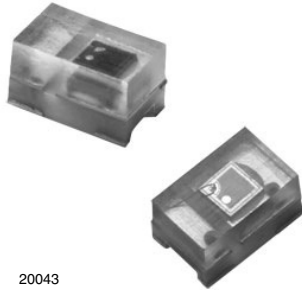


Ambient Light Sensor



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: $\varphi = \pm 60^\circ$
- 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



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

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

Note

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

BASIC CHARACTERISTICS						
PARAMETER	TEST CONDITION	SYMBOL	MIN.	TYP.	MAX.	UNIT
Breakdown voltage	$I_R = 100 \mu A, E = 0 \text{ lx}$	$V_{(BR)}$	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
	$E_v = 100 \text{ lx}, \text{ CIE illuminant A}$	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	$U_R = 5 \text{ V}, R_L = 50 \Omega, \text{ TLMW3300}$	t_r		150		ns
Fall time	$U_R = 5 \text{ V}, R_L = 50 \Omega, \text{ TLMW3300}$	t_f		150		ns

Note

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

BASIC CHARACTERISTICS

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

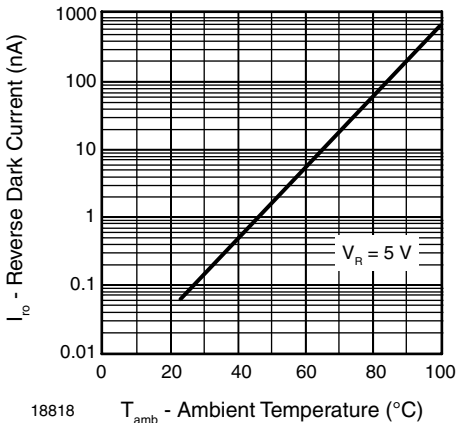


Fig. 1 - Diode Capacitance vs. Reverse Voltage

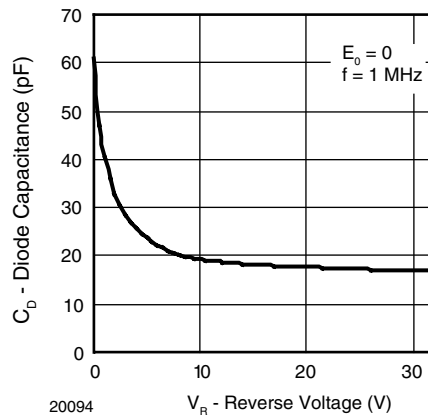


Fig. 3 - Diode Capacitance vs. Reverse Voltage

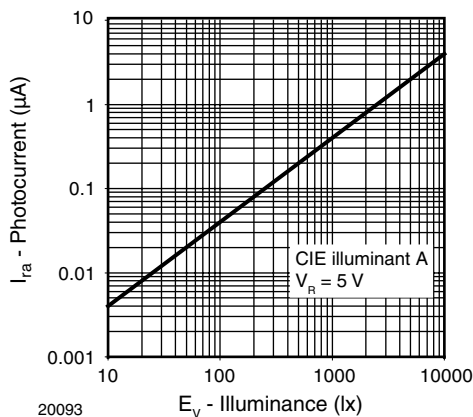


Fig. 2 - Reverse Light Current vs. Illuminance

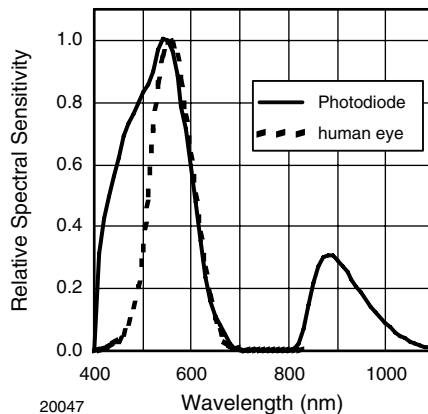


Fig. 4 - Relative Spectral Sensitivity vs. Wavelength

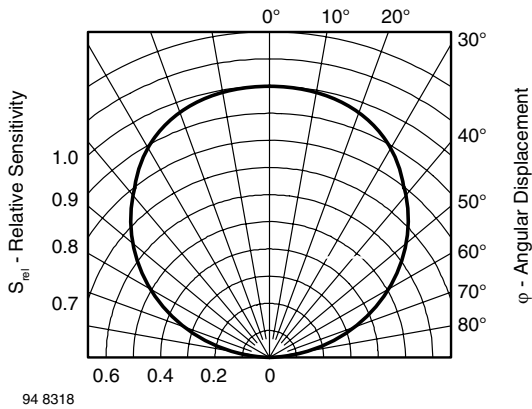


Fig. 5 - Relative Radiant Sensitivity vs. Angular Displacement

SOLDER PROFILE

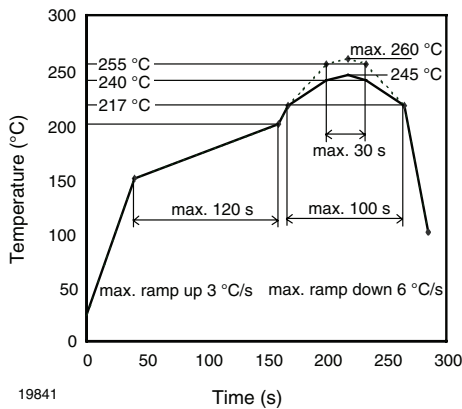


Fig. 6 - Lead (Pb)-free Reflow Solder Profile acc. J-STD-020

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

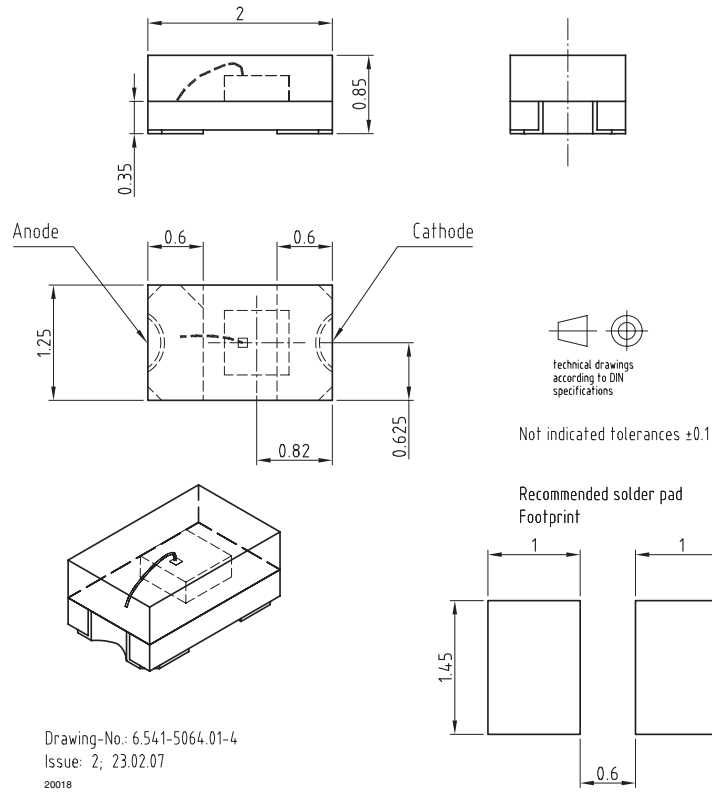
In case of moisture absorption devices should be baked before soldering. Conditions see J-STD-020 or label.

Devices taped on reel dry using recommended conditions: 192 h at $40\text{ }^{\circ}\text{C}$ (+ 5 $^{\circ}\text{C}$), $RH < 5\%$

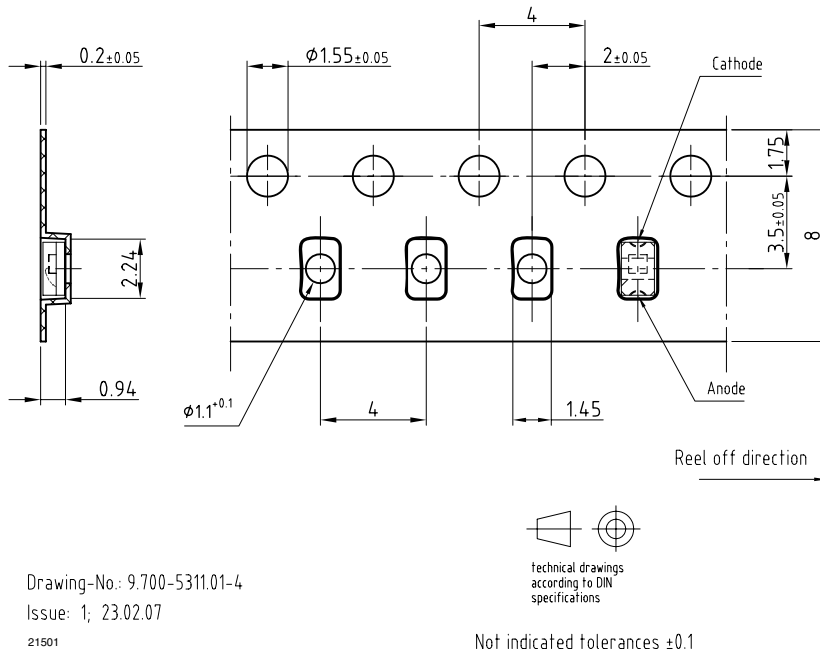
or

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

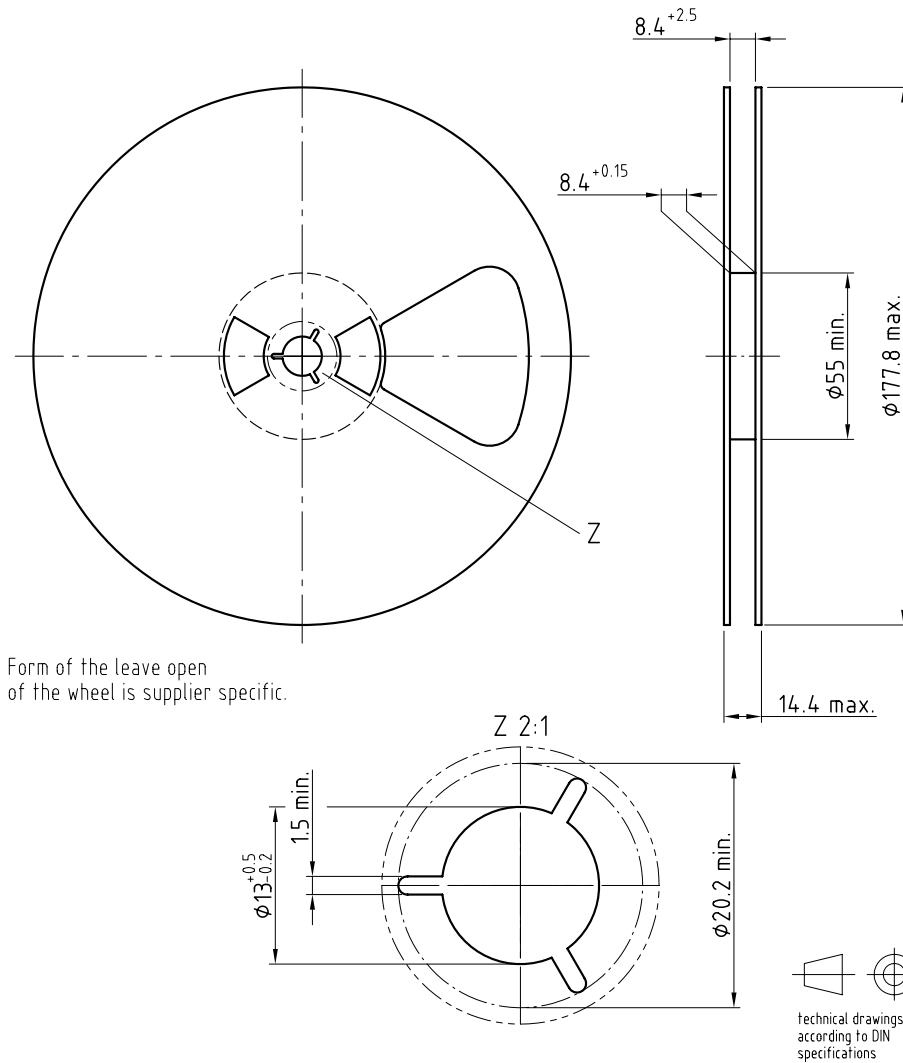
PACKAGE DIMENSIONS in millimeters



BLISTER TAPE DIMENSIONS in millimeters



REEL DIMENSIONS in millimeters



Drawing-No.: 9.800-5096.01-4
Issue: 1; 05.05.08
20875



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