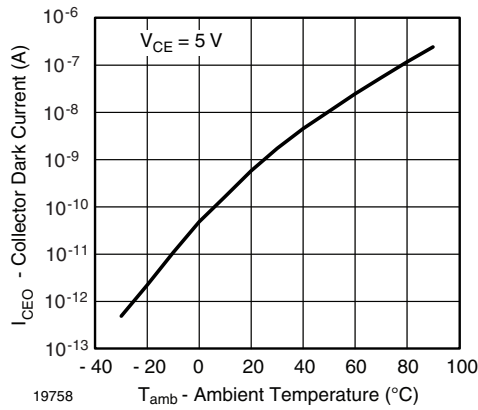


Fig. 1 - Collector Dark Current vs. Ambient Temperature

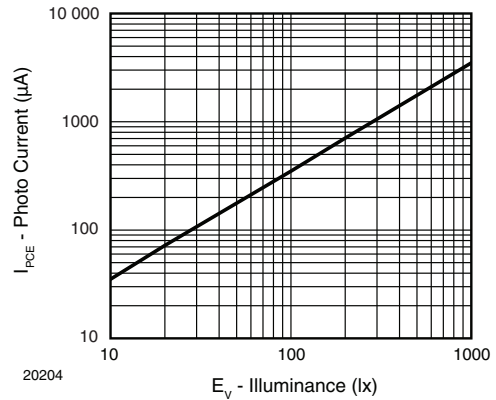


Fig. 4 - Photo Current vs. Illuminance

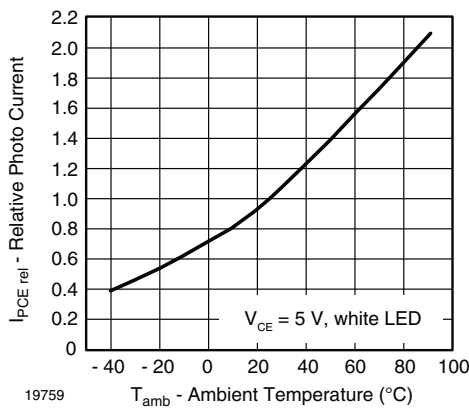


Fig. 2 - Relative Photo Current vs. Ambient Temperature

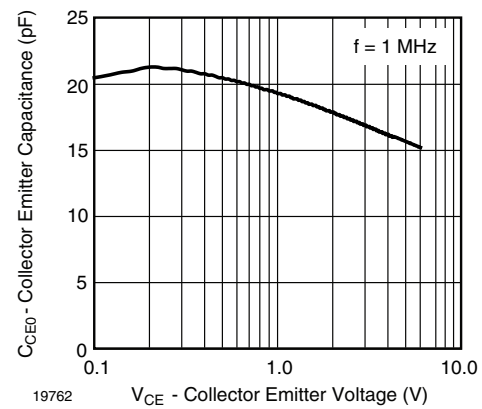


Fig. 5 - Collector Emitter Capacitance vs. Collector Emitter Voltage

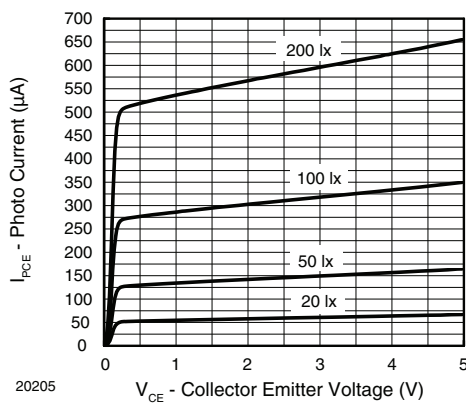


Fig. 3 - Photo Current vs. Collector Emitter Voltage

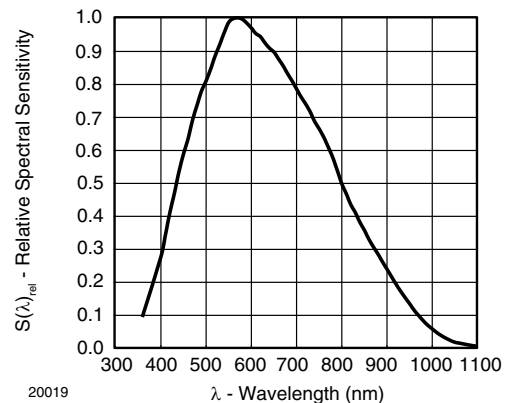
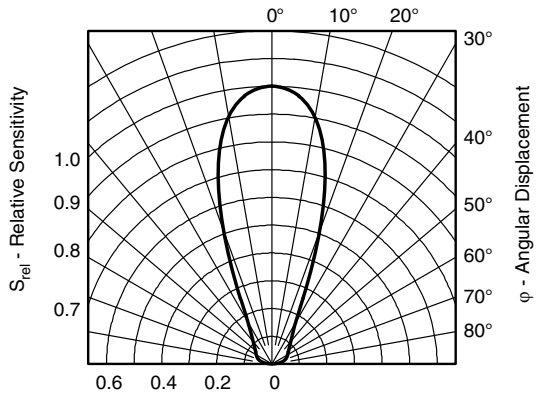


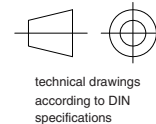
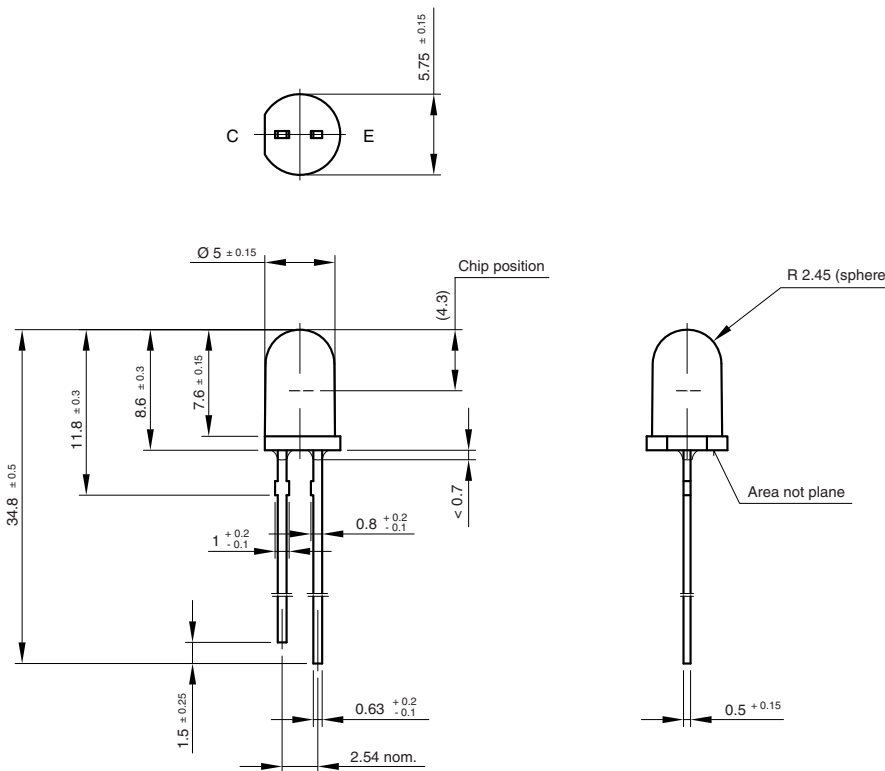
Fig. 6 - Relative Spectral Sensitivity vs. Wavelength



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Fig. 7 - Relative Radiant Sensitivity vs. Angular Displacement

PACKAGE DIMENSIONS in millimeters



Drawing-No.: 6.544-5185.03-4
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