White Chip LED with Right Angle

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

M1811

Descriptions

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

Applications

- Automotive: backlighting in dashboard and switch
- Telecommunication: indicator and backlighting in telephone and fax
- Flat backlight for LCD, switches and symbols
- General use

Device Selection Guide

Part No.	Chip		Lens Color
	Material	Emitted Color	
TSPR-WS1811-R2S2	InGaN	White	Yellow Diffused

Absolute Maximum Ratings (Ta=25°C)

Parameter	Symbol	Rating	Unit
Reverse Voltage	**VR**	5	V
Forward Current	**IF**	25	mA
Operating Temperature	**Topr**	-40 ~ +85	℃
Storage Temperature	**Tstg**	-40 ~ +90	℃
Electrostatic Discharge	**ESD**	150	V
Power Dissipation	**Pd**	110	mW
Peak Forward Current (Duty 1/10 @1KHz)	**IFP**	100	mA
Soldering Temperature	**Tsol**	Reflow Soldering: 260 ℃ for 10 sec. Hand Soldering: 350 ℃ for 3 sec.	

Electro-Optical Characteristics (Ta=25°C)

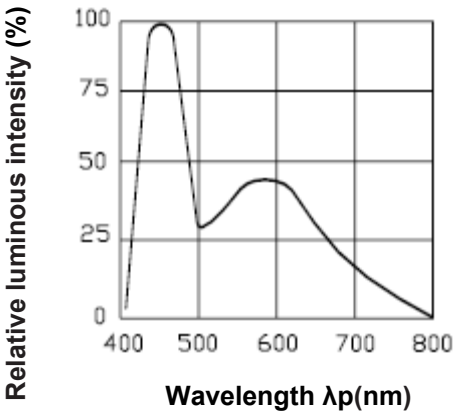
Parameter	Symbol	Min.	Typ.	Max.	Unit	Condition
Luminous Intensity	Iv	140	-----	285	mcd	IF=10mA
Viewing Angle	2θ1/2	-----	140	-----	deg	
Forward Voltage	VF	2.70	-----	3.40	V	
Reverse Current	IR	-----	-----	50	μA	VR=5V

Notes: Tolerance of Luminous Intensity ±10%

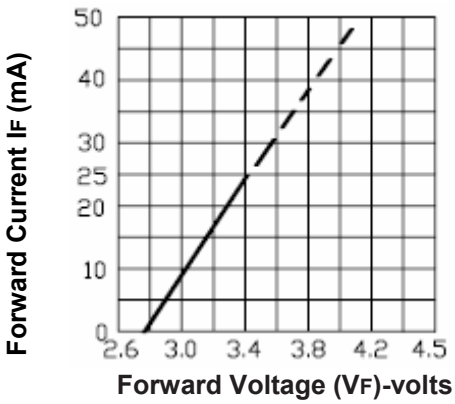
Tolerance of Forward Voltage ±0.05V

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

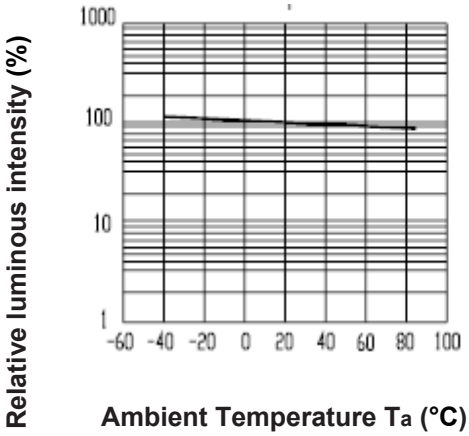
Spectrum Distribution



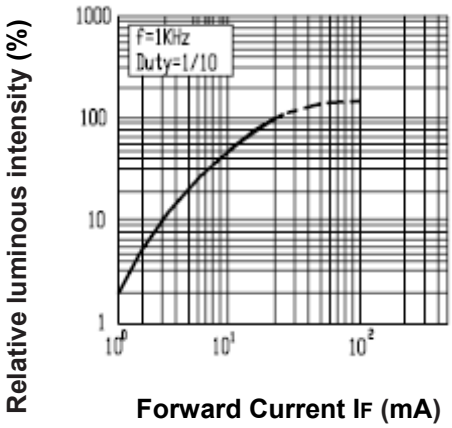
Forward Current vs. Forward Voltage



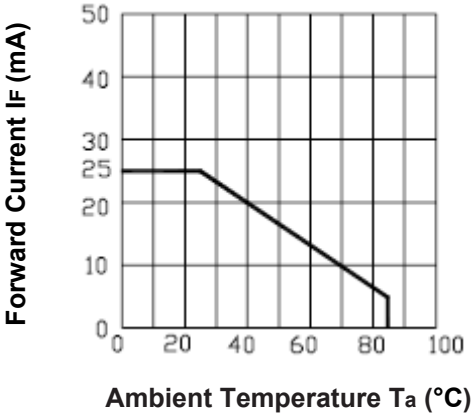
Luminous Intensity vs. Ambient Temperature



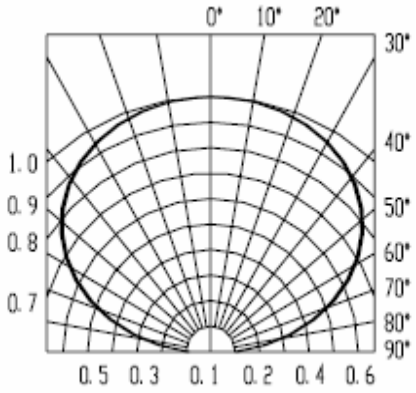
Luminous Intensity vs. Forward Current



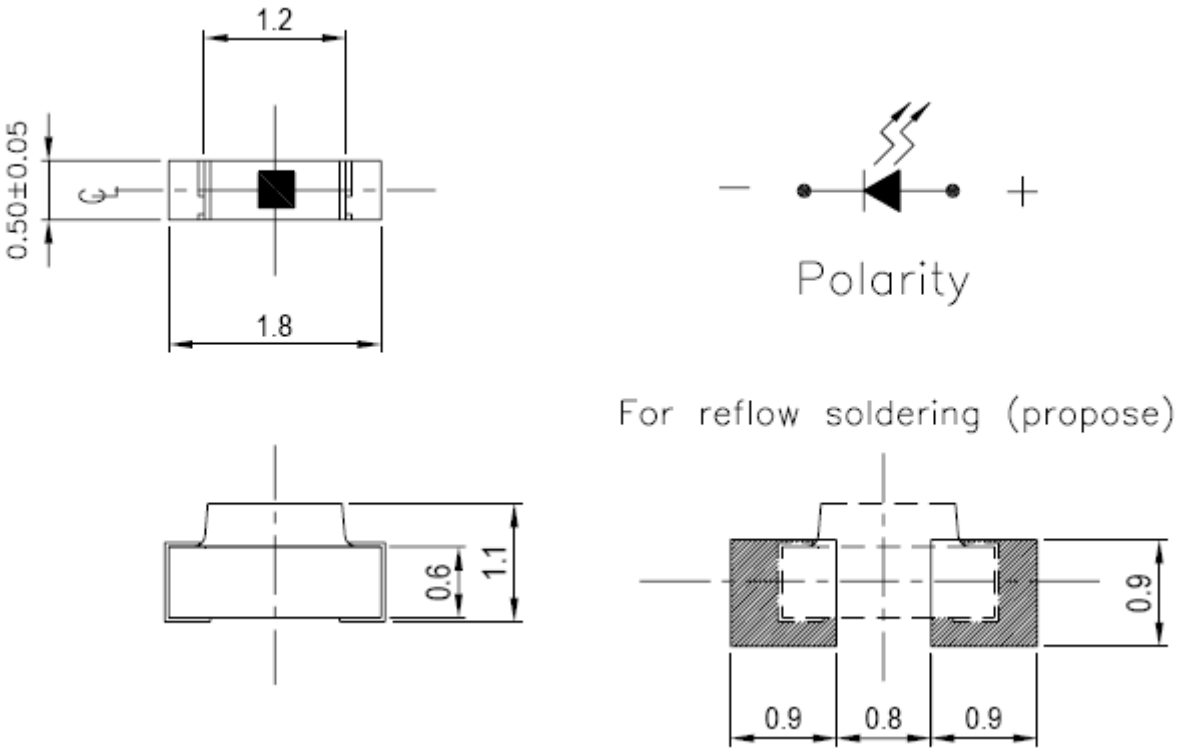
Forward Current Derating Curve



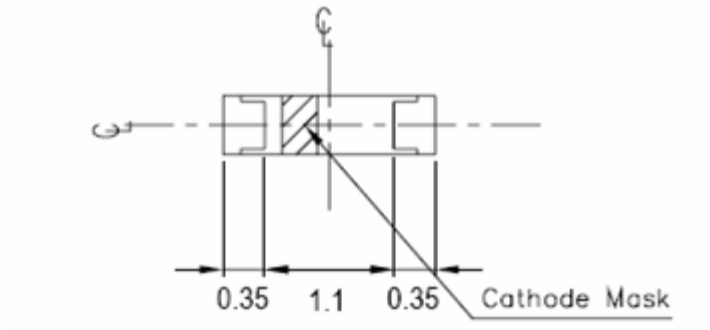
Radiation Diagram



Package Outline Dimensions (Unit=mm)

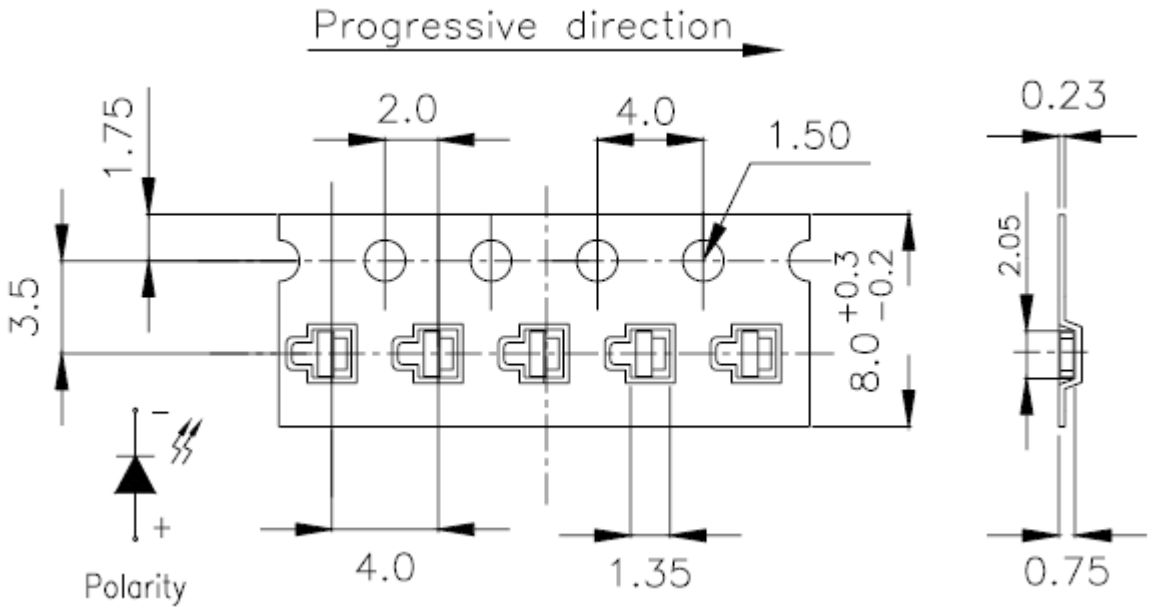


Note: The tolerances unless mentioned is ±0.1mm, Unit = mm



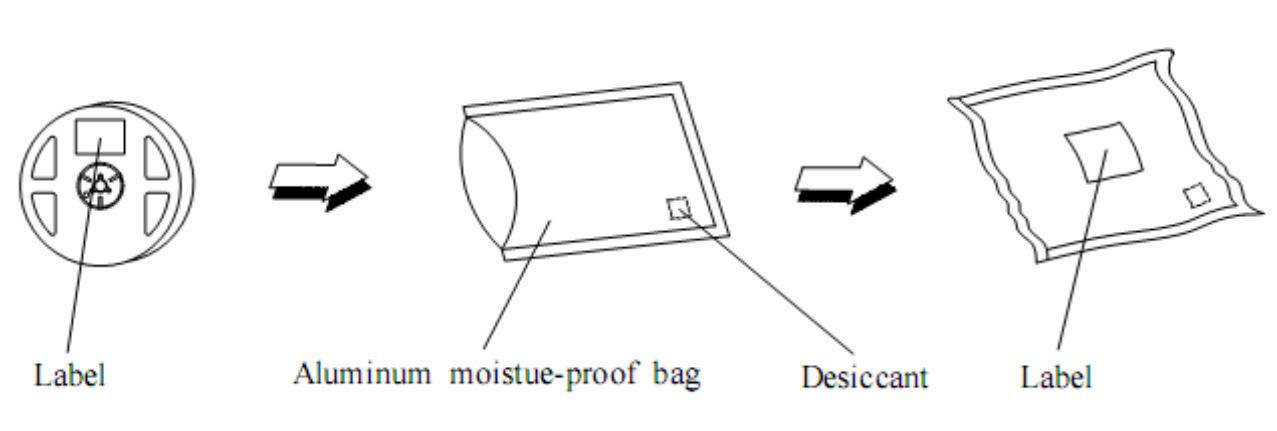
Note: The tolerances unless mentioned is ±0.1mm, Unit = mm

Carrier Tape Dimensions (Unit=mm): Loaded quantity 3000pcs per reel

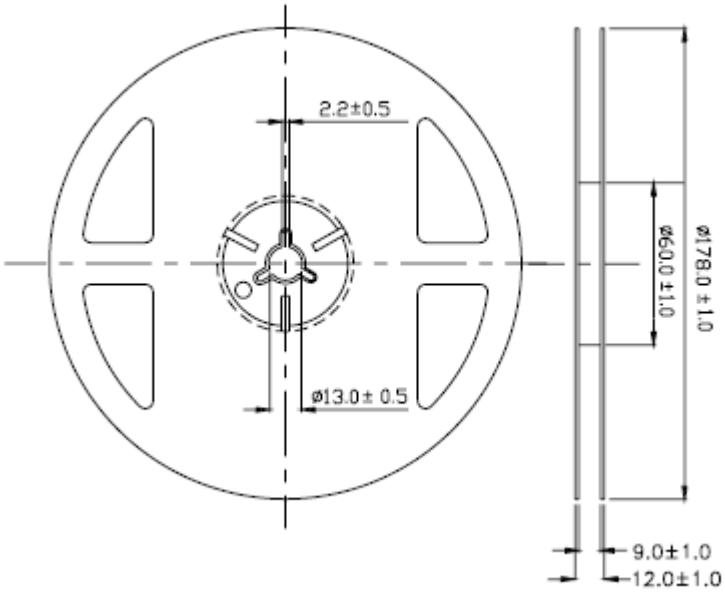


Note: The tolerances unless mentioned is ±0.1mm.

Moisture Resistant Packaging

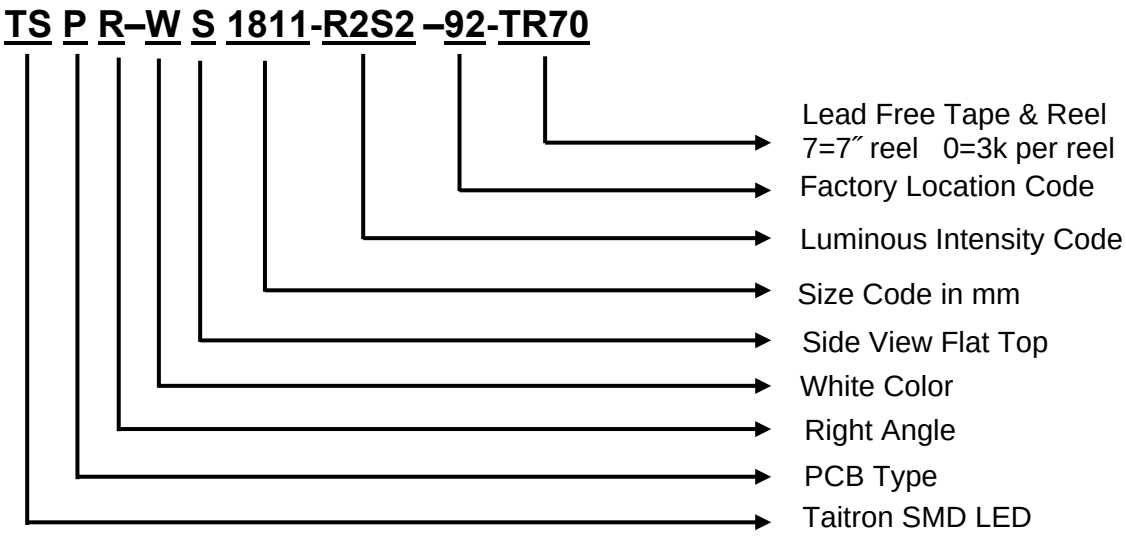


Reel Dimensions (Unit=mm):



Note: The tolerances unless mentioned is ±0.1mm.

Ordering Information

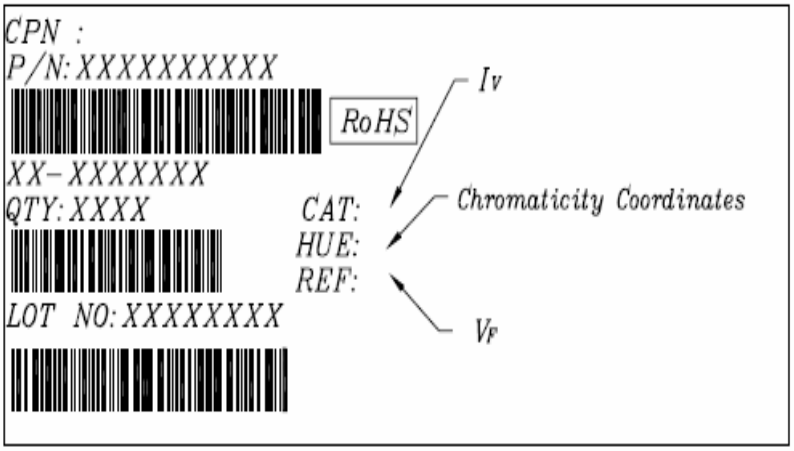


Label Explanation

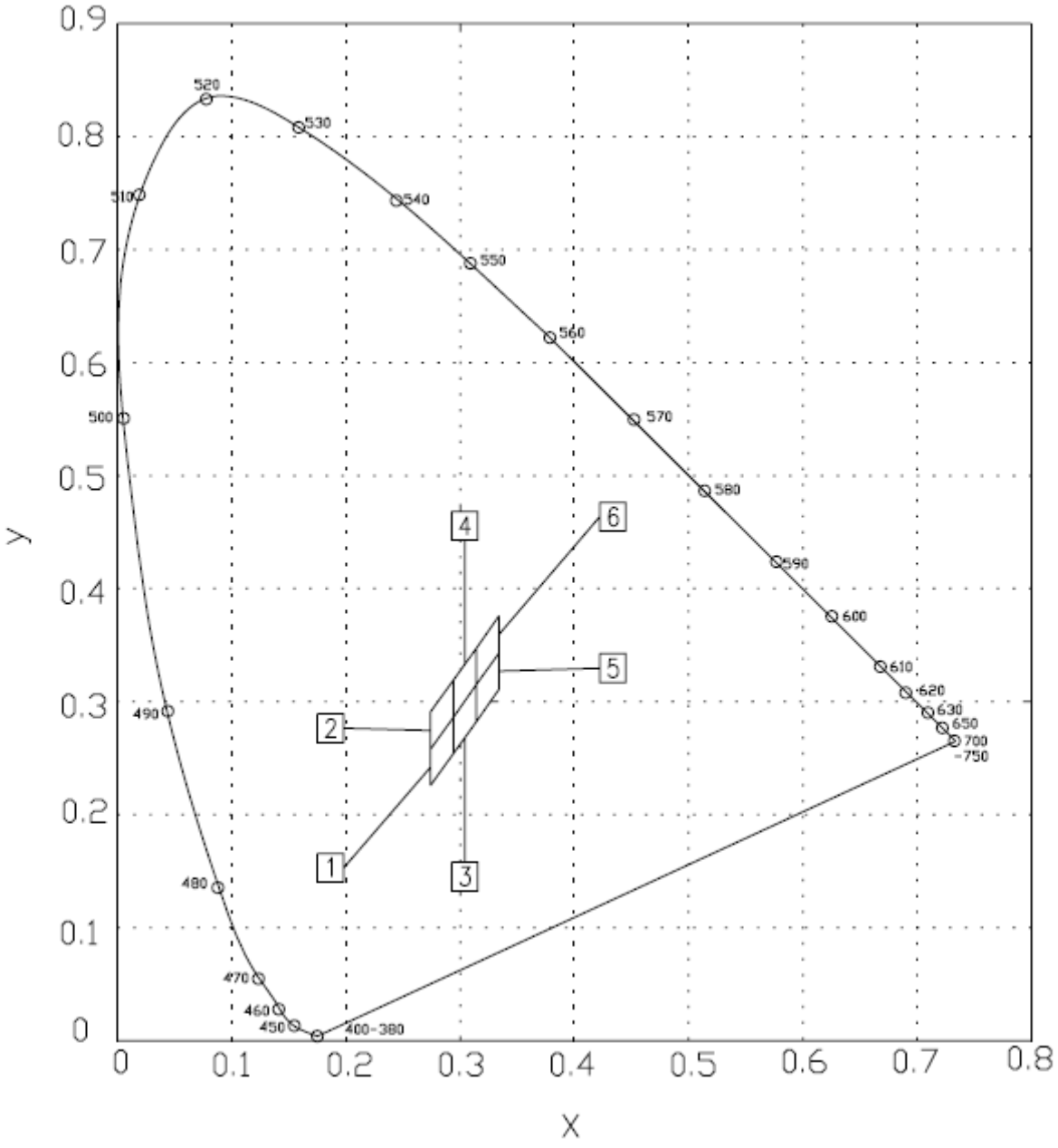
CAT: Luminous Intensity Rank

HUE: Chromaticity Coordinates

REF: Forward Voltage Rank



CIE Chromaticity Diagram



Chromaticity Coordinates Specifications for Bin Grading

Groups	Bin Code	CIE_x	CIE_y	Condition
C	1	0.274	0.226	IF=10mA
		0.274	0.258	
		0.294	0.286	
		0.294	0.254	
	2	0.274	0.258	
		0.274	0.291	
		0.294	0.319	
		0.294	0.286	
	3	0.294	0.254	
		0.294	0.286	
		0.314	0.315	
		0.314	0.282	
	4	0.294	0.286	
		0.294	0.319	
		0.314	0.347	
		0.314	0.315	
	5	0.314	0.282	
		0.314	0.315	
		0.334	0.343	
		0.334	0.311	
	6	0.314	0.315	
		0.314	0.347	
		0.334	0.376	
		0.334	0.343	

Notes: Tolerance of CIE chromaticity diagram: ±0.01

Bin Range of Luminous Intensity

Symbol	Bin Code	Min	Max	Unit	Condition
Iv	R2	140	180	mcd	IF=10mA
	S1	180	225		
	S2	225	285		

Bin Range of Forward Voltage

Groups	Bin Code	Min	Max	Unit	Condition
VF	34	2.70	2.80	V	IF=10mA
	35	2.80	2.90		
	36	2.90	3.00		
	37	3.00	3.10		
	38	3.10	3.20		
	39	3.20	3.30		
	40	3.30	3.40		

Notes: Tolerance of Luminous Intensity ±10%

Tolerance of Forward Voltage ±0.05V

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