

1 W High Power LED

Features

- 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



M4530



Applications

- General lighting
- Decorative and entertainment lighting
- Signal and symbol Luminaries for orientation marker lights (e.g. steps, exit ways, etc.)
- Exterior and interior automotive illumination
- Agriculture Lighting

Materials

Part No.	Chip	
	Material	Emitted Color
TPCB-MR4530LS-H11Z-3500	InGaN	Warm White

Absolute Maximum Ratings ($T_a=25^{\circ}\text{C}$)

Parameter	Symbol	Value	Unit
Max. DC Forward Current	IF	600	mA
Max. DC Pulse Current (Duty cycle 1/10@1KHz)	IPulse	1000	mA
Power Dissipation	Pd	1	W
Max. ESD Resistance	VB	8000	V
Max. Junction Temperature	Tj	125	$^{\circ}\text{C}$
Operating Temperature	Topr	-40 ~ +100	$^{\circ}\text{C}$
Storage Temperature	Tstg	-40 ~ +100	$^{\circ}\text{C}$
Soldering Temperature	Tsol	260	$^{\circ}\text{C}$
Thermal Resistance	Rth	10	$^{\circ}\text{C/W}$
Allowable Reflow Cycle	n/a	2	Cycles

Notes:

1. This series LED is not designed for reverse bias used.

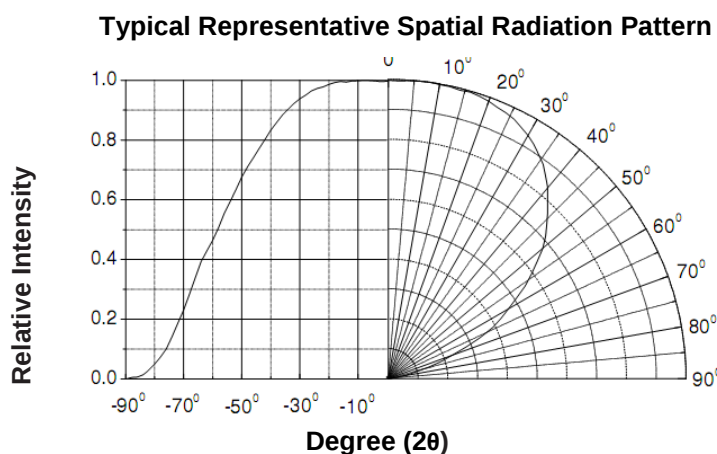
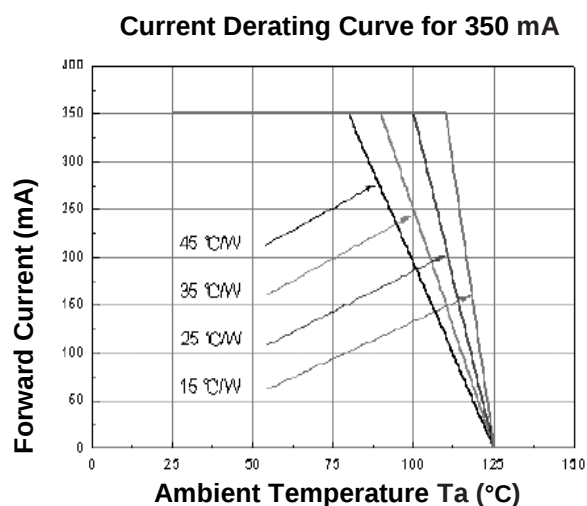
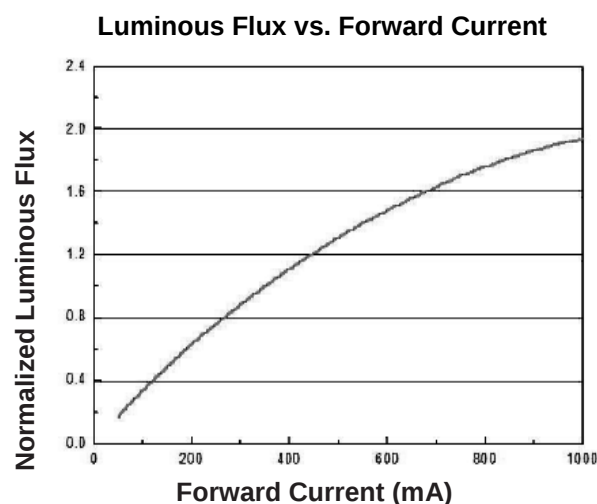
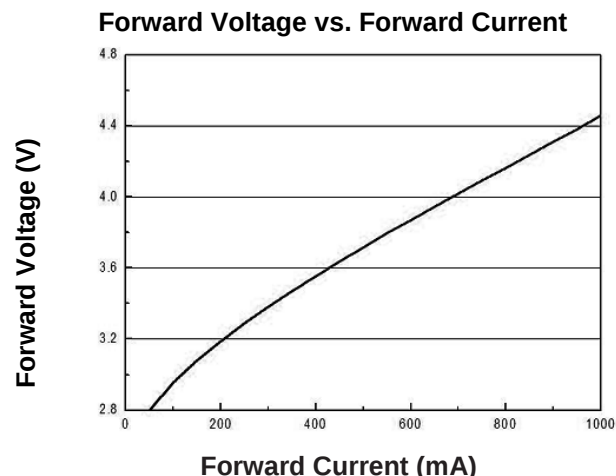
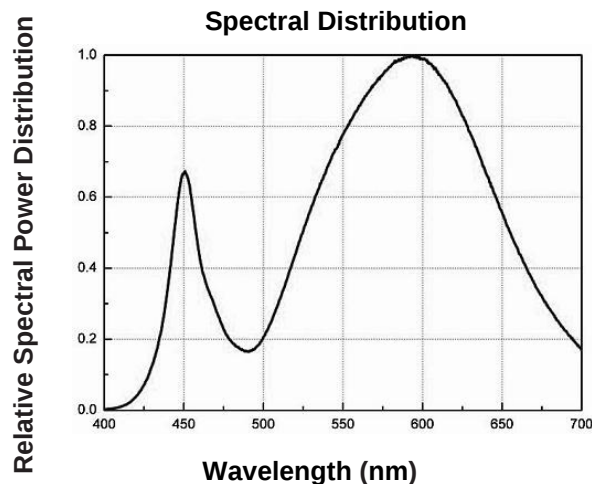
Electro-Optical Characteristics ($T_a=25^{\circ}\text{C}$)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Condition
Brightness (Note 1)	Φ_v	70	-----	-----	lm	IF =350mA
Forward Voltage (Note 2)	VF	2.95	-----	3.85	V	
Color Temperature	CCT	-----	3500	-----	K	
Color Rendering Index (Note 3)	CRI	75	-----	-----	-----	

Notes:

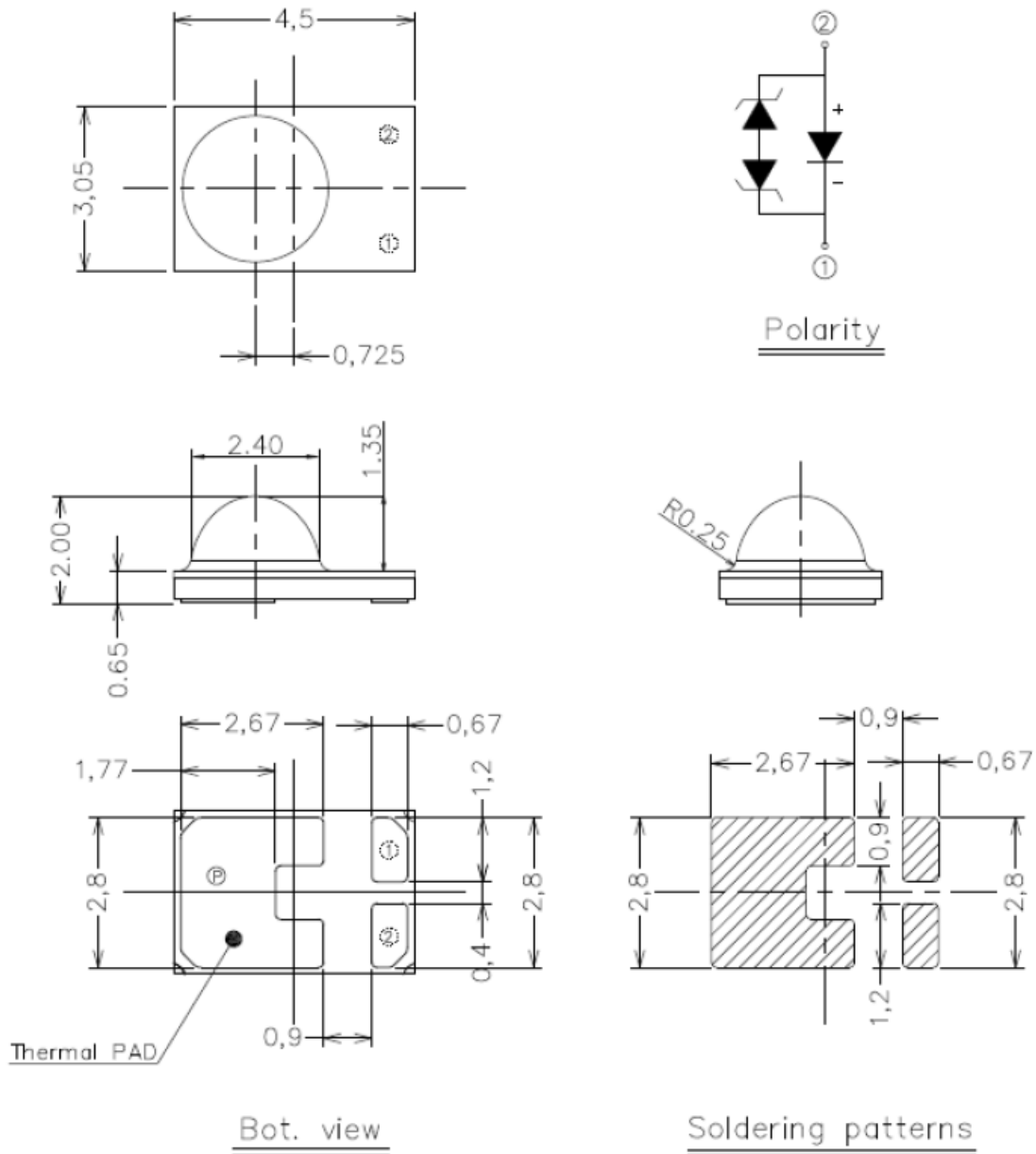
1. Luminous flux measurement tolerance: $\pm 10\%$.
2. Forward Voltage measurement tolerance: $\pm 0.1\text{V}$.
3. Color Rendering Index measurement tolerance: ± 2

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



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°

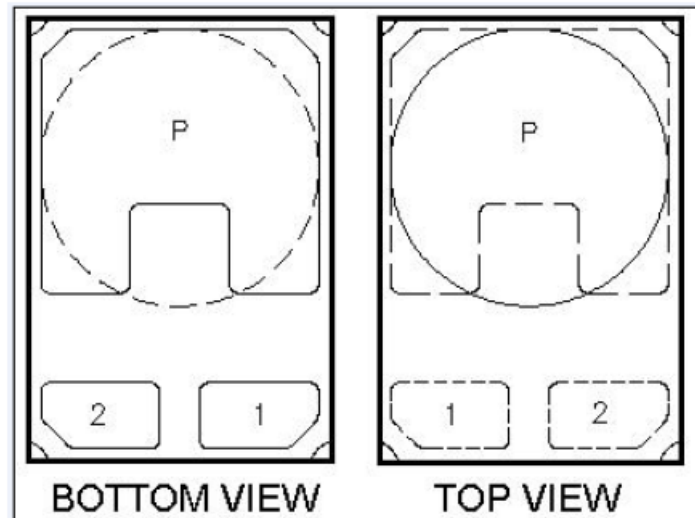
Package Outline Dimensions (Unit=mm)



Note: 1. The tolerances unless mentioned is ± 0.15 mm, Unit = mm.

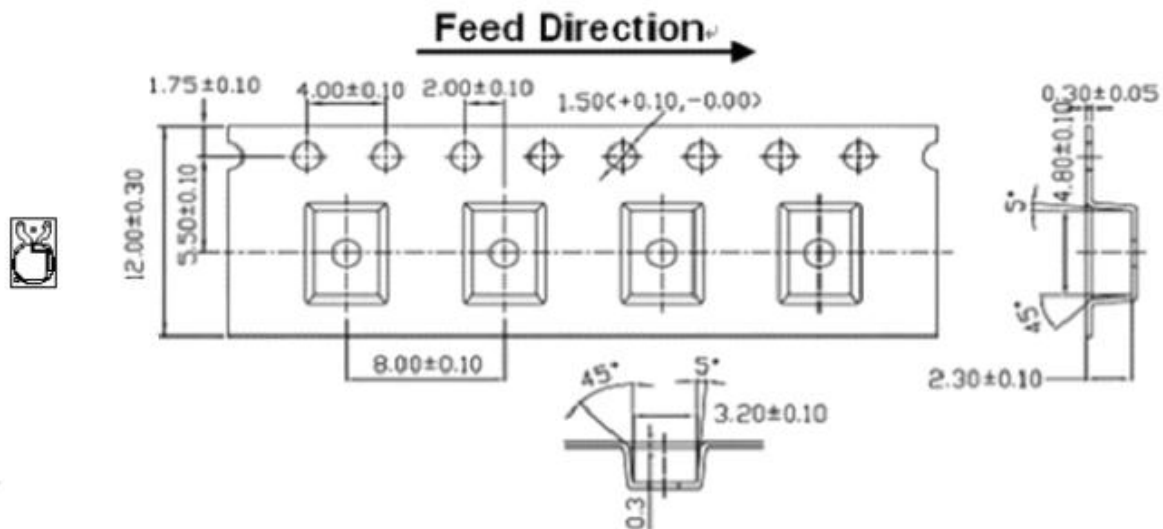
2. Do not handle the device by the lens. Incorrect force applied to the lens may lead to failure of devices.
3. Thermal pad is electrically isolated from the Anode and Cathode contact pads.

Pad Configuration



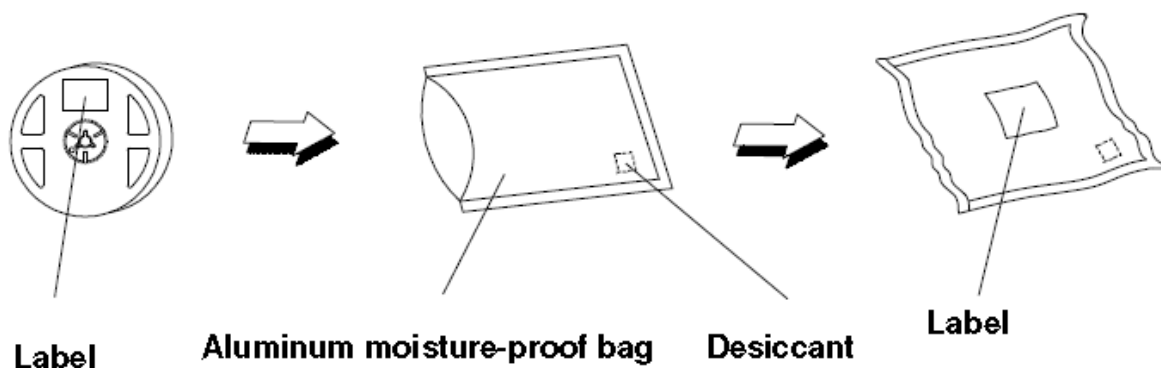
PAD	FUNCTION
1	CATHODE
2	ANODE
P	THERMAL PAD

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

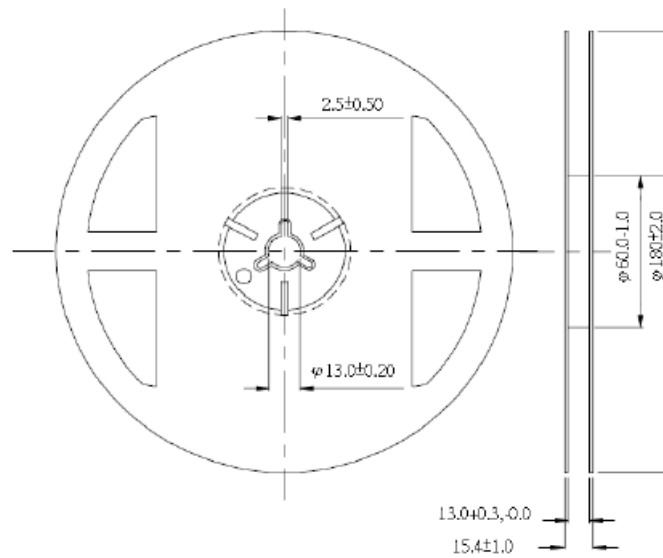


Note: The tolerances unless mentioned is $\pm 0.1\text{mm}$.

Moisture Resistant Packaging



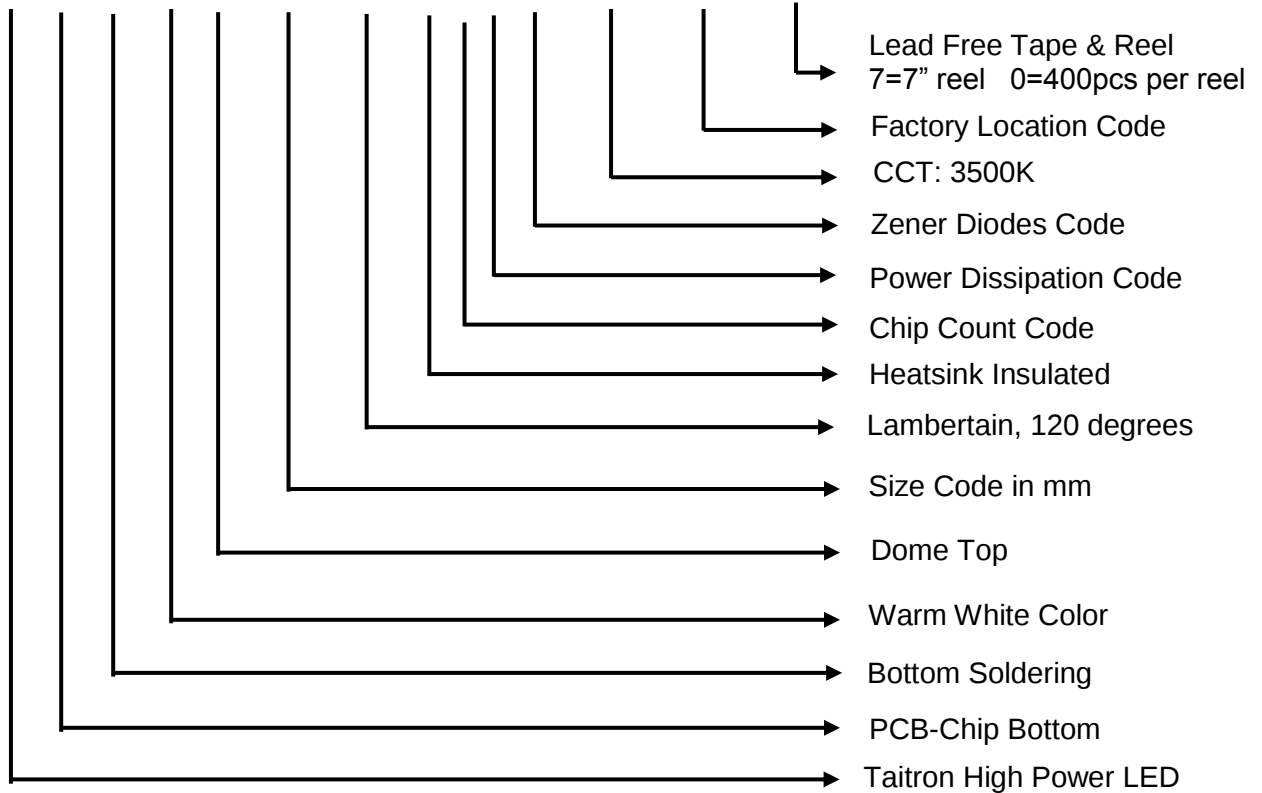
Reel Dimensions (Unit=mm):



Note: 1. The tolerances unless mentioned is $\pm 0.1\text{mm}$, Unit = mm.

Ordering Information

TP C B - M R 4530 LS -H 1 1 Z - 3500- 92 -TR70

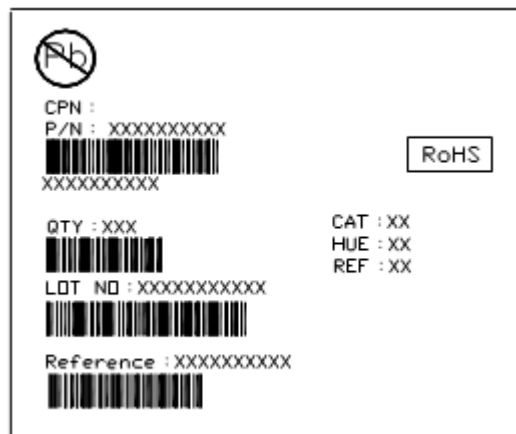


Label Explanation

CAT: Luminous Flux Rank

HUE: Color Bin Rank

REF: Forward Voltage Rank



Rank Combinations

Warm White Bin Coordinates

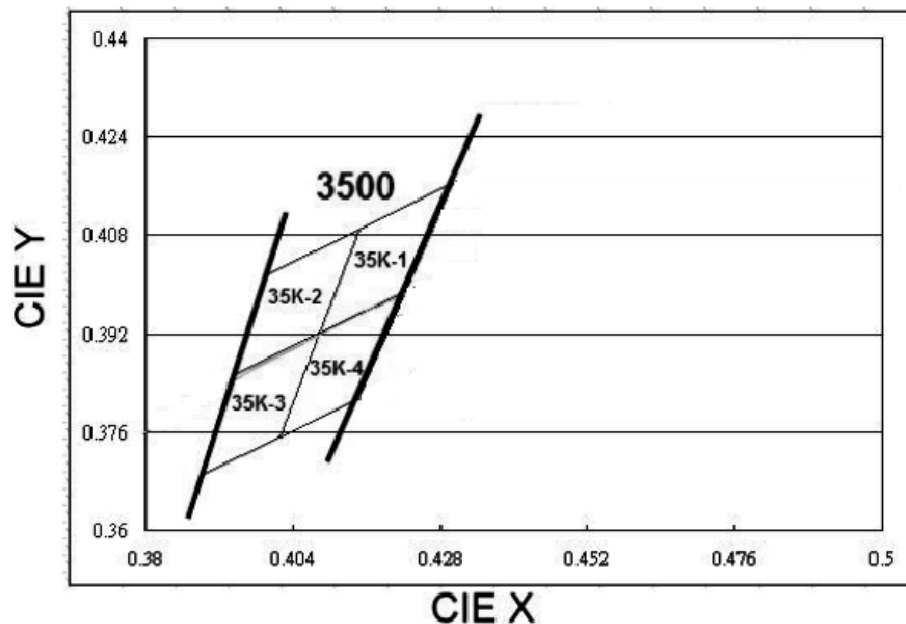
Bin	CIE X	CIE Y
35K-1	0.415	0.409
	0.408	0.392
	0.422	0.399
	0.430	0.417
Reference Range: 3220~3500K		

Bin	CIE X	CIE Y
35K-2	0.400	0.402
	0.394	0.385
	0.408	0.392
	0.415	0.409
Reference Range: 3500~3710K		

Bin	CIE X	CIE Y
35K-4	0.408	0.392
	0.402	0.375
	0.415	0.381
	0.422	0.399
Reference Range: 3220~3500K		

Bin	CIE X	CIE Y
35K-3	0.394	0.385
	0.389	0.369
	0.402	0.375
	0.408	0.392
Reference Range: 3500~3710K		

Warm 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: $\pm 0.1V$.
2. Forward Voltage bins are defined at $I_F = 350mA$.

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