1 W High Power LED

Features

M4530

- Small package with high efficiency
- ESD protection up to 8000V
- Soldering methods: SMT
- Moisture sensitivity level: 1
- Reliability testing conforms to IESNA LM80 Lumen maintenance test method
- Binning parameters: Brightness, forward voltage, wavelength and chromaticity
- RoHS Compliance

Applications

- General lighting
- Decorative and entertainment lighting
- Signal and symbol
- Exterior and interior automotive illumination

Materials

Part No.	Chip	
	Material	Emitted Color
TPCB-WR4530LS-H11Z	InGaN	Cool White

Absolute Maximum Ratings (Ta=25°C)

Parameter	Symbol	Value	Unit
DC Forward Current	I_F	400	mA
DC Pulse Current	I_{Pulse}	1000	mA
Power Dissipation	P_d	1	W
ESD Sensitivity	ESD	8000	V
Junction Temperature	T_j	125	°C
Operating Temperature	T_{opr}	-40 ~ +100	°C
Storage Temperature	T_{stg}	-40 ~ +100	°C
Soldering Temperature	T_{sol}	260	°C
Thermal Resistance	R_{th}	10	°C/W
Allowable Reflow Cycle	n/a	2	Cycles

Notes:

1. This series LED is not designed for reverse bias used.
2. Avoid operating LED at maximum operating exceed 1 hour.

Electro-Optical Characteristics (Ta=25°C)

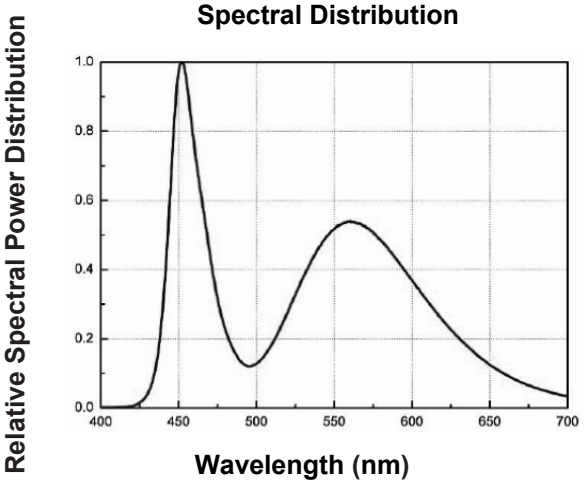
Parameter	Symbol	Min.	Typ.	Max.	Unit	Condition
Brightness (Note 1)	Φ_V	80	90	-----	lm	I_F =350mA
Forward Voltage (Note 2)	V_F	2.95	-----	3.85	V	
Color Temperature	CCT	-----	5700	-----	K	

Notes:

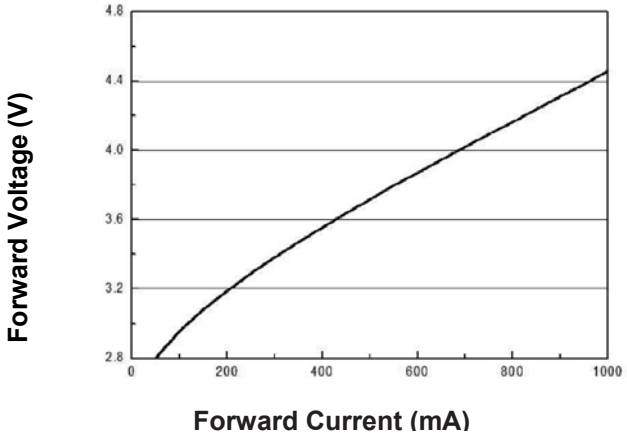
1. Luminous flux measurement tolerance: ±10%.
2. Forward Voltage measurement tolerance: ±0.1V.

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

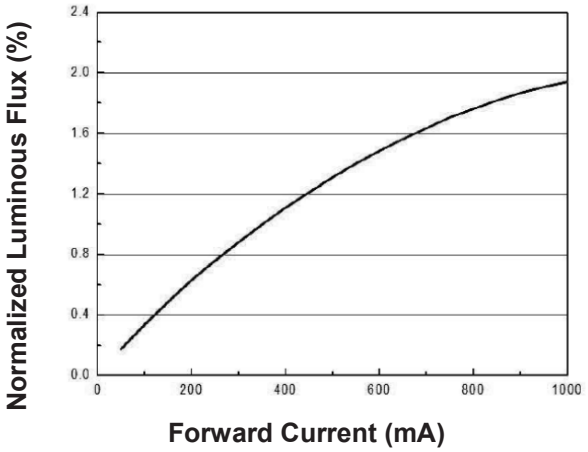
Spectral Distribution



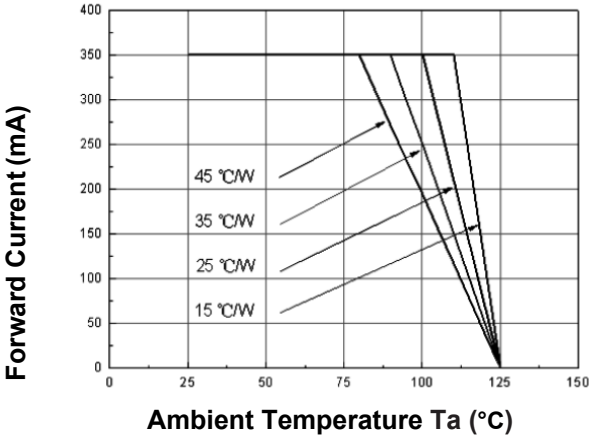
Forward Voltage vs. Forward Current



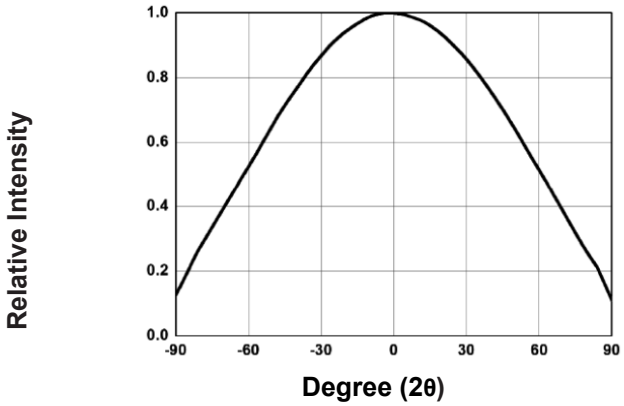
Luminous Flux vs. Forward Current



Current Derating Curve for 350 mA

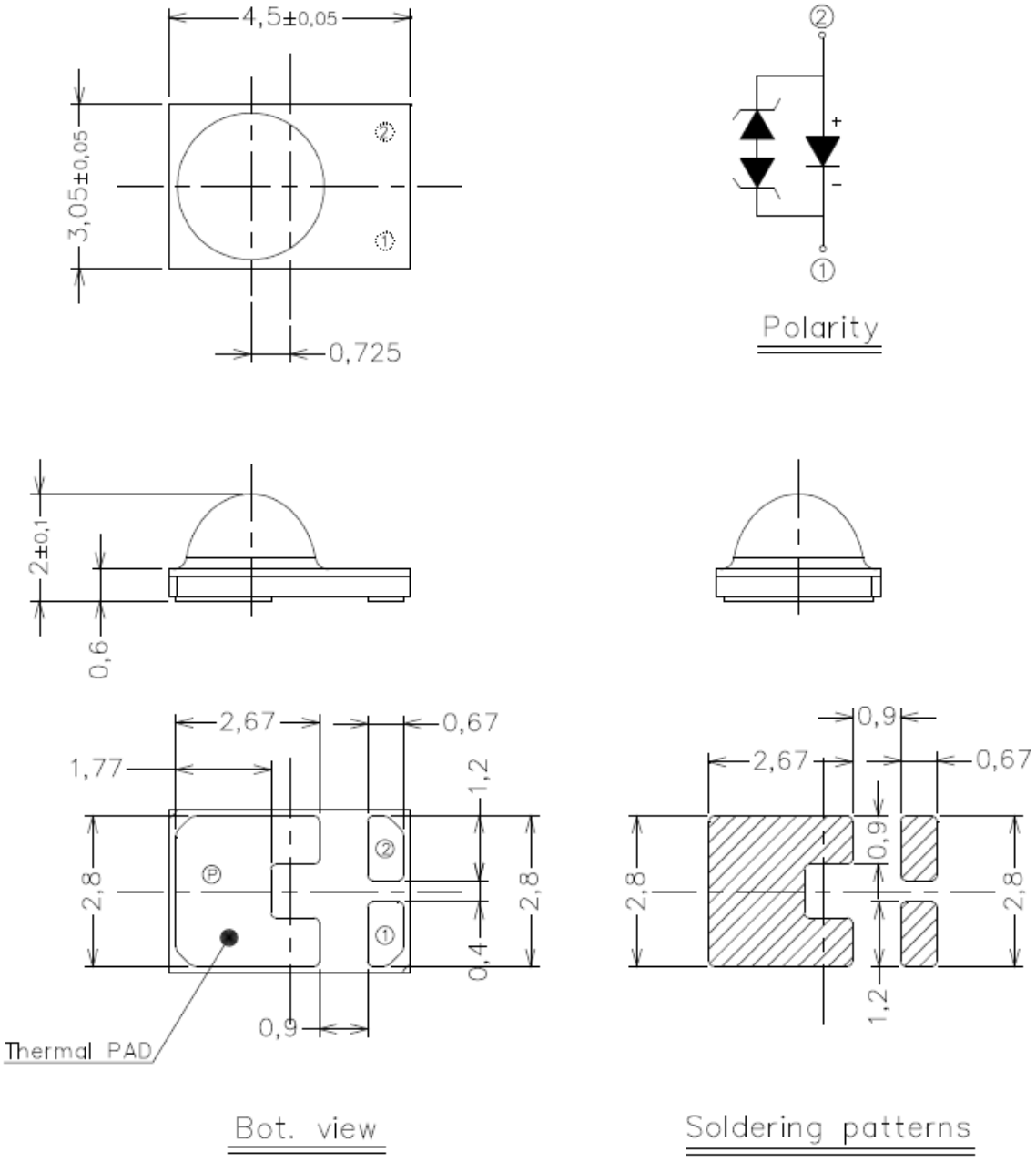


Typical Representative Spatial Radiation Pattern



Note: 2θ1/2 is the off axis angle from lamp centerline where the luminous intensity is 1/2 of the peak value, the tolerance is ±5°

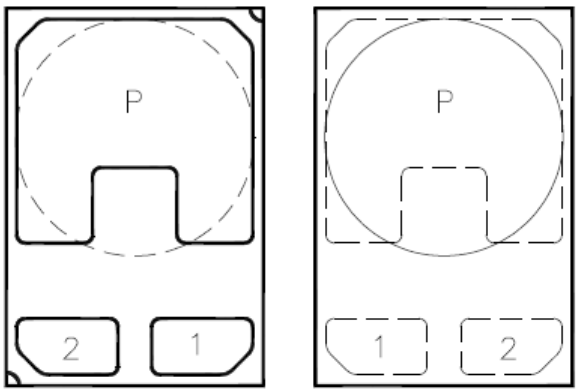
Package Outline Dimensions (Unit=mm)



Note: 1. The tolerances unless mentioned is ±0.1mm, Unit = mm.

2. Do not handle the device by the lens. Incorrect force applied to the lens may lead to failure of devices.

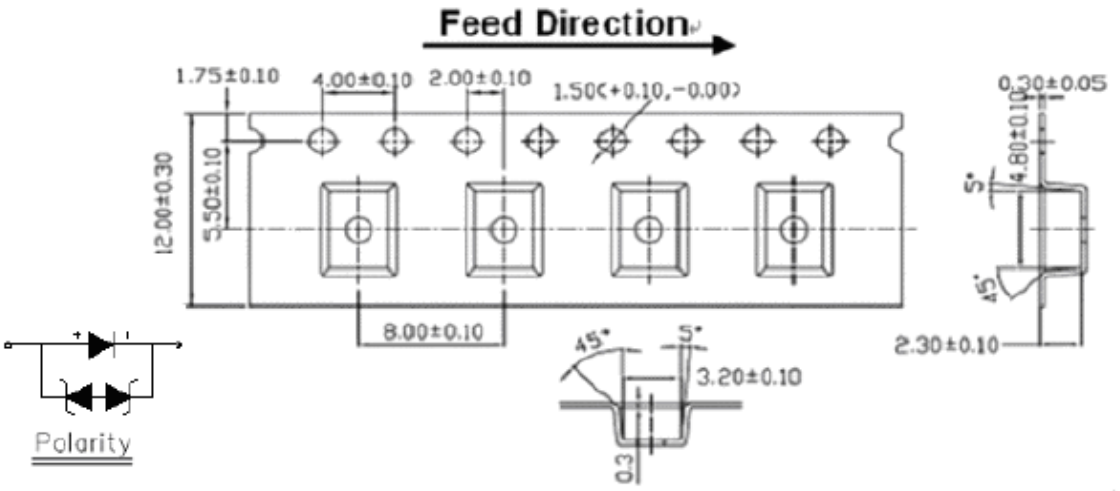
Pad Configuration



BOTTOM VIEW TOP VIEW

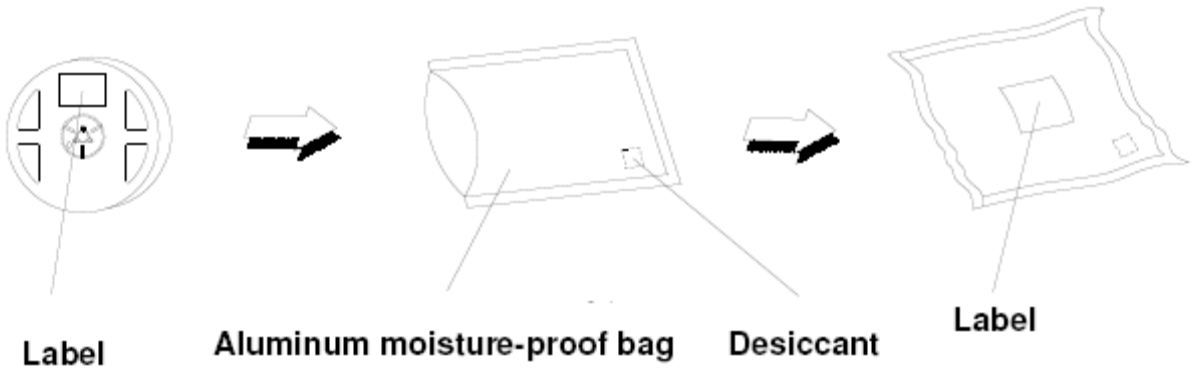
PAD	FUNCTION
1	ANODE
2	CATHODE
P	THERMAL PAD

Carrier Tape Dimensions (Unit=mm): Loaded quantity 400pcs per reel

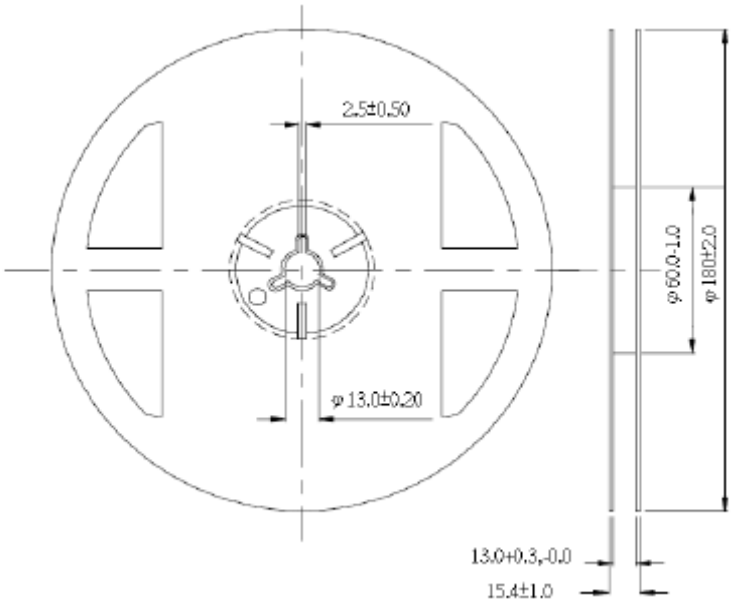


Note: The tolerances unless mentioned is ±0.1mm.

Moisture Resistant Packaging

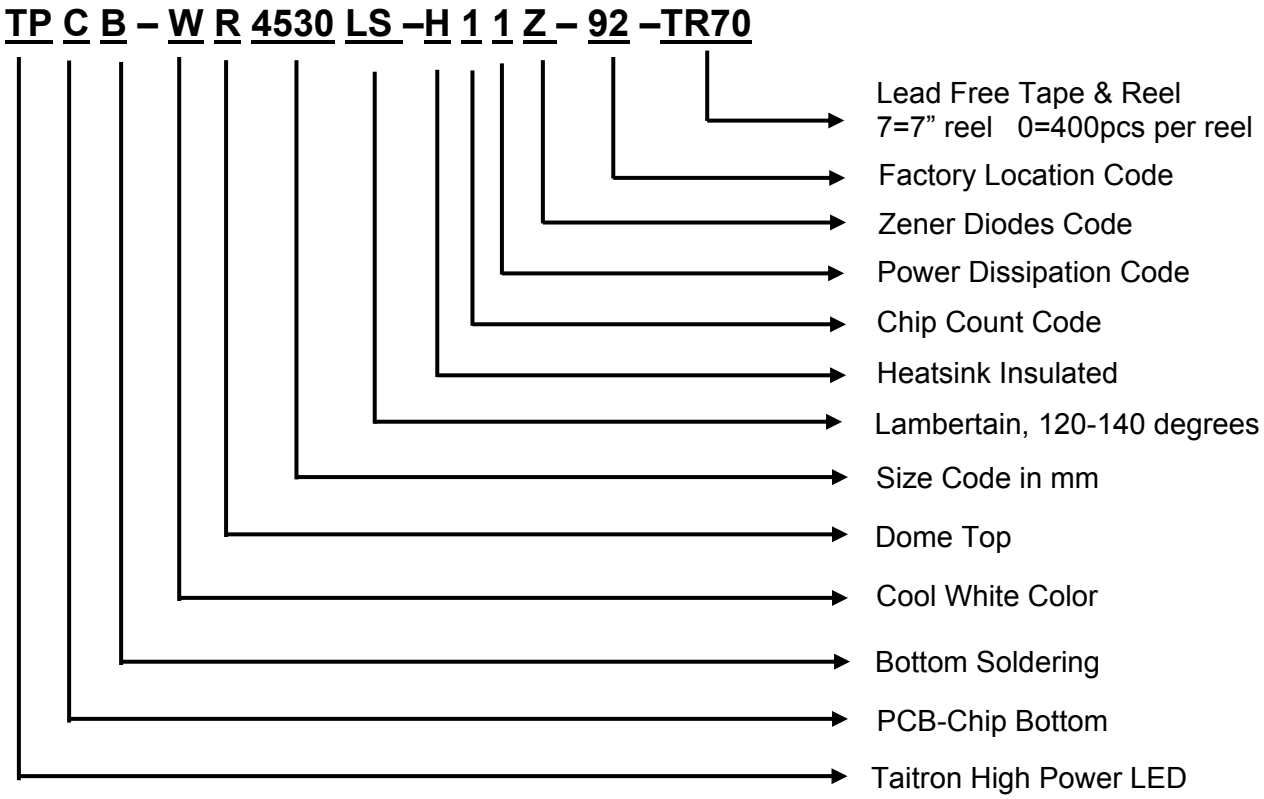


Reel Dimensions (Unit=mm):



Note: 1. The tolerances unless mentioned is ±0.1mm, Unit = mm.

Ordering Information

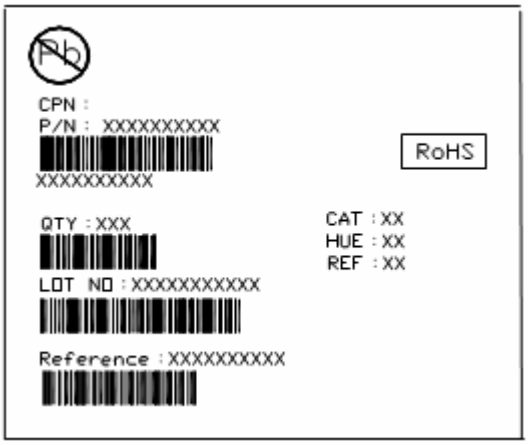


Label Explanation

CAT: Luminous Flux Rank

HUE: Color Bin Rank

REF: Forward Voltage Rank



Rank Combinations

Cool White Bin Coordinates

5700K

Bin	CIE X	CIE Y
57K-1	0.329	0.354
	0.329	0.342
	0.337	0.349
	0.338	0.362
Reference Range: 5310~5700K		

Bin	CIE X	CIE Y
57K-2	0.321	0.346
	0.321	0.335
	0.329	0.342
	0.329	0.354
Reference Range: 5700~6020K		

Bin	CIE X	CIE Y
57K-4	0.329	0.342
	0.329	0.331
	0.337	0.337
	0.337	0.349
Reference Range: 5310~5700K		

Bin	CIE X	CIE Y
57K-3	0.321	0.335
	0.322	0.324
	0.329	0.331
	0.329	0.342
Reference Range: 5700~6020K		

6500K

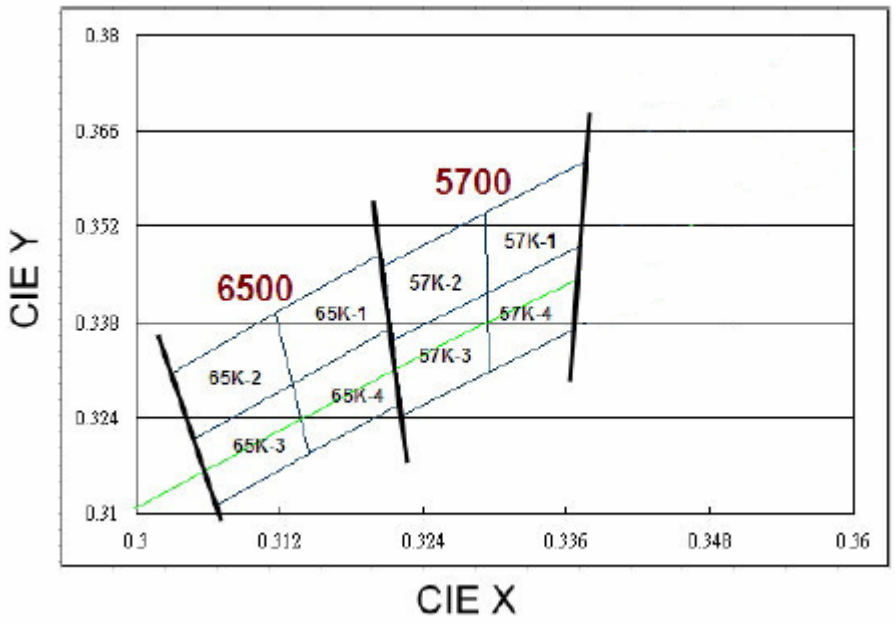
Bin	CIE X	CIE Y
65K-1	0.312	0.339
	0.313	0.329
	0.321	0.337
	0.321	0.348
Reference Range: 6020~6500K		

Bin	CIE X	CIE Y
65K-2	0.303	0.330
	0.305	0.321
	0.313	0.329
	0.312	0.339
Reference Range: 6500~7050K		

Bin	CIE X	CIE Y
65K-4	0.313	0.329
	0.314	0.319
	0.322	0.326
	0.321	0.337
Reference Range: 6020~6500K		

Bin	CIE X	CIE Y
65K-3	0.305	0.321
	0.307	0.311
	0.314	0.319
	0.313	0.329
Reference Range: 6500~7050K		

Cool White Bin Structure



Note: 1. Color coordinates measurement allowance: ±0.01
2. Color bins are defined at IF =350mA.

Forward Voltage Bins

Group	Bin Code	Min.	Max.	Unit	Condition
C	V1	2.95	3.25	V	IF=350mA
	V2	3.25	3.55		
	V3	3.55	3.85		

Note: 1. Forward Voltage measurement tolerance: ±0.1V.
2. Forward Voltage bins are defined at IF =350mA.

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