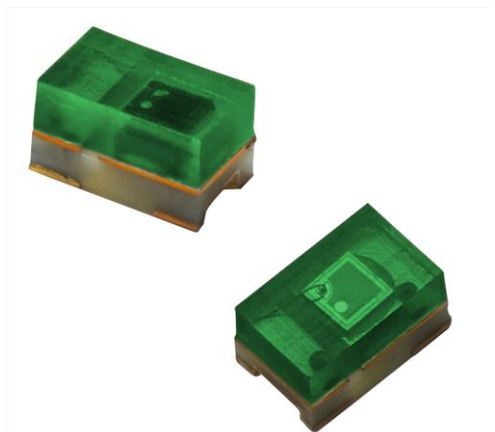


Ambient Light Sensor



DESCRIPTION

TEMD6200FX01 is a high speed and high sensitive PIN photodiode in a miniature flat plastic package. It is 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
- Material categorization: For definitions of compliance please see www.vishay.com/doc?99912



APPLICATIONS

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

PRODUCT SUMMARY

COMPONENT	I_{ra} (μA)	ϕ (deg)	$\lambda_{0.5}$ (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 ($T_{amb} = 25^\circ\text{C}$, unless otherwise specified)

PARAMETER	TEST CONDITION	SYMBOL	VALUE	UNIT
Reverse voltage		V_R	16	V
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 +100	$^\circ\text{C}$
Storage temperature range		T_{stg}	-40 to +100	$^\circ\text{C}$
Soldering temperature	In accordance with fig. 6	T_{sd}	260	$^\circ\text{C}$
Thermal resistance junction/ambient		R_{thJA}	270	K/W

BASIC CHARACTERISTICS ($T_{amb} = 25^{\circ}\text{C}$, unless otherwise specified)						
PARAMETER	TEST CONDITION	SYMBOL	MIN.	TYP.	MAX.	UNIT
Breakdown voltage	$I_R = 100\ \mu\text{A}$, $E = 0\ \text{lx}$	$V_{(BR)}$	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	0.09	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	$U_R = 5\ \text{V}$, $R_L = 50\ \Omega$, TLMW3300	t_r		150		ns
Fall time	$U_R = 5\ \text{V}$, $R_L = 50\ \Omega$, TLMW3300	t_f		150		ns

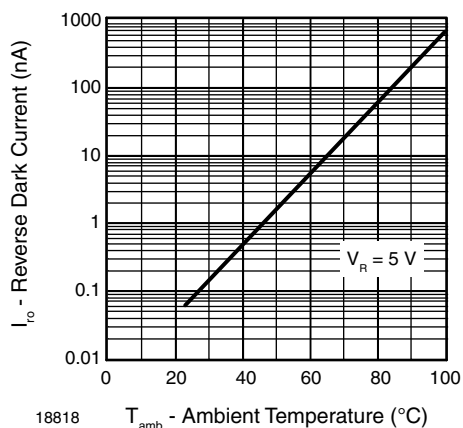
BASIC CHARACTERISTICS ($T_{amb} = 25^{\circ}\text{C}$, unless otherwise specified)


Fig. 1 - Reverse Dark Current vs. Ambient Temperature

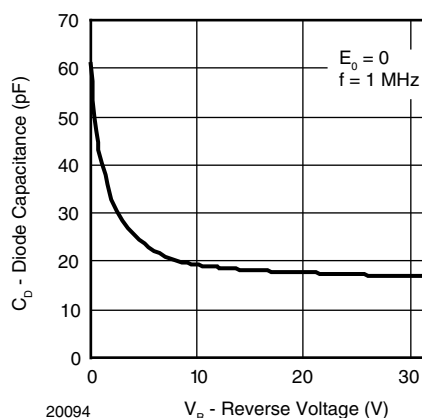


Fig. 3 - Diode Capacitance vs. Reverse Voltage

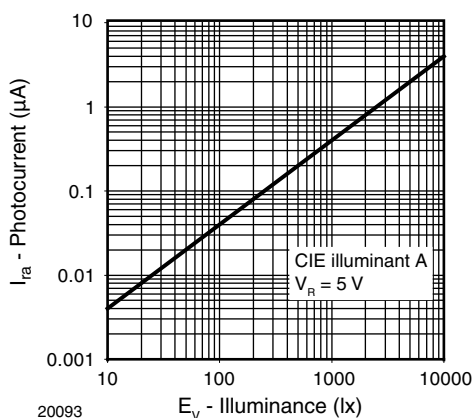


Fig. 2 - Reverse Light Current vs. Illuminance

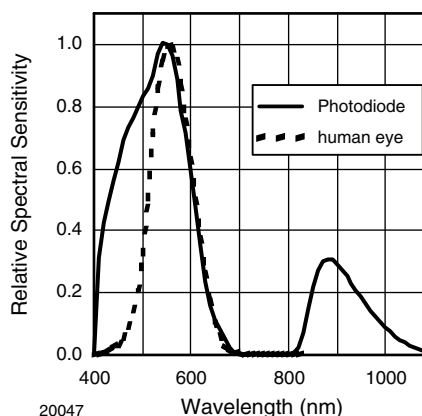


Fig. 4 - Relative Spectral Sensitivity vs. Wavelength

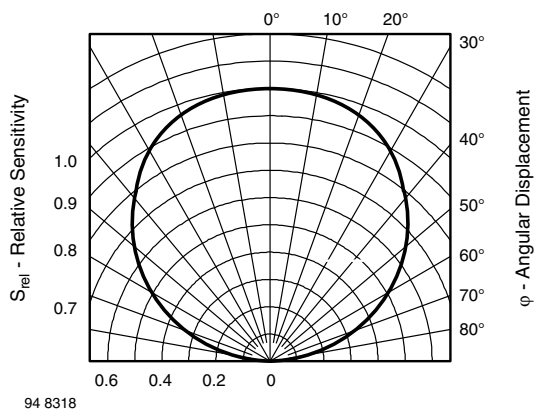


Fig. 5 - Relative Radiant Sensitivity vs. Angular Displacement

SOLDER PROFILE

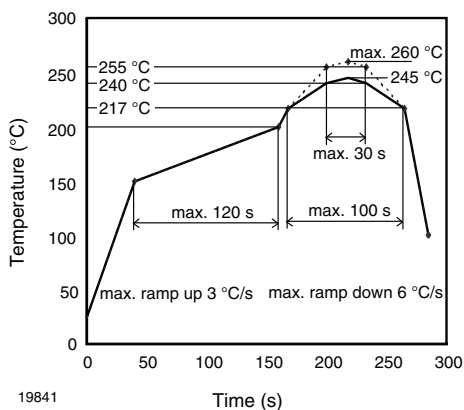


Fig. 6 - Lead (Pb)-free Reflow Solder Profile
acc. J-STD-020

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: $T_{amb} < 30\text{ °C}$, $RH < 60\%$

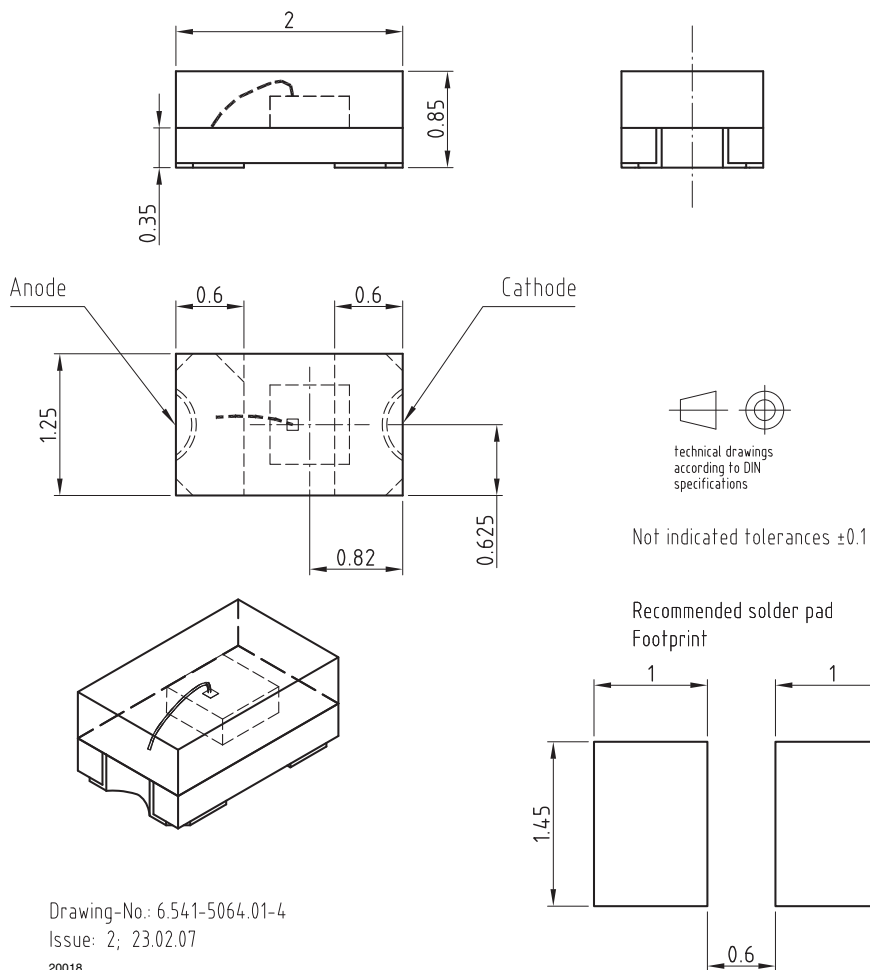
DRYING

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:

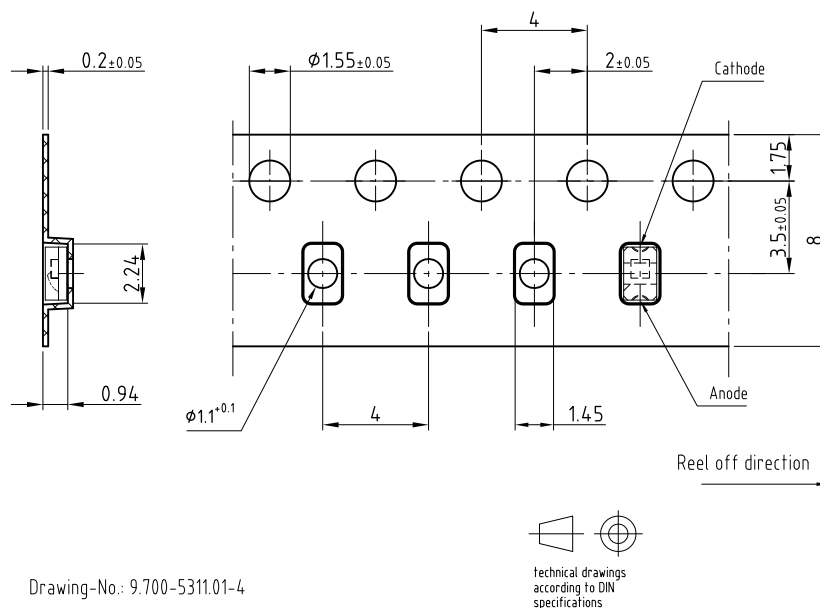
192 h at $40\text{ °C} (+ 5\text{ °C})$, $RH < 5\%$

or

96 h at $60\text{ °C} (+ 5\text{ °C})$, $RH < 5\%$.

PACKAGE DIMENSIONS in millimeters


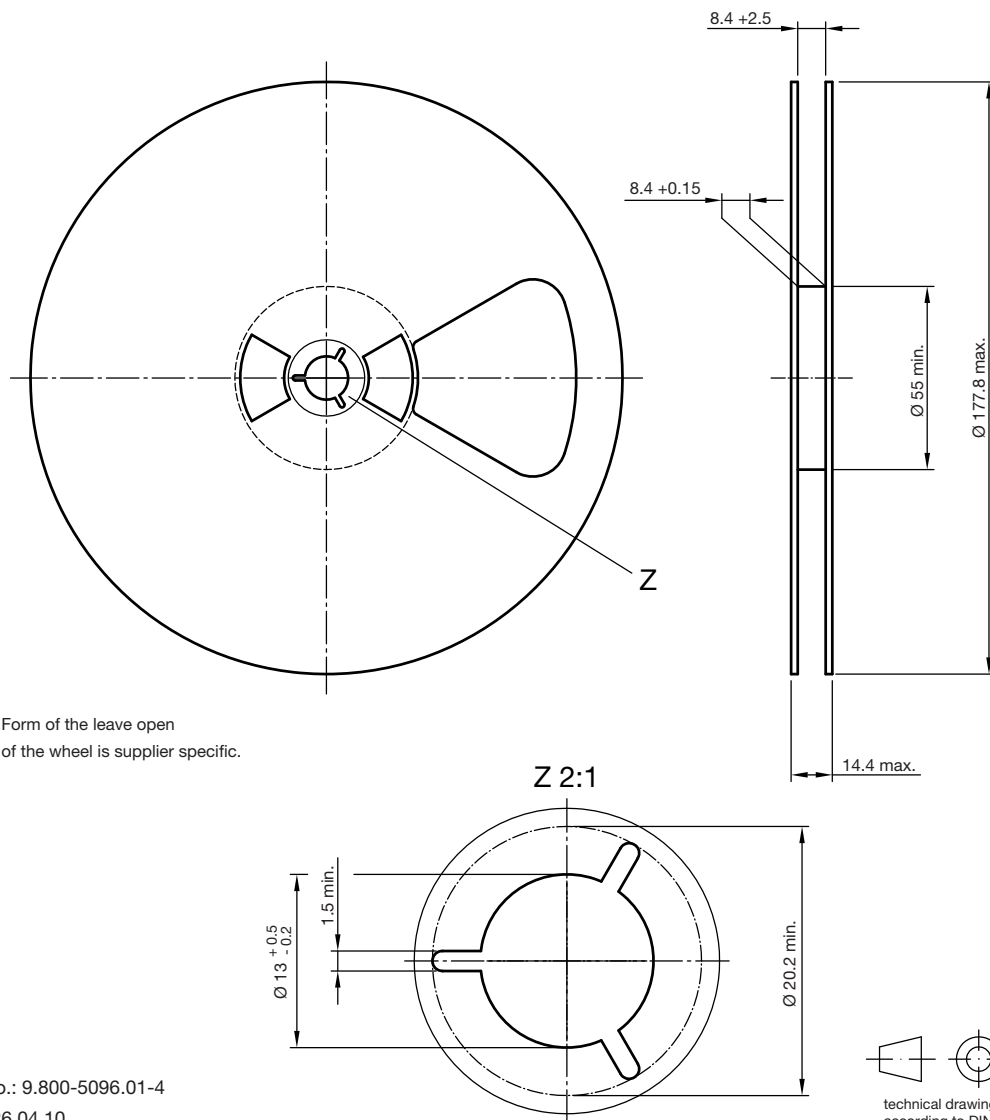
Drawing-No.: 6.541-5064.01-4
Issue: 2; 23.02.07
20018

BLISTER TAPE DIMENSIONS in millimeters


Drawing-No.: 9.700-5311.01-4
Issue: 1; 23.02.07
21501

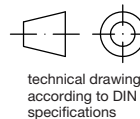


REEL DIMENSIONS in millimeters



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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