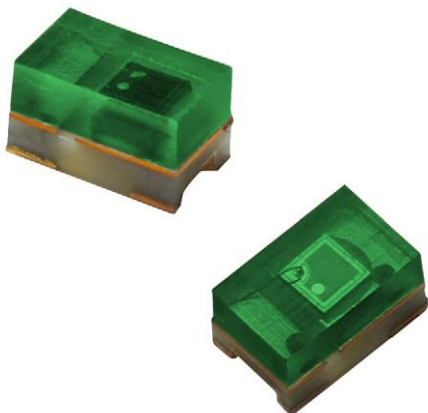


Ambient Light Sensor



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
- Adapted to human eye responsivity
- Angle of half sensitivity: $\phi = \pm 60^\circ$
- Floor life: 168 h, MSL 3, according to J-STD-020
- Material categorization: for definitions of compliance please see www.vishay.com/doc?99912

AUTOMOTIVE
GRADE

RoHS
COMPLIANT
HALOGEN
FREE
GREEN
(5-2008)

DESCRIPTION

TEMD6200FITX01 is a high speed and high sensitive PIN photodiode in a miniature flat plastic package. Its spectral sensitivity is closely matched to the human eye.

APPLICATIONS

- Automotive sensors
- Ambient light sensors
- Backlight dimming

PRODUCT SUMMARY

COMPONENT	I_{ra} (μA)	ϕ (°)	$\lambda_{0.5}$ (nm)
TEMD6200FITX01	0.04	± 60	430 to 610

Note

- Test condition see table “Basic Characteristics”

ORDERING INFORMATION

ORDERING CODE	PACKAGING	REMARKS	PACKAGE FORM
TEMD6200FITX01	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
Operating temperature range		T_{amb}	-40 to +110	°C
Storage temperature range		T_{stg}	-40 to +110	°C
Soldering temperature	In accordance with Fig. 6	T_{sd}	260	°C

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	0.09	μA
Angle of half sensitivity		ϕ	-	± 60	-	$^{\circ}$
Wavelength of peak sensitivity		λ_p	-	540	-	nm
Range of spectral bandwidth		$\lambda_{0.5}$	-	430 to 610	-	nm

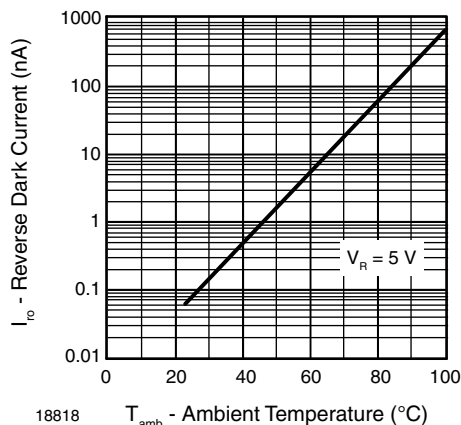
BASIC CHARACTERISTICS ($T_{amb} = 25\text{ }^{\circ}\text{C}$, unless otherwise specified)


Fig. 1 - Reverse Dark Current vs. Ambient Temperature

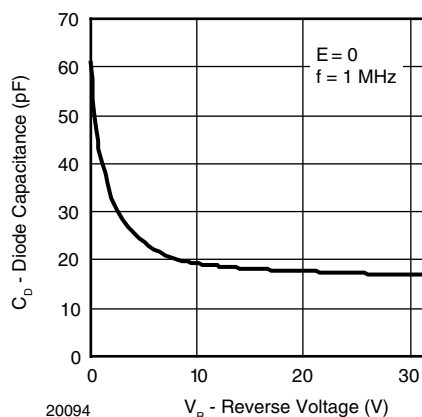


Fig. 3 - Diode Capacitance vs. Reverse Voltage

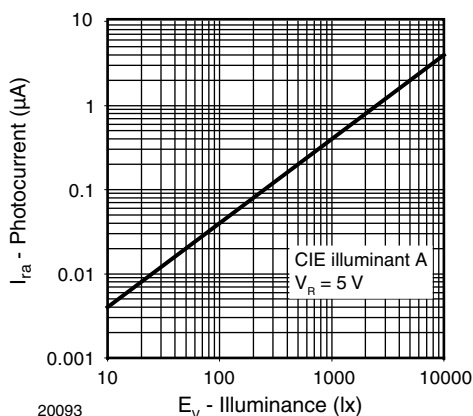


Fig. 2 - Reverse Light Current vs. Illuminance

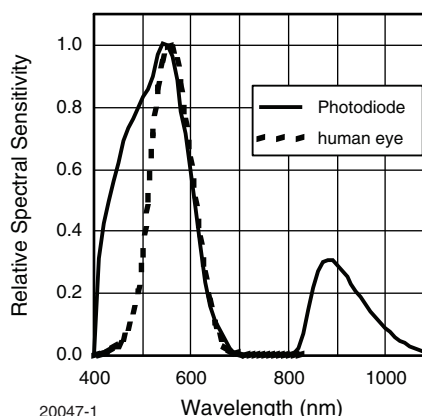


Fig. 4 - Relative Spectral Sensitivity vs. Wavelength

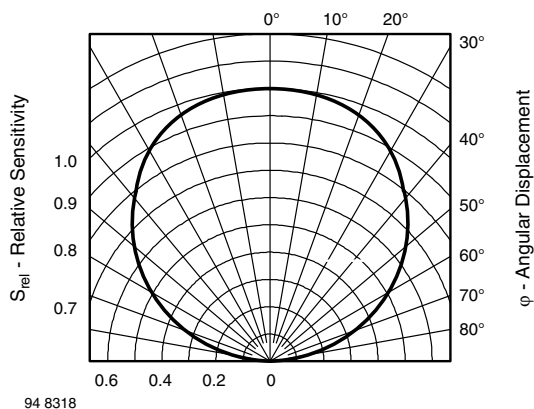


Fig. 5 - Relative Radiant Sensitivity vs. Angular Displacement

SOLDER PROFILE

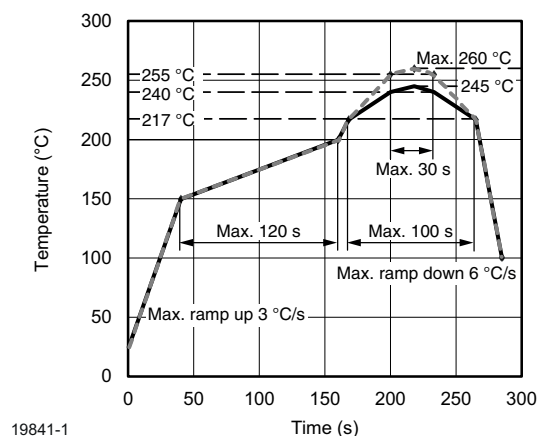


Fig. 6 - Lead (Pb)-free Reflow Solder Profile
acc. J-STD-020

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

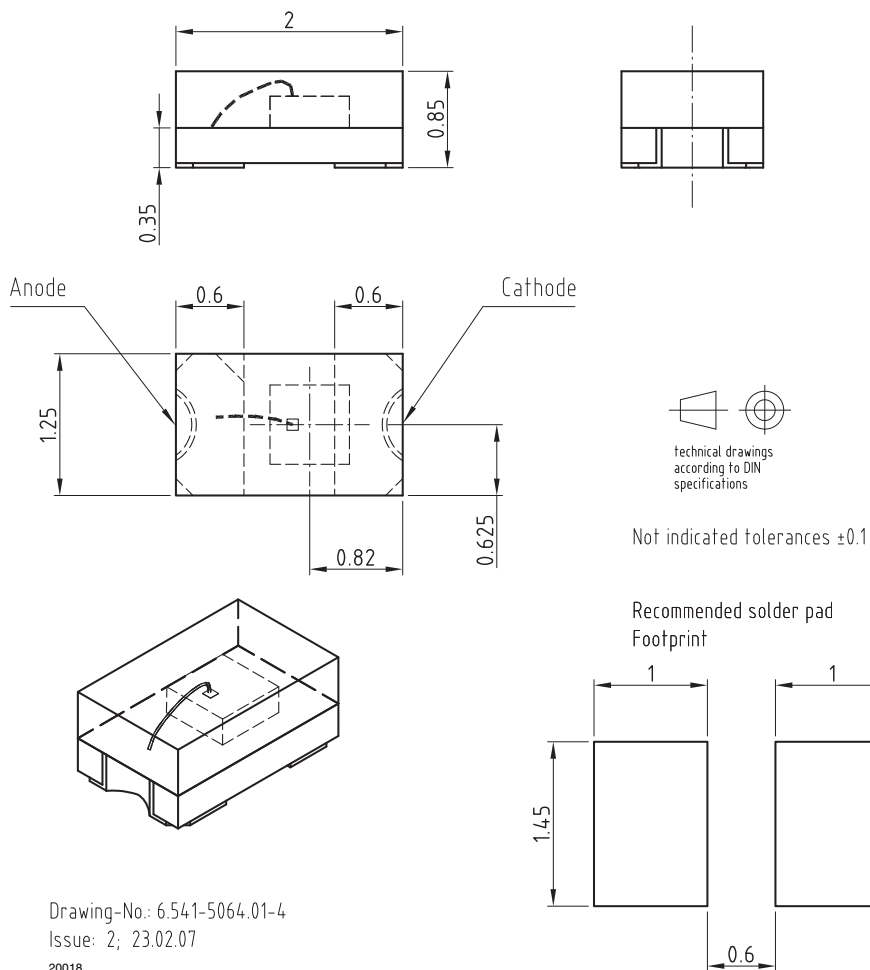
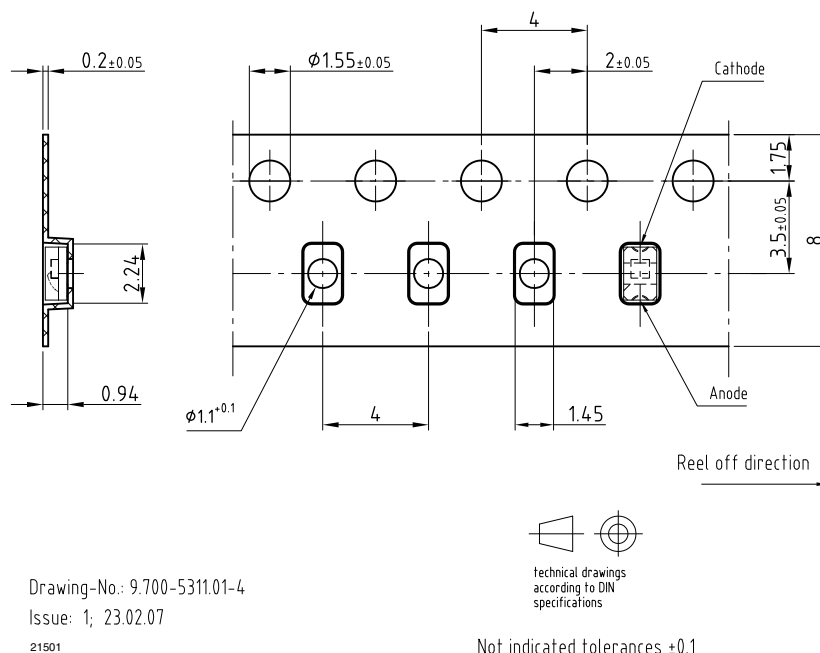
DRYING

In case of moisture absorption devices should be baked before soldering. Conditions see J-STD-033D or label. Devices taped on reel dry using recommended conditions:

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

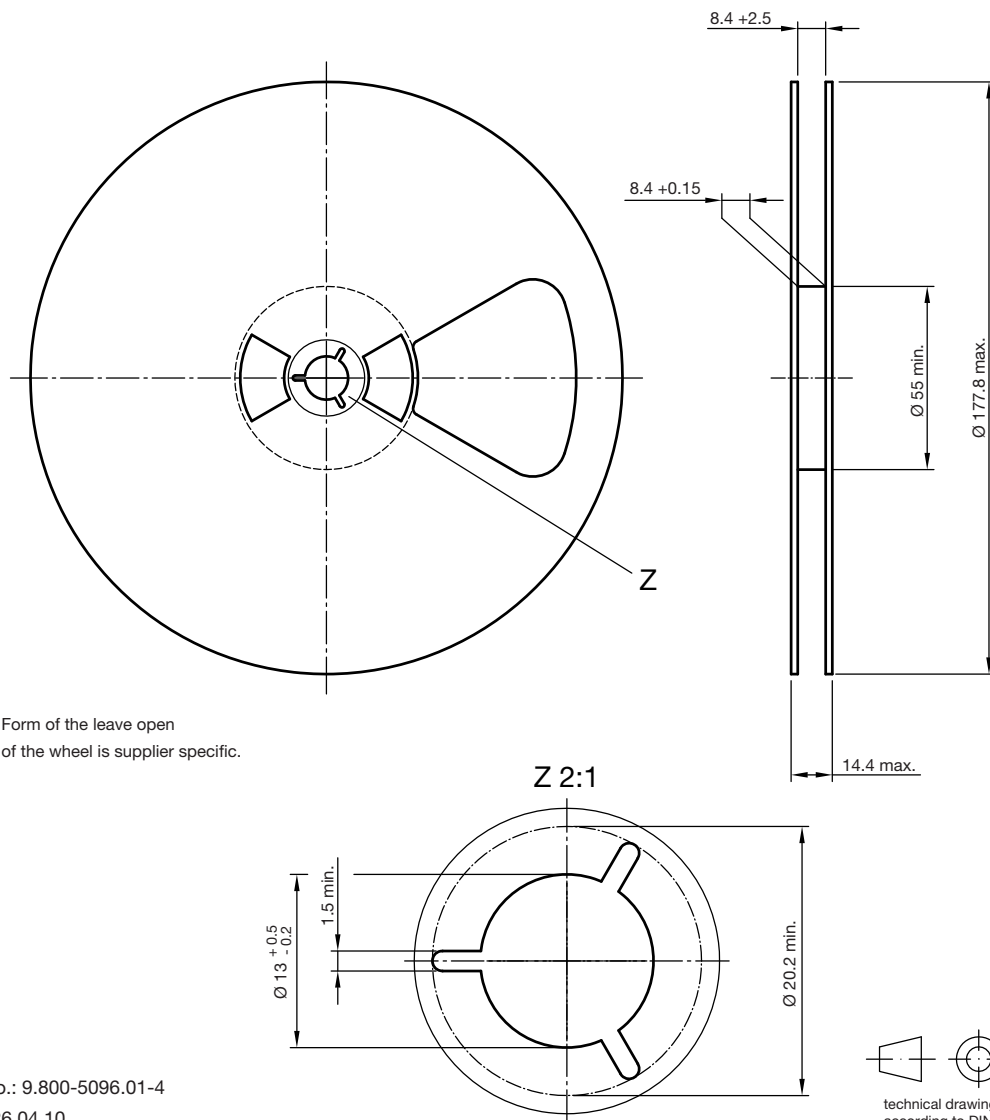
or

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

PACKAGE DIMENSIONS in millimeters

BLISTER TAPE DIMENSIONS in millimeters


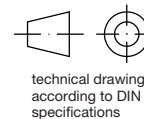


REEL DIMENSIONS in millimeters



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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