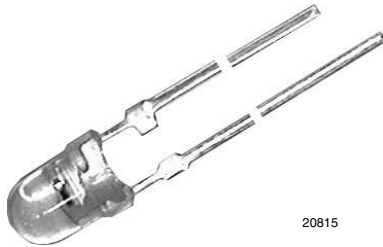


Ambient Light Sensor, RoHS Compliant



20815

DESCRIPTION

TEPT4400 ambient light sensor is a silicon NPN epitaxial planar phototransistor in a T-1 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
- Dimensions (in mm): $\varnothing 3$
- High photo sensitivity
- Adapted to human eye responsivity
- Angle of half sensitivity: $\varphi = \pm 30^\circ$
- Lead (Pb)-free component in accordance with RoHS 2002/95/EC and WEEE 2002/96/EC


RoHS
COMPLIANT

APPLICATIONS

- Ambient light sensor for control of display backlight dimming in LCD displays and keypad backlighting of mobile devices and in industrial on/off-lighting operation
- Replacement of CdS photoresistors

PRODUCT SUMMARY

COMPONENT	I_{PCE} (μA)	φ (deg)	$\lambda_{0.5}$ (nm)
TEPT4400	200	± 30	440 to 800

Note

Test condition see table "Basic Characteristics"

ORDERING INFORMATION

ORDERING CODE	PACKAGING	REMARKS	PACKAGE FORM
TEPT4400	Bulk	MOQ: 5000 pcs, 5000 pcs/bulk	T-1

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	$T_{amb} \leq 55^\circ C$	P_V	100	mW
Junction temperature		T_j	100	$^\circ C$
Operating temperature range		T_{amb}	- 40 to + 85	$^\circ C$
Storage temperature range		T_{stg}	- 40 to + 100	$^\circ C$
Soldering temperature	$t \leq 3$ s	T_{sd}	260	$^\circ C$
Thermal resistance junction/ambient	J-STD-051, soldered on PCB	R_{thJA}	300	K/W

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

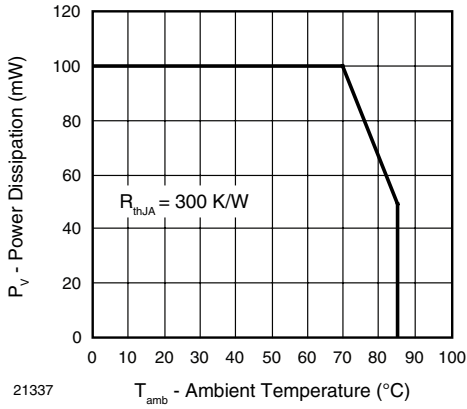


Fig. 1 - Power Dissipation Limit vs. Ambient Temperature

BASIC CHARACTERISTICS						
PARAMETER	TEST CONDITION	SYMBOL	MIN.	TYP.	MAX.	UNIT
Collector emitter breakdown voltage	I _C = 0.1 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
Collector light current	E _v = 20 lx, CIE illuminant A, V _{CE} = 5 V	I _{PCE}	15	40	70	μA
	E _v = 100 lx, CIE illuminant A, V _{CE} = 5 V	I _{PCE}		200		μA
Angle of half sensitivity		φ		± 30		deg
Wavelength of peak sensitivity		λ _p		570		nm
Range of spectral bandwidth		λ _{0.5}		440 to 800		nm
Collector emitter saturation voltage	E _v = 20 lx, CIE illuminant A, I _{PCE} = 1.2 μA	V _{CEsat}		0.1		V

Note

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

BASIC CHARACTERISTICS

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

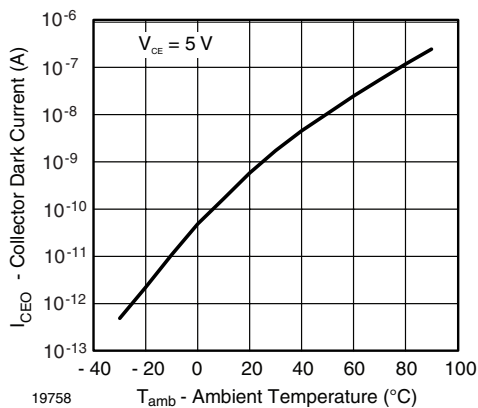


Fig. 2 - Collector Dark Current vs. Ambient Temperature

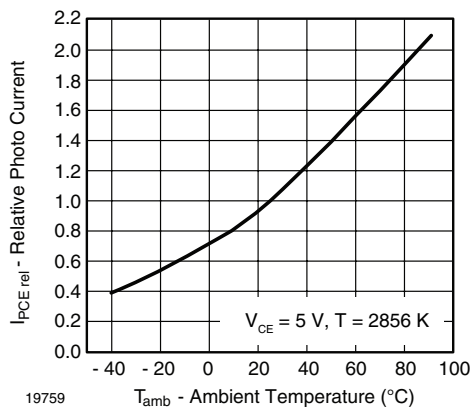


Fig. 3 - Relative Photo Current vs. Ambient Temperature

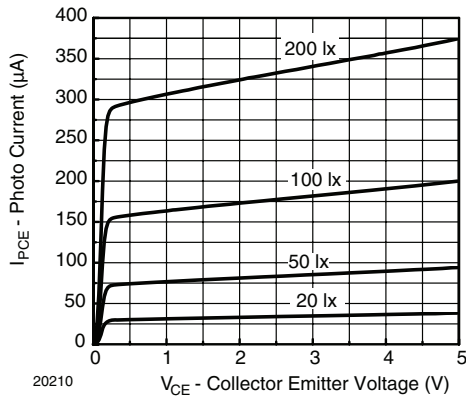


Fig. 4 - Photo Current vs. Collector Emitter Voltage

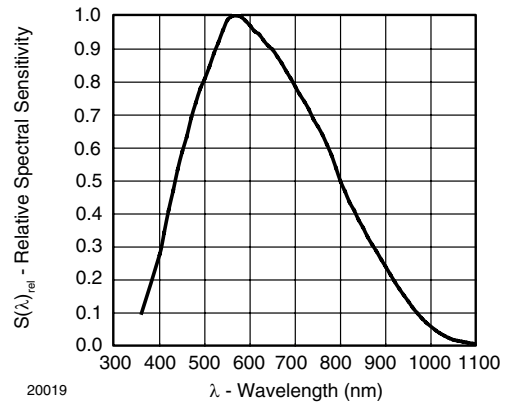


Fig. 7 - Relative Spectral Sensitivity vs. Wavelength

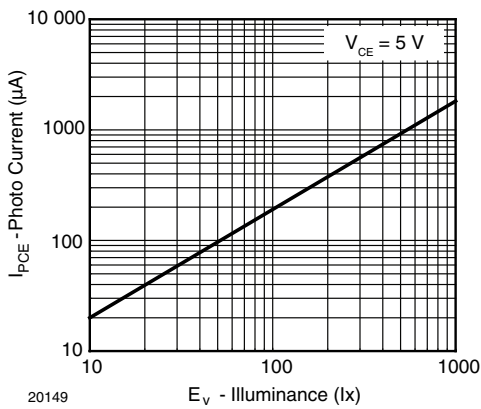


Fig. 5 - Photo Current vs. Illuminance

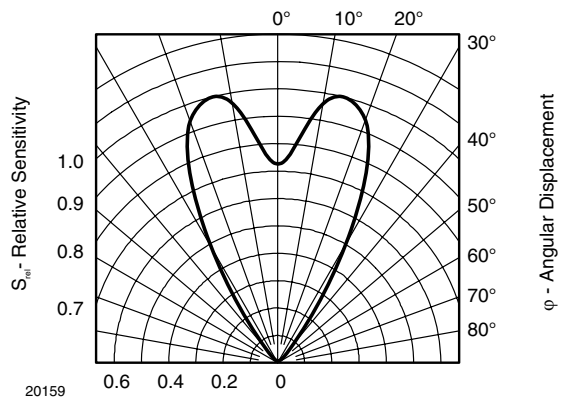


Fig. 8 - Relative Radiant Sensitivity vs. Angular Displacement

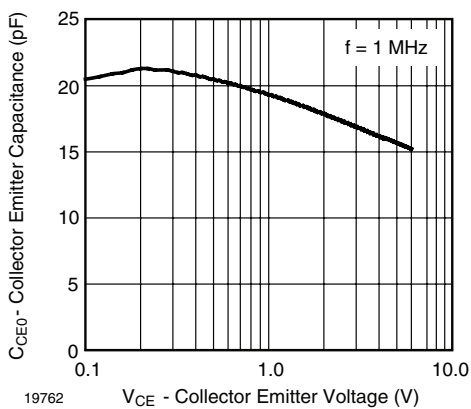
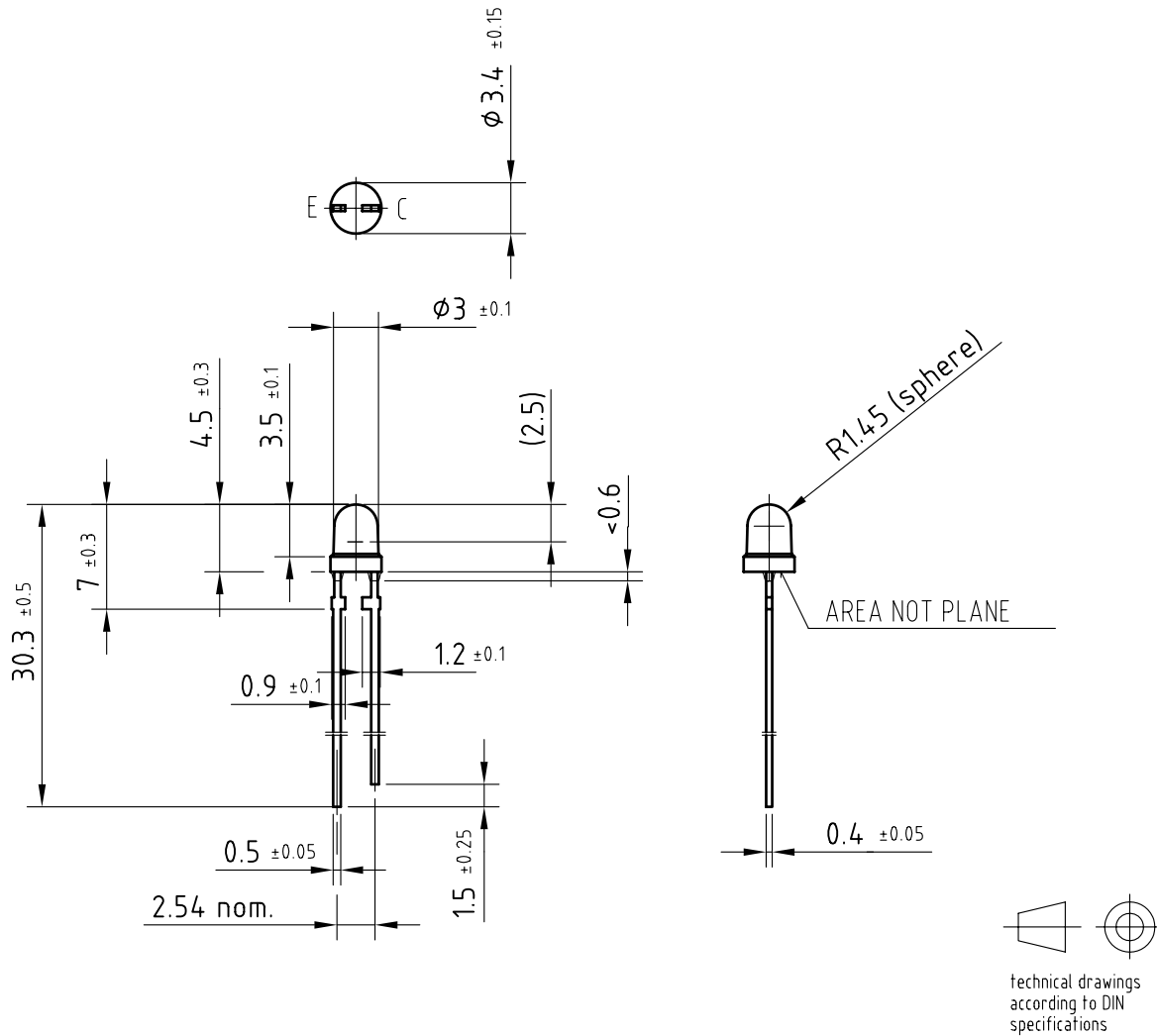


Fig. 6 - Collector Emitter Capacitance vs. Collector Emitter Voltage

PACKAGE DIMENSIONS in millimeters



Drawing-No.: 6.544-5054.01-4

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