

ASMT-UWB1-NX3F2

OneWhite Surface Mount PLCC-2 LED Indicator

Preliminary Data Sheet



Description

This family of SMT LEDs is packaged in the industry standard PLCC-2 package. These SMT LEDs have high reliability performance and are designed to work under a wide range of environmental conditions. This high reliability feature makes them ideally suited to be used as interior signs application conditions.

To facilitate easy pick & place assembly, the LEDs are packed in EIA-compliant tape and reel. Every reel will be shipped in single intensity and color bin.

These LEDs are compatible with reflow soldering process.

The wide viewing angle at 120° makes these LEDs ideally suited for panel, push button, office equipment, industrial equipment, and home appliances. The flat top emitting surface makes it easy for these LEDs to mate with light pipes. With the built-in reflector pushing up the intensity of the light output, these LEDs are also suitable to be used as LED pixels in interior electronic signs.

Features

- High reliability package with silicone encapsulation
- Compatible with reflow soldering process
- High optical efficiency with 100lm/W
- Available in 8mm carrier tape with reel diameter 180mm
- JEDEC MSL 3 product
- ESD threshold of 1000V (HBM model) per Jedec

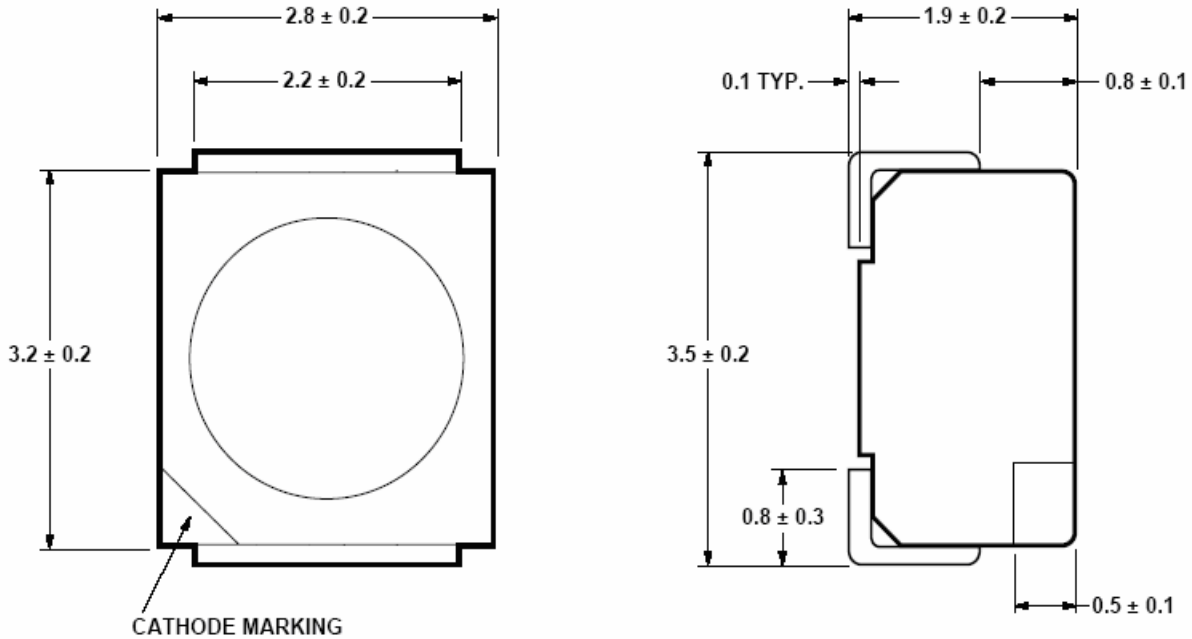
Applications

- NON-AUTOMOTIVE USE
- General Signage backlighting
- Amusement machine backlighting
- Industrial lighting
- Light strips

CAUTION: LEDs are ESD sensitive. Please observe appropriate precautions during handling and processing.

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Package Drawing



Note:

1. All dimensions in millimeters.
2. Terminal finish = Ag plating.

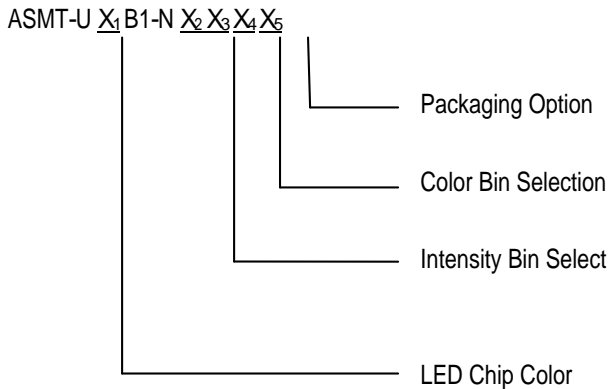
Device Selection Guide

Color	Part Number	Luminous Intensity, I_v (mcd) ^{Note 1,2}				Dice Technology
		Min. I_v (mcd)	Typ. I_v (mcd)	Max. I_v (mcd)	Test Current (mA)	
White	ASMT-UWB1-NX3F2	1800	-	3550	20	InGaN

Note:

1. The luminous intensity I_v is measured at the mechanical axis of the lamp package. The actual peak of the spatial radiation pattern may not be aligned with this axis.
2. Tolerance = $\pm 12\%$

Part Numbering System



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Absolute Maximum Ratings (T_A = 25 °C)

Parameters	Rating
DC Forward Current ^{Note 1}	30 mA
Peak Forward Current ^{Note 2}	100 mA
Power Dissipation	108 mW
Junction Temperature	110 °C
Operating Temperature	-40 °C to +85 °C
Storage Temperature	-40 °C to +100 °C

Note:

1. Derate linearly as shown in derating curve.
2. Duty Factor = 10%, Frequency = 1kHz

Optical Characteristics (T_A = 25 °C)

Color	Part Number	Dice Technology	Typ. Chromaticity Coordinates ^{Note 1}		Viewing Angle 2θ _½ ^{Note 2} (Degrees)	Luminous Efficiency η _e (lm/W)	Total Flux / Luminous Intensity Φ _v (lm) / I _v (cd)	CRI
			x	y	Typ.	Typ.	Typ.	Min.
White	ASMT-UWB1-NX3F2	InGaN	0.38	0.38	120	100	2.8	70

Notes:

1. The chromaticity coordinates are derived from the CIE 1931 Chromaticity diagram and represents the perceived color of the device.
2. θ_½ is the off-axis angle where the luminous intensity is ½ the peak intensity.

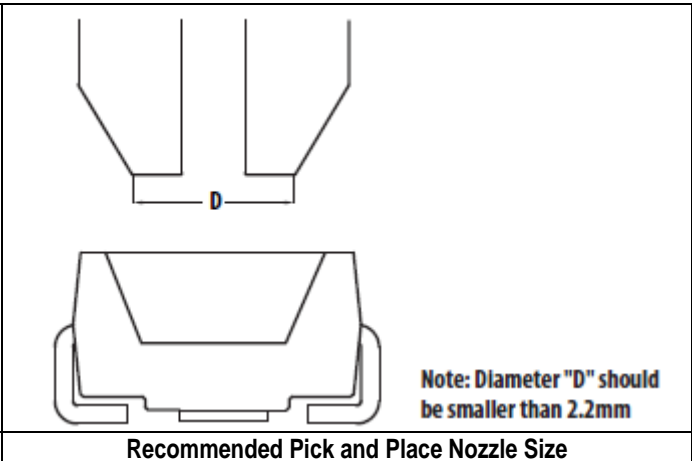
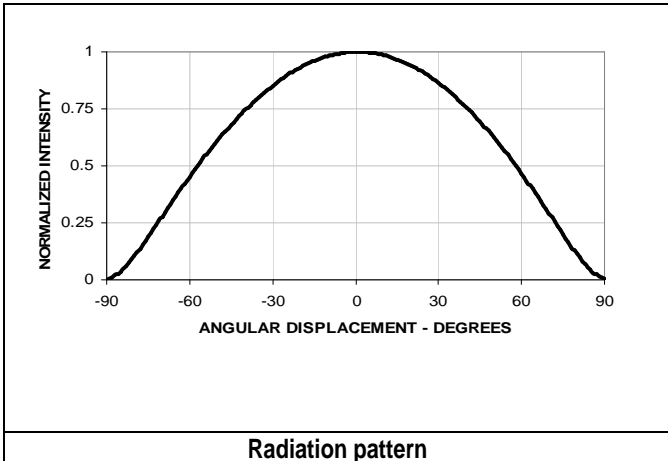
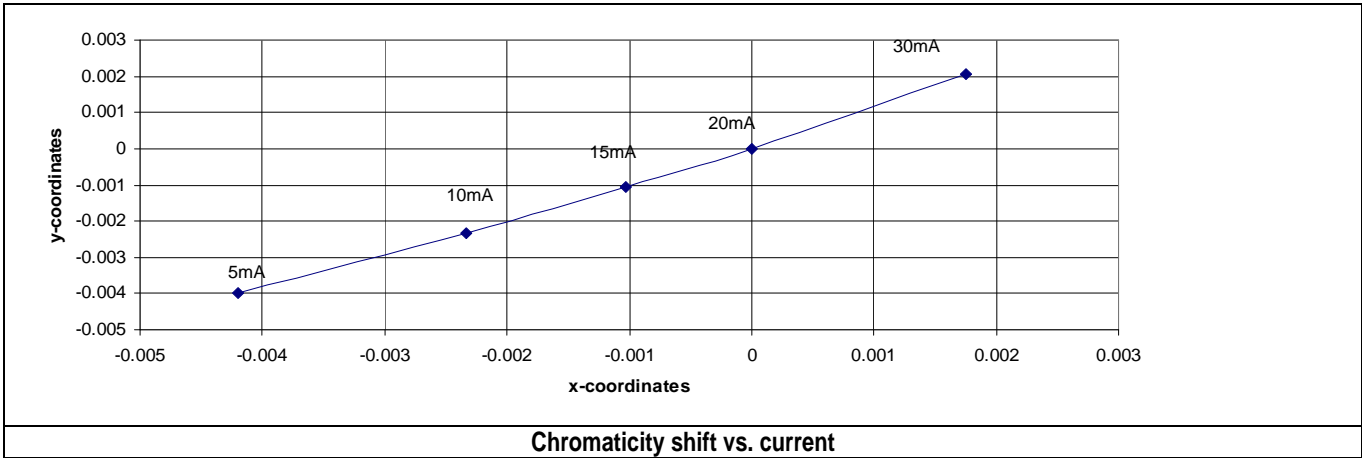
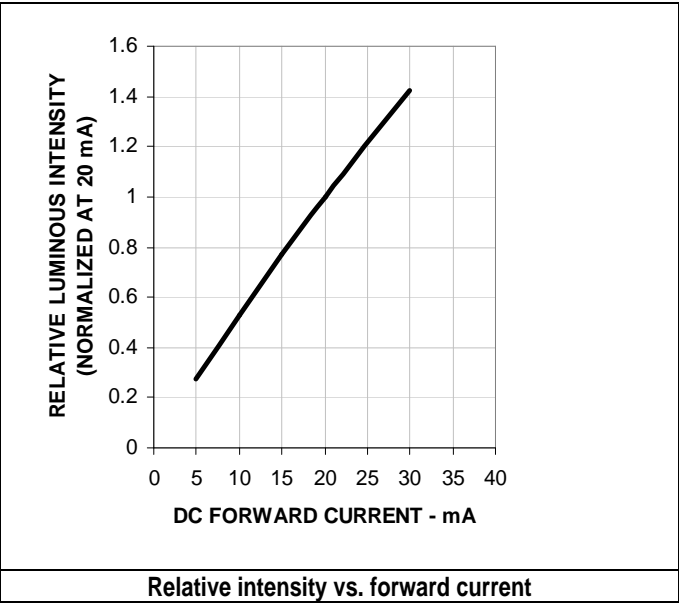
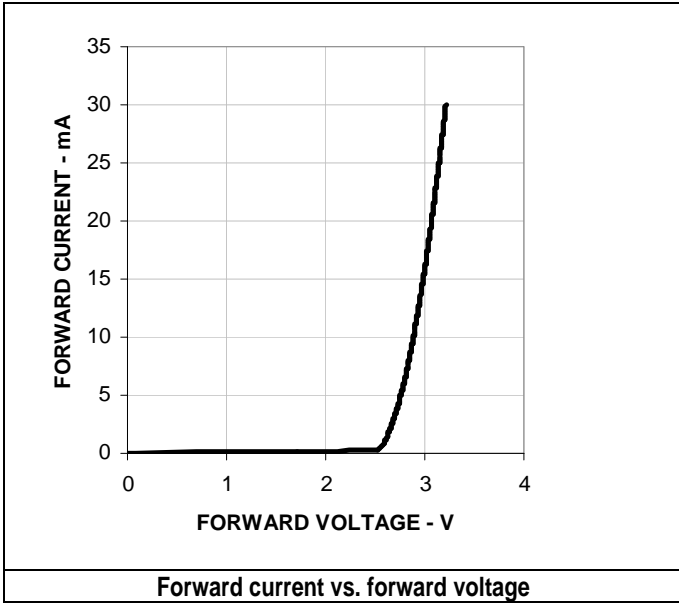
Electrical Characteristics (T_A = 25 °C)

Color	Part Number	Forward Voltage V _F (Volts) @ I _F = 20 mA		Reverse Voltage V _R ^{Note 1} @ 10μA	Thermal Resistance Rθ _{J-P} (°C/W)
		Min.	Max.	Min.	
White	ASMT-UWB1-NX3F2	2.8	3.6	5	150

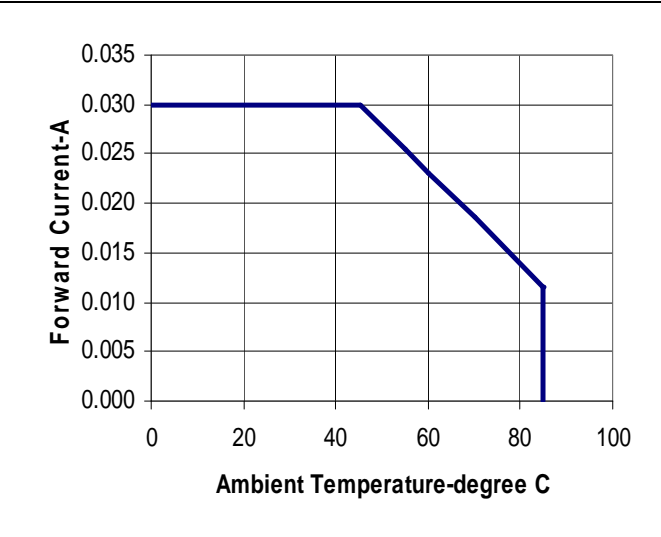
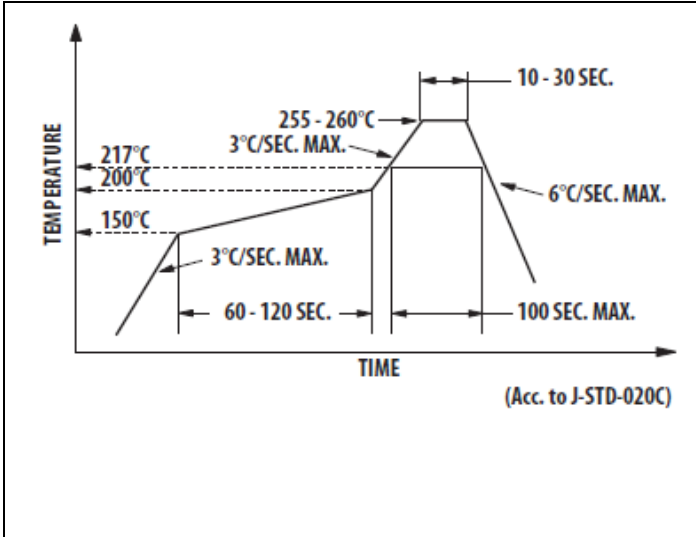
Notes:

1. Reverse Voltage indicates product final test condition. Long term reverse bias is not recommended.

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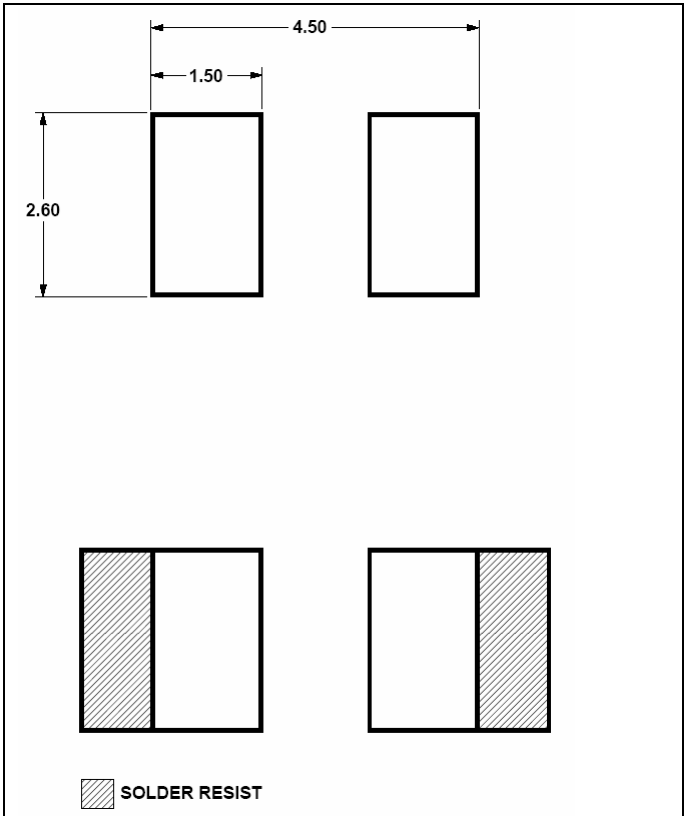


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Recommended Pb-free reflow soldering profile

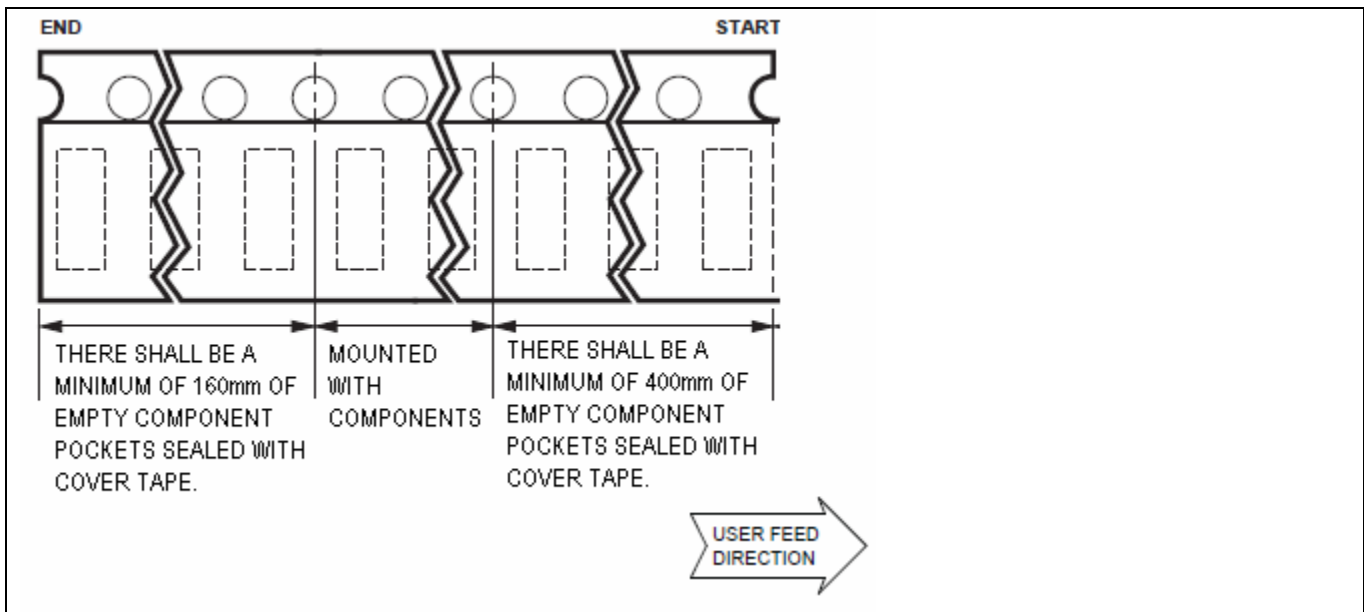
Maximum forward current vs. ambient temperature. Derated based on Tjmax 110°C, Rthja 450°C/W



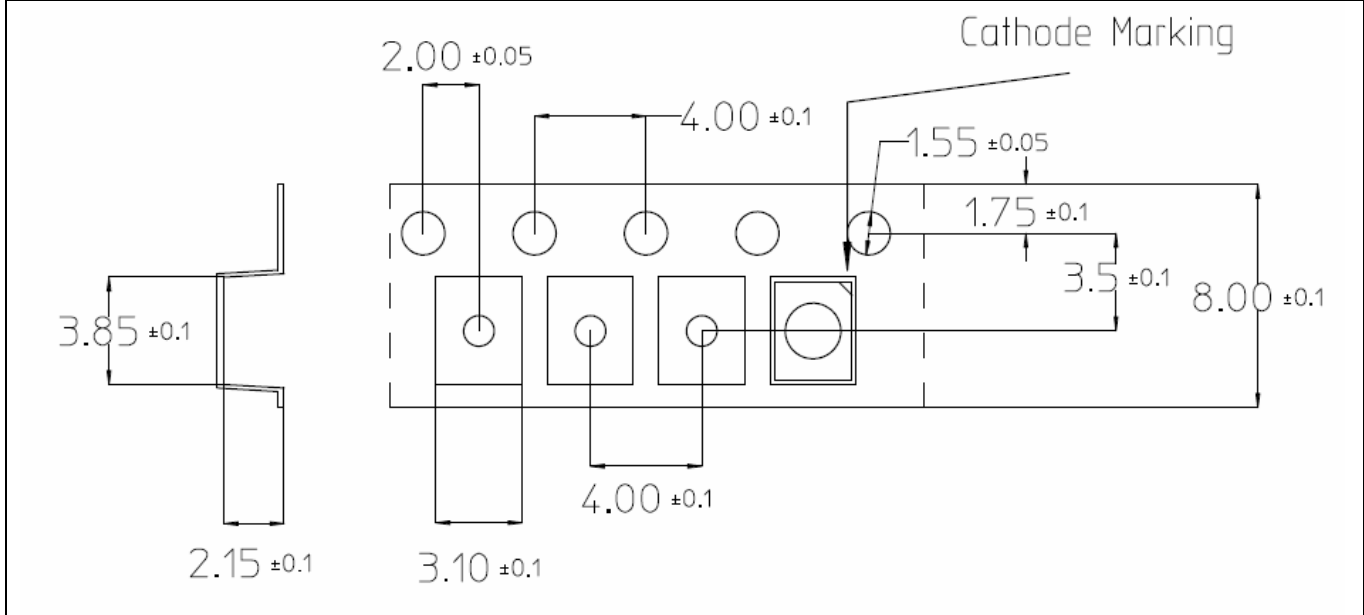
Recommended Soldering Pad Pattern

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Tape Leader and Trailer Dimensions



Tape Dimensions (Unit: mm)

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Intensity Bin Select (X₂X₃)

Individual reel will contain parts from one half bin only.

X₂	Min lv Bin
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X₃	
0	Full Distribution
3	3 half bins starting from x ₂ 1

Intensity Bin Limits

Bin ID	Min. (mcd)	Max. (mcd)
X1	1800	2240
X2	2240	2850
Y1	2850	3550

Tolerance of each bin limit = ± 12%

Color Bin Selection (X₄)

Individual reel will contain parts from one full bin only.

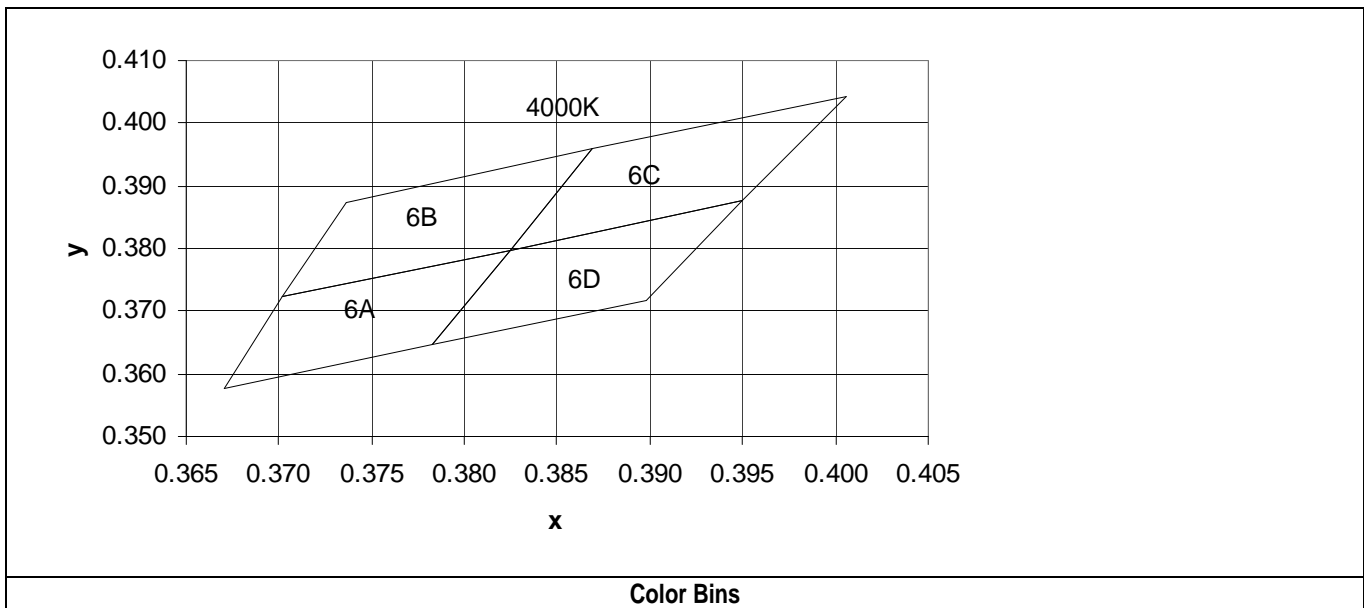
X₄	
Bin	Color Bin ID
F	6A, 6B, 6C, 6D

Color Bin ID Limits

Color Bin ID	Chromaticity Coordinates Limits				
		x	y	z	w
6A	x	0.3670	0.3702	0.3825	0.3783
	y	0.3578	0.3722	0.3798	0.3646
6B	x	0.3702	0.3736	0.3869	0.3825
	y	0.3722	0.3874	0.3958	0.3798
6C	x	0.3825	0.3869	0.4006	0.3950
	y	0.3798	0.3958	0.4044	0.3875
6D	x	0.3783	0.3825	0.3950	0.3898
	y	0.3646	0.3798	0.3875	0.3716

Tolerance of each bin limit = ±0.01

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Packaging Option (X₅)

Option	Test Current	Package Type	Reel Size
2	20 mA	Top Mount	7 Inch

Forward Voltage Bin

Bin ID	Min.	Max
F05	2.8	3.0
F06	3.0	3.2
F07	3.2	3.4
F08	3.4	3.6

Tolerance of each bin limit = ±0.1V

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