

1206 Reverse Package True Green LED

Features

- Package in 8mm tape on 7" diameter reel
- Compatible with automatic placement equipment
- Compatible with infrared and vapor phase reflow solder process
- Mono-color type
- RoHS



M3216



Descriptions

- The SMD series enable smaller board size, higher packing density, reduced storage space, and finally small equipment to be obtained.
- Besides, light weight makes them ideal for miniature applications, etc.

Applications

- Automotive: backlighting in dashboards and switches.
- Telecommunication: Indicator and backlighting in the telephone and fax.
- Flat backlight for LCD, switch and symbol.
- General use.

Device Selection Guide

Part No.	Chip		Lens Color
	Material	Emitted Color	
TSP3-TF3216-R2T1	InGaN	True Green	Water Clear

Absolute Maximum Ratings (Ta=25°C)

Parameter	Symbol	Rating	Unit
Reverse Voltage	VR	5	V
Forward Current	IF	25	mA
Peak Forward Current (Duty 1/10 @1KHz)	IFP	100	mA
Power Dissipation	Pd	110	mW
Electrostatic Discharge	ESD	150	V
Operating Temperature	Topr	-40 ~ +85	°C
Storage Temperature	Tstg	-40 ~ +90	°C
Soldering Temperature	Tsol	260 ±5	°C

Note 1:

Soldering time ≤ 5 seconds

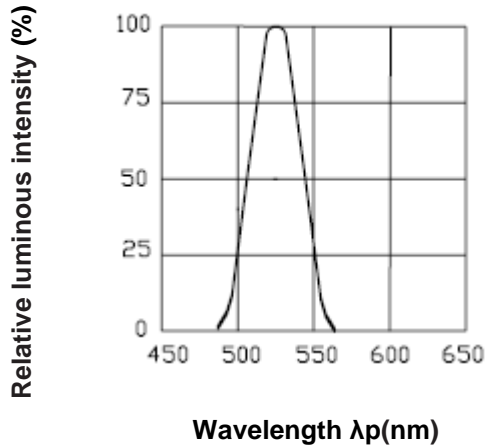
Electro-Optical Characteristics (Ta=25°C)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Condition
Luminous Intensity	I_v	140.0	-----	360.0	mcd	IF=20mA
Viewing Angle	2θ_{1/2}	-----	130	-----	deg	
Peak Wavelength	λ_p	-----	518.0	-----	nm	
Dominant Wavelength	λ_d	520.0	-----	535.0	nm	
Spectrum Radiation Bandwidth	Δλ	-----	25	-----	nm	
Forward Voltage	V_F	-----	3.5	4.0	V	
Reverse Current	I_R	-----	-----	50	uA	VR=5V

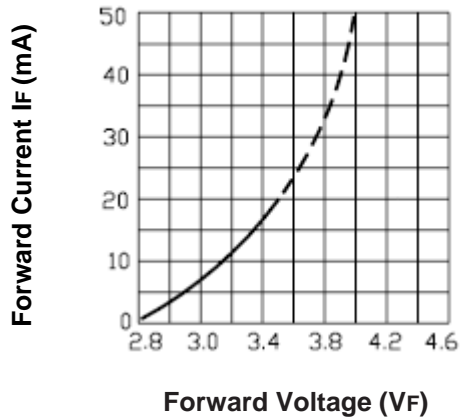
Notes: Tolerance of Luminous Intensity: ±10%
 Tolerance of Dominant wavelength: ±1.0nm
 Tolerance of Forward Voltage: ±0.1V

Typical Electro-Optical Characteristics Curves (Ta=25°C)

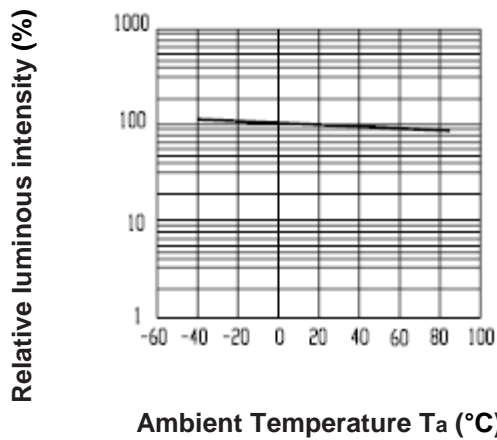
Spectrum Distribution



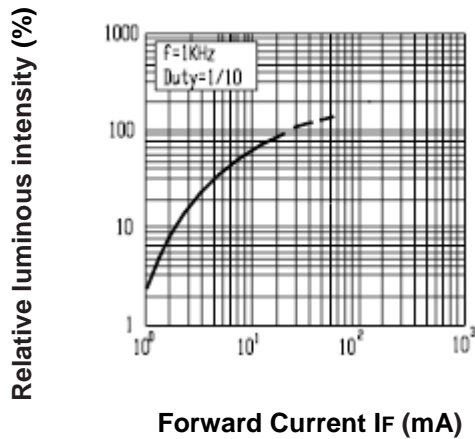
Forward Current vs. Forward Voltage



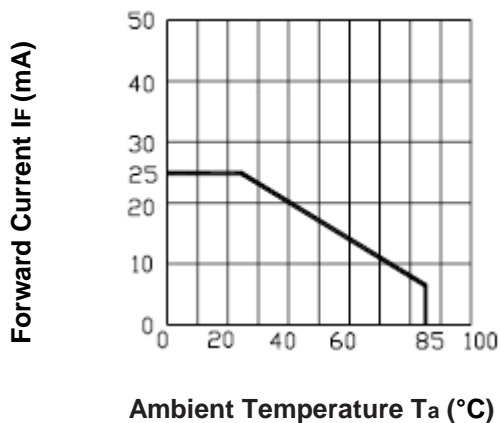
Luminous Intensity vs. Ambient Temperature



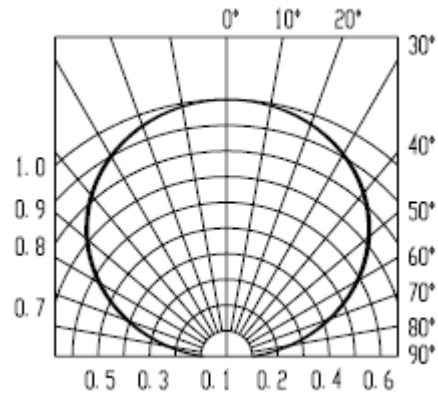
Luminous Intensity vs. Forward Current



Forward Current Derating Curve



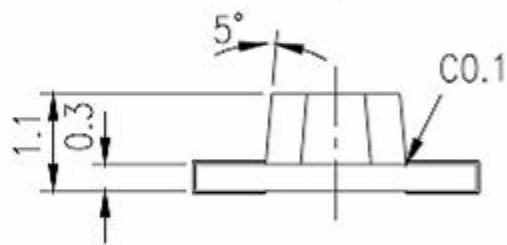
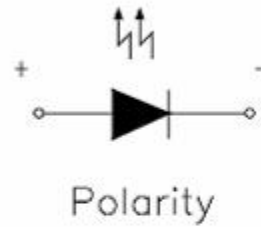
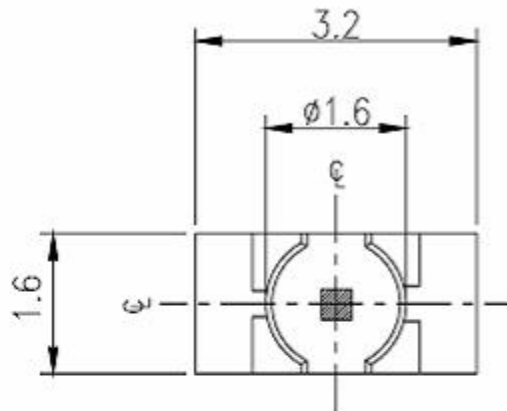
Radiation Diagram



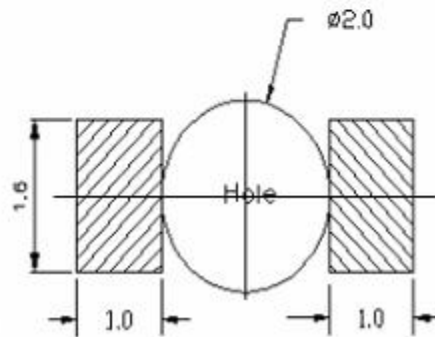
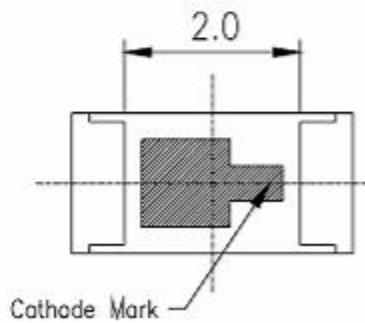
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Package Outline Dimensions (Unit=mm)



For Reflow Soldering (Proposal)

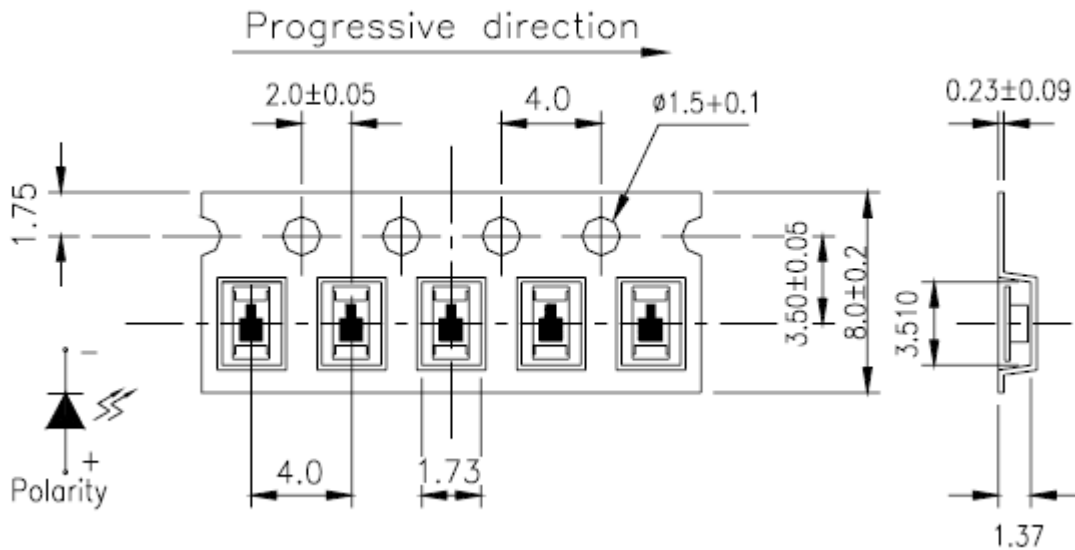


Note: The tolerances unless mentioned is $\pm 0.1\text{mm}$, Angle is $\pm 0.5^\circ$, Unit = mm

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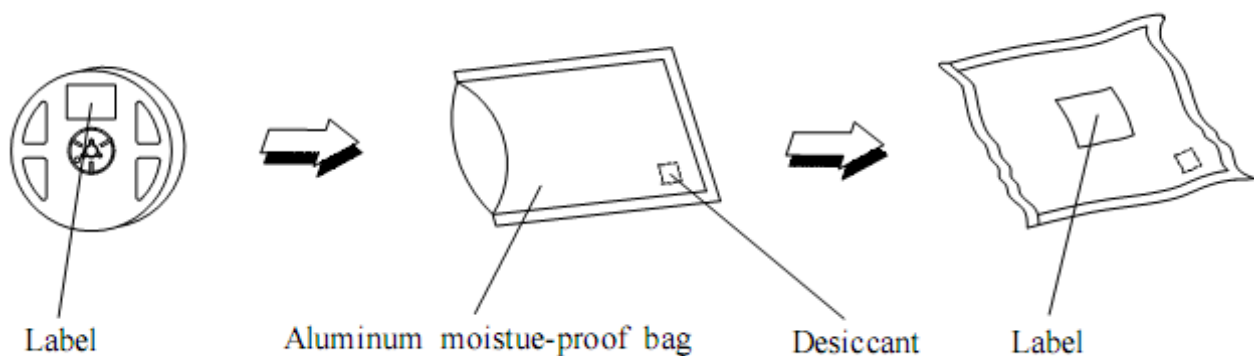
TSP3-TF3216-R2T1

Carrier Tape Dimensions (Unit=mm): Loaded quantity 2000pcs per reel



Note: The tolerances unless mentioned is ± 0.1 mm, Angle is $\pm 0.5^\circ$, Unit = mm

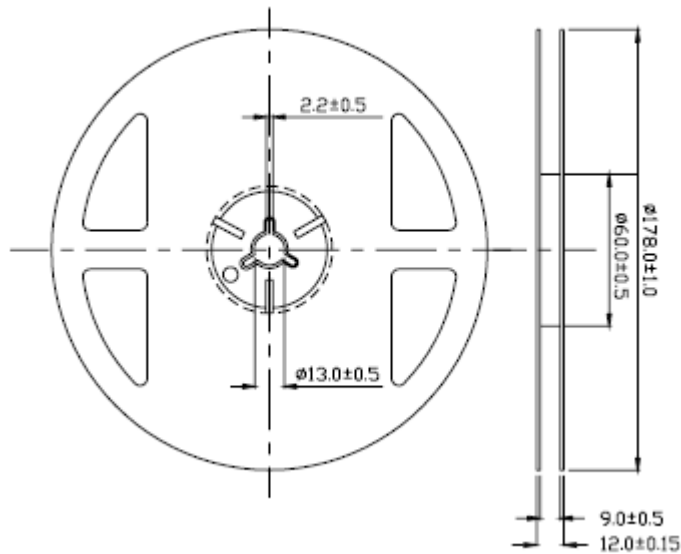
Moisture Resistant Packaging



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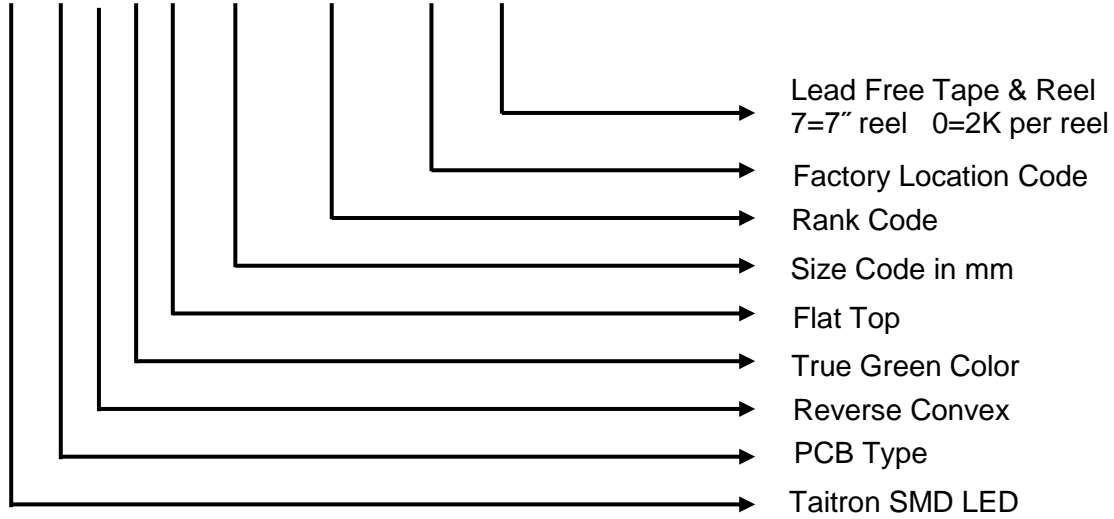
Reel Dimensions (Unit=mm):



Note: The tolerances unless mentioned is ± 0.1 mm.

Ordering Information

T S P 3 - T F 3 2 1 6 - R 2 T 1 - 9 2 - T R 7 0



Label Explanation

- CAT:** Luminous Intensity Rank
- HUE:** Dominant Wavelength Rank
- REF:** Forward Voltage Rank

CPN: XXXXXX
P/N: XXXXXX
XXXXXXXXXXXXXXXXXXXX
QTY: XXXX
LOT NO: XXXXXXXXXXXX

RoHS

CAT:
HUE:
REF:

Rank Combination

Bin Range of Dominant Wavelength

Group	Bin Code	Min	Max	Unit	Condition
Y	X	520.0	525.0	nm	IF=20mA
	Y	525.0	530.0		
	Z	530.0	535.0		

Bin Range of Luminous Intensity

Bin Code	Min	Max	Unit	Condition
R2	140.0	180.0	mcd	IF=20mA
S1	180.0	225.0		
S2	225.0	285.0		
T1	285.0	360.0		

Notes: Tolerance of Luminous Intensity: $\pm 10\%$

Tolerance of Dominant wavelength: $\pm 1.0\text{nm}$

How to contact us

USA HEADQUARTERS

28040 WEST HARRISON PARKWAY, VALENCIA, CA 91355-4162

Tel: (800)-TAITRON (800)-824-8766 (661)-257-6060

Fax: (800)-TAITFAX (800)-824-8329 (661)-257-6415

Email: taitron@taitroncomponents.com

Http://www.taitroncomponents.com

TAITRON COMPONENTS INCORPORATED TAIWAN BRANCH

6F., NO.190, SEC. 2, ZHONGXING RD., XINDIAN DIST., NEW TAIPEI CITY 23146, TAIWAN R.O.C.

Tel: 886-2-2913-6238

Fax: 886-2-2913-6239

TAITRON COMPONENT TECHNOLOG SHANGHAI CORPORATION

SUITE 1503, METROBANK PLAZA, 1160 WEST YAN'AN ROAD, SHANGHAI, 200052, CHINA

Tel: +86-21-5424-9942

Fax: +86-21-2302-5027