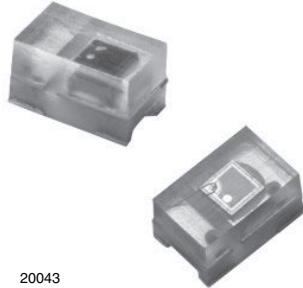


Ambient Light Sensor



20043

DESCRIPTION

TEMD6200FX01 is a high speed and high sensitive PIN photodiode in a miniature flat plastic package. It's spectral sensitivity is closely matched to the human eye.

FEATURES

- Package type: surface mount
- Package form: 0805
- Dimensions (L x W x H in mm): 2 x 1.25 x 0.85
- Radiant sensitive area (in mm²): 0.27
- AEC-Q101 qualified
- High photo sensitivity
- Adapted to human eye responsivity
- Angle of half sensitivity: $\phi = \pm 60^\circ$
- Floor life: 168 h, MSL 3, acc. J-STD-020
- Compliant to RoHS Directive 2002/95/EC and in accordance to WEEE 2002/96/EC

 AUTOMOTIVE
GRADE

RoHS
COMPLIANT
GREEN
(5-2009)**

Note

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

APPLICATIONS

- Automotive sensors
- Ambient light sensors
- Backlight dimming
- Mobil phones
- Notebooks
- Computers

PRODUCT SUMMARY

COMPONENT	I _{PCE} (μA)	φ (deg)	λ _{0.5} (nm)
TEMD6200FX01	0.04	± 60	430 to 610

Note

- Test condition see table "Basic Characteristics"

ORDERING INFORMATION

ORDERING CODE	PACKAGING	REMARKS	PACKAGE FORM
TEMD6200FX01	Tape and reel	MOQ: 3000 pcs, 3000 pcs/reel	0805

Note

- MOQ: minimum order quantity

ABSOLUTE MAXIMUM RATINGS (T_{amb} = 25 °C, unless otherwise specified)

PARAMETER	TEST CONDITION	SYMBOL	VALUE	UNIT
Reverse voltage		V _R	16	V
Power dissipation	T _{amb} ≤ 55 °C	P _V	100	mW
Junction temperature		T _j	100	°C
Operating temperature range		T _{amb}	- 40 to + 100	°C
Storage temperature range		T _{stg}	- 40 to + 100	°C
Soldering temperature	In accordance with fig. 6	T _{sd}	260	°C
Thermal resistance junction/ambient		R _{thJA}	270	K/W

BASIC CHARACTERISTICS ($T_{amb} = 25\text{ }^{\circ}\text{C}$, unless otherwise specified)						
PARAMETER	TEST CONDITION	SYMBOL	MIN.	TYP.	MAX.	UNIT
Breakdown voltage	$I_R = 100\text{ }\mu\text{A}$, $E = 0\text{ lx}$	$V_{(BR)}$	16			V
Reverse dark current	$V_R = 10\text{ V}$, $E = 0\text{ lx}$	I_{ro}		0.1	5	nA
Diode capacitance	$V_R = 0\text{ V}$, $f = 1\text{ MHz}$, $E = 0\text{ lx}$	C_D		60		pF
	$V_R = 5\text{ V}$, $f = 1\text{ MHz}$, $E = 0\text{ lx}$	C_D		24		pF
Reverse light current	$E_e = 1\text{ mW/cm}^2$, $\lambda = 550\text{ nm}$, $V_R = 5\text{ V}$	I_{ra}		1		μA
	$E_v = 100\text{ lx}$, CIE illuminant A	I_{ra}	0.03	0.04		μA
Angle of half sensitivity		ϕ		± 60		deg
Wavelength of peak sensitivity		λ_p		540		nm
Range of spectral bandwidth		$\lambda_{0.5}$		430 to 610		nm
Rise time	$U_R = 5\text{ V}$, $R_L = 50\text{ }\Omega$, TLMW3300	t_r		150		ns
Fall time	$U_R = 5\text{ V}$, $R_L = 50\text{ }\Omega$, TLMW3300	t_f		150		ns

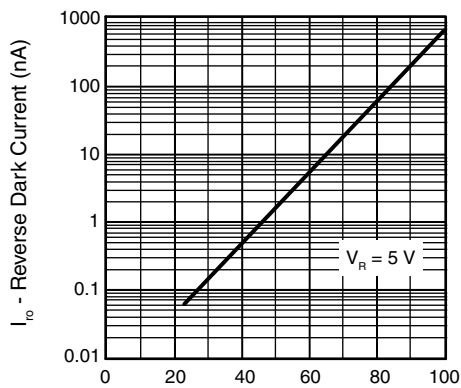
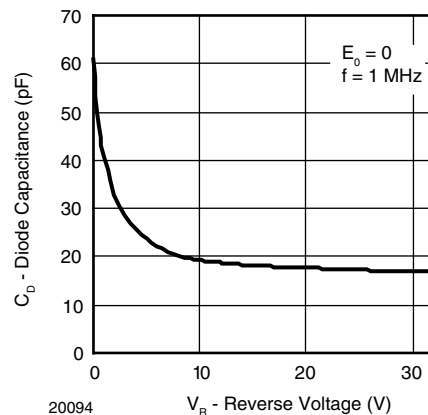
BASIC CHARACTERISTICS ($T_{amb} = 25\text{ }^{\circ}\text{C}$, unless otherwise specified)

 18818 T_{amb} - Ambient Temperature ($^{\circ}\text{C}$)

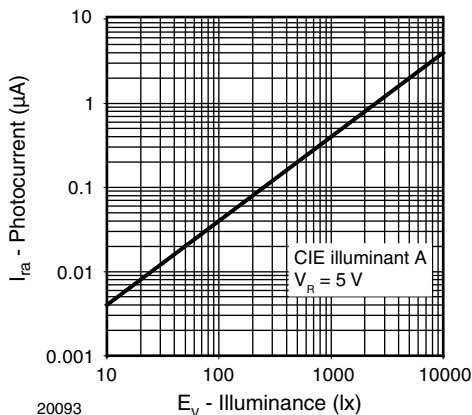
Fig. 1 - Diode Capacitance vs. Reverse Voltage



20094

 V_R - Reverse Voltage (V)

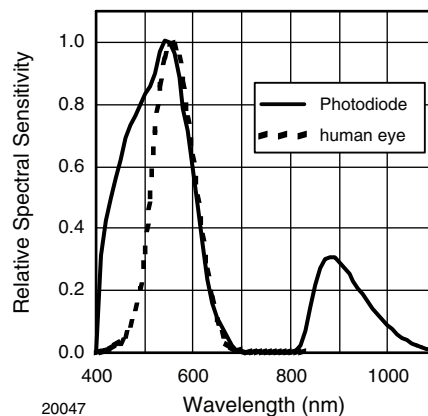
Fig. 3 - Diode Capacitance vs. Reverse Voltage



20093

 E_v - Illuminance (lx)

Fig. 2 - Reverse Light Current vs. Illuminance



20047

Wavelength (nm)

Fig. 4 - Relative Spectral Sensitivity vs. Wavelength

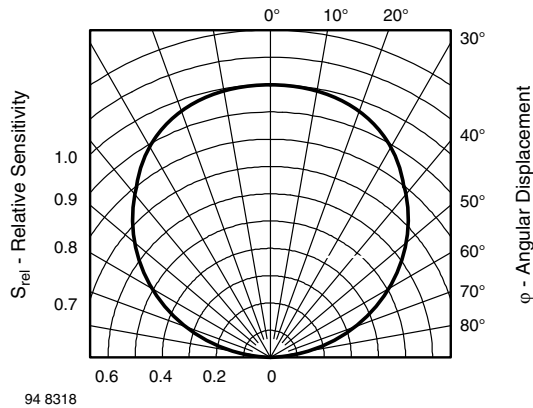


Fig. 1 - Relative Radiant Sensitivity vs. Angular Displacement

SOLDER PROFILE

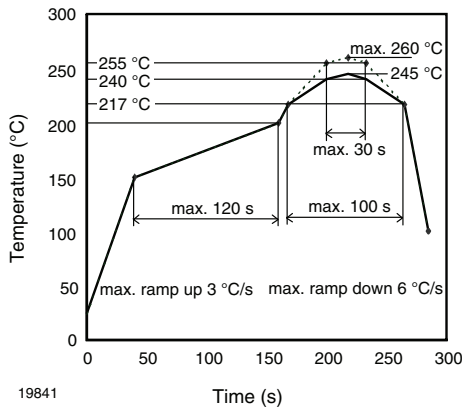


Fig. 5 - Lead (Pb)-free Reflow Solder Profile acc. J-STD-020

DRYPACK

Devices are packed in moisture barrier bags (MBB) to prevent the products from moisture absorption during transportation and storage. Each bag contains a desiccant.

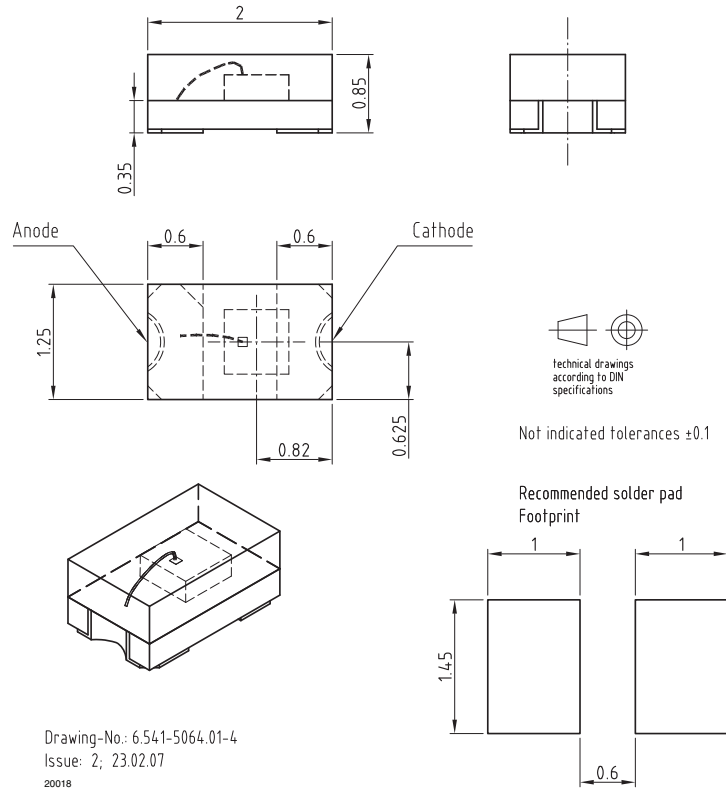
FLOOR LIFE

Time between soldering and removing from MBB must not exceed the time indicated in J-STD-020:
 Moisture sensitivity: level 3
 Floor life: 168 h
 Conditions: $T_{amb} < 30\text{ °C}$, $RH < 60\%$

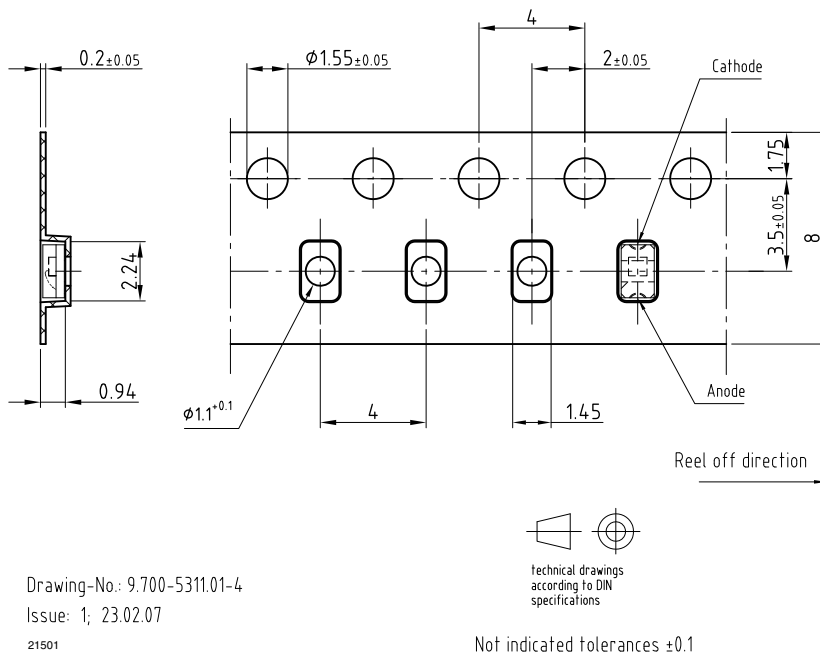
DRYING

In case of moisture absorption devices should be baked before soldering. Conditions see J-STD-020 or label.
 Devices taped on reel dry using recommended conditions:
 192 h at $40\text{ °C} (+ 5\text{ °C})$, $RH < 5\%$
 or
 96 h at $60\text{ °C} (+ 5\text{ °C})$, $RH < 5\%$.

PACKAGE DIMENSIONS in millimeters

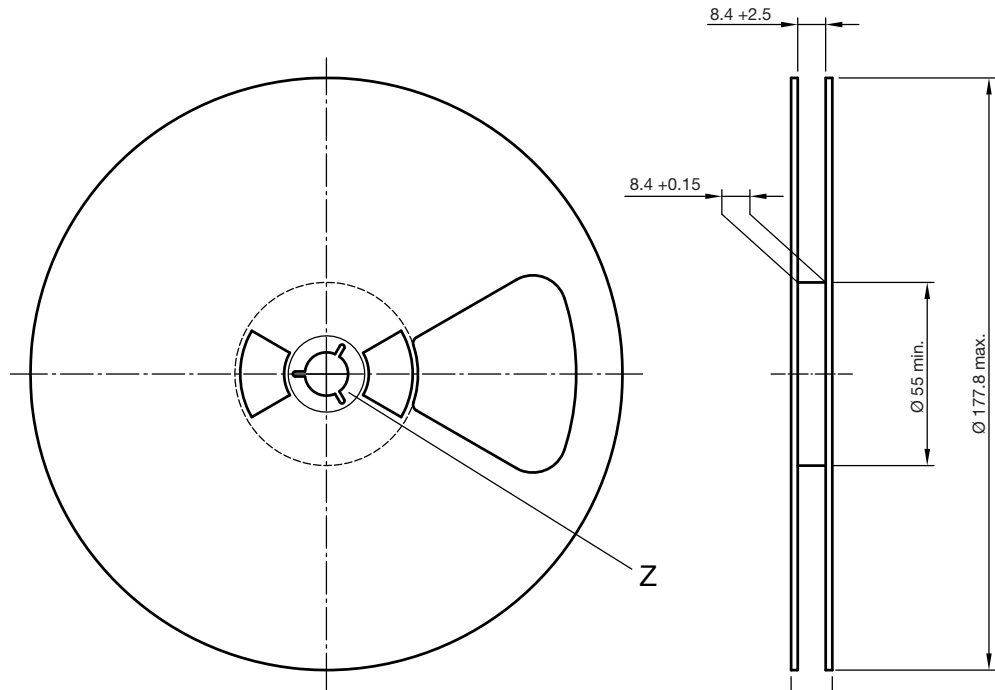


BLISTER TAPE DIMENSIONS in millimeters

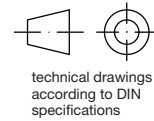
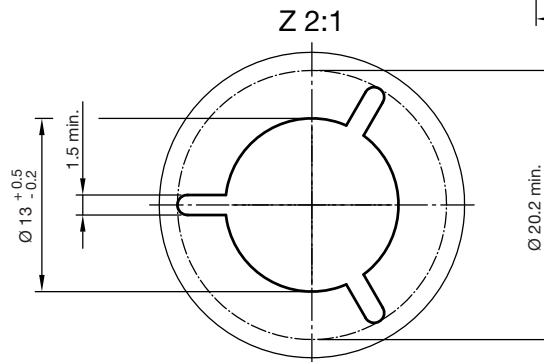




REEL DIMENSIONS in millimeters



Form of the leave open of the wheel is supplier specific.



Drawing-No.: 9.800-5096.01-4
 Issue: 2; 26.04.10
 20875



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