

ASMT-UWBG / ASMT-UWBH

0.25W Cool White Power PLCC4

Surface Mount LED



Datasheet



Description

The Avago Technologies ASMT-UWBx series 0.25W Cool White Power PLCC4 SMT LED lamps use InGaN chip technology and superior package design to enable them to produce higher light output with better flux performance. They can be driven at high current and are able to dissipate the heat more efficiently resulting in better performance with higher reliability. These lamps are able to operate under a wide range of environmental conditions making them ideal for various applications including fluorescent replacement, under cabinet lighting, retail display lighting and panel lights.

To facilitate easy pick and place assembly, the LEDs are packed in EIA-compliant tape and reel. Every reel is shipped in single intensity and color bin, to provide close uniformity.

CAUTION: Static sensitive device. Please observe appropriate precautions during handling and processing.

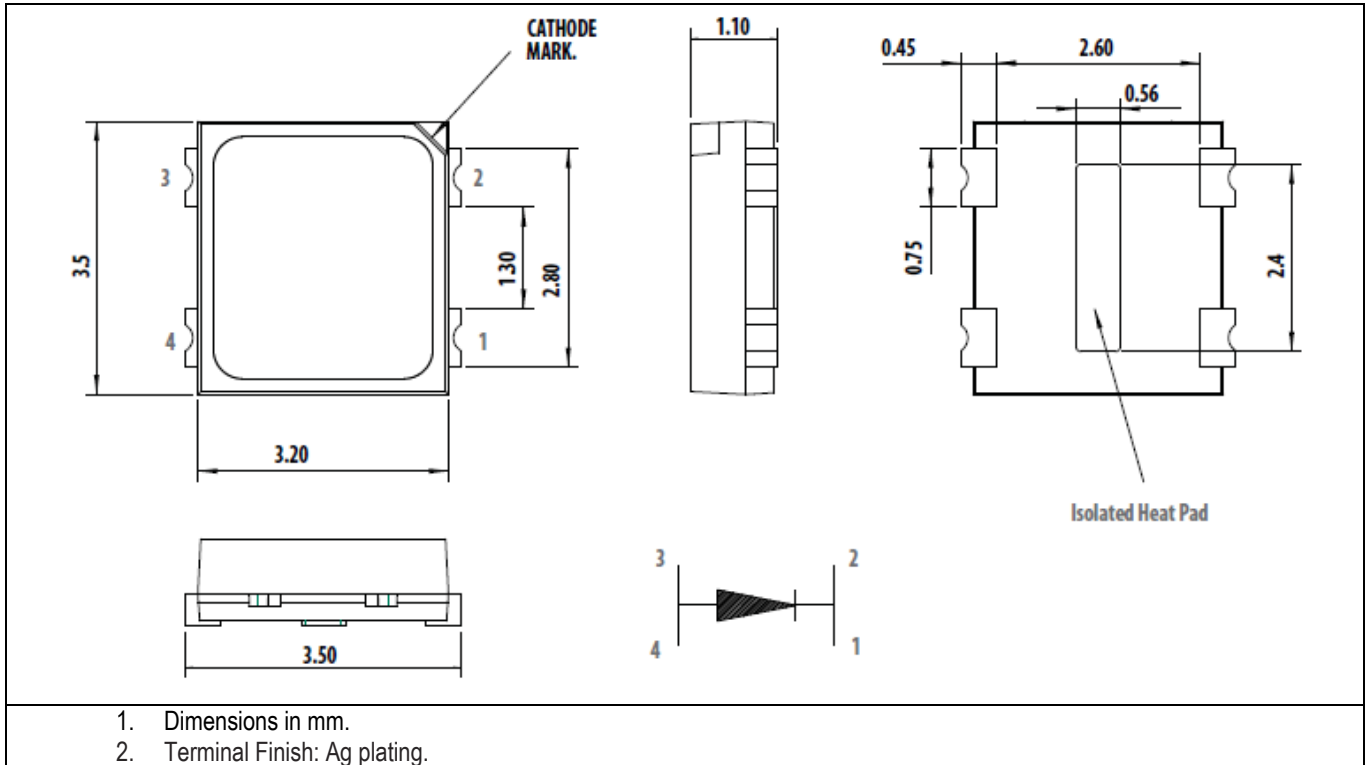
Features

- (1) 4000K to 8000K CCT
- (2) ANSI bin
- (3) Wide view angle 120°
- (4) High reliability package with enhanced silicone resin encapsulation

Applications

- (1) Fluorescent replacement
- (2) Under cabinet lighting
- (3) Panel lights
- (4) Retail display lighting

Package Drawing



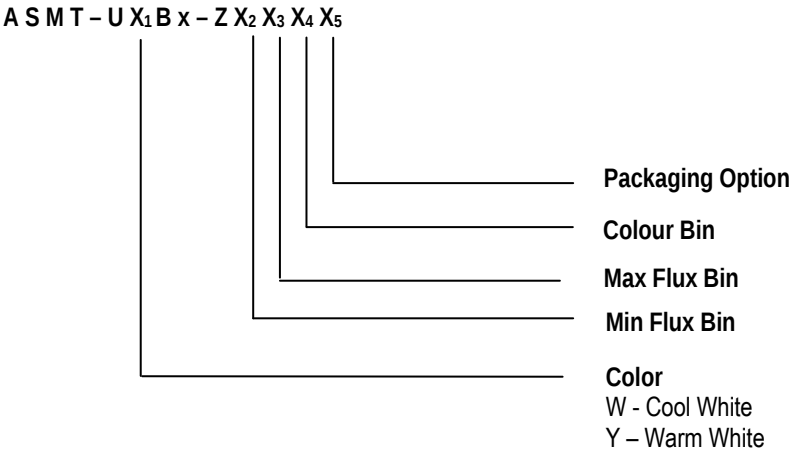
Device Selection Guide

Color	Part Number	CCT (K)	CRI	Luminous Flux (lm) ^{1,2}			Test Current (mA)	Chip
			Typ	Min	Typ	Max		
Cool White	ASMT-UWBG-ZAC08	4000 ~ 8000	85	18.1	19.0	35.2	80	InGaN
Cool White	ASMT-UWBG-ZACA8	8000	85	18.1	19.0	35.2	80	InGaN
Cool White	ASMT-UWBG-ZACB8	6500	85	18.1	19.0	35.2	80	InGaN
Cool White	ASMT-UWBG-ZACC8	5700	85	18.1	19.0	35.2	80	InGaN
Cool White	ASMT-UWBG-ZACD8	5000	85	18.1	19.0	35.2	80	InGaN
Cool White	ASMT-UWBG-ZACE8	4500	85	18.1	19.0	35.2	80	InGaN
Cool White	ASMT-UWBG-ZACF8	4000	85	18.1	19.0	35.2	80	InGaN
Cool White	ASMT-UWBG-ZACK8	6500 ~ 8000	85	18.1	19.0	35.2	80	InGaN
Cool White	ASMT-UWBG-ZACL8	5700 ~ 6500	85	18.1	19.0	35.2	80	InGaN
Cool White	ASMT-UWBG-ZACM8	5000 ~ 5700	85	18.1	19.0	35.2	80	InGaN
Cool White	ASMT-UWBG-ZACN8	4500 ~ 5000	85	18.1	19.0	35.2	80	InGaN
Cool White	ASMT-UWBG-ZACP8	4000 ~ 4500	85	18.1	19.0	35.2	80	InGaN
Cool White	ASMT-UWBH-ZBD08	4000 ~ 8000	75	23.5	24.7	39.8	80	InGaN
Cool White	ASMT-UWBH-ZBDA8	8000	75	23.5	24.7	39.8	80	InGaN
Cool White	ASMT-UWBH-ZBDB8	6500	75	23.5	24.7	39.8	80	InGaN
Cool White	ASMT-UWBH-ZBDC8	5700	75	23.5	24.7	39.8	80	InGaN

Cool White	ASMT-UWBH-ZBDD8	5000	75	23.5	24.7	39.8	80	InGaN
Cool White	ASMT-UWBH-ZBDE8	4500	75	23.5	24.7	39.8	80	InGaN
Cool White	ASMT-UWBH-ZBDF8	4000	75	23.5	24.7	39.8	80	InGaN
Cool White	ASMT-UWBH-ZBDK8	6500 ~ 8000	75	23.5	24.7	39.8	80	InGaN
Cool White	ASMT-UWBH-ZBDL8	5700 ~ 6500	75	23.5	24.7	39.8	80	InGaN
Cool White	ASMT-UWBH-ZBDM8	5000 ~ 5700	75	23.5	24.7	39.8	80	InGaN
Cool White	ASMT-UWBH-ZBDN8	4500 ~ 5000	75	23.5	24.7	39.8	80	InGaN
Cool White	ASMT-UWBH-ZBDP8	4000 ~ 4500	75	23.5	24.7	39.8	80	InGaN

1. Luminous flux is the total luminous flux output as measured with an integrating sphere at mono pulse conditions.
2. Tolerance $\pm 12\%$.

Part Numbering System



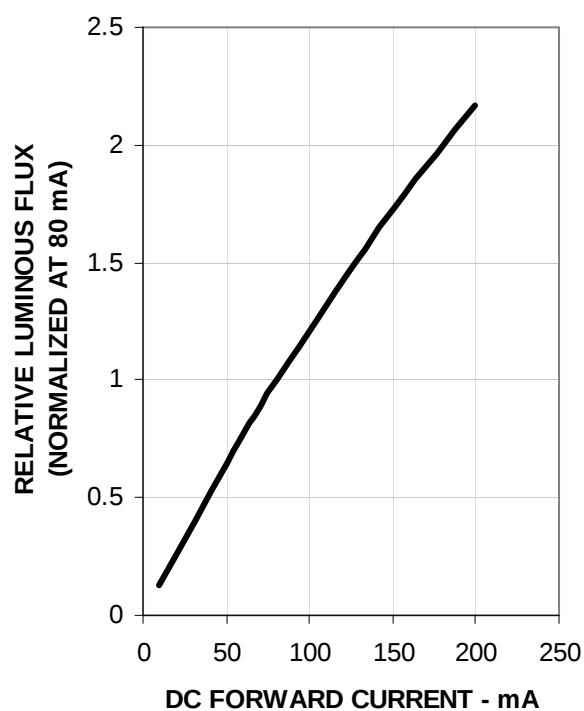
Absolute Maximum Ratings (T_A = 25 °C)

Parameter	Rating	Unit
DC Forward Current	100	mA
Peak Forward Current (D = 10%, f = 1kHz)	200	mA
Power Dissipation	360	mW
Reverse Voltage	Not recommended	V
Junction Temperature	125	°C
Operating Temperature	-40 to 100	°C
Storage Temperature	-40 to 100	°C

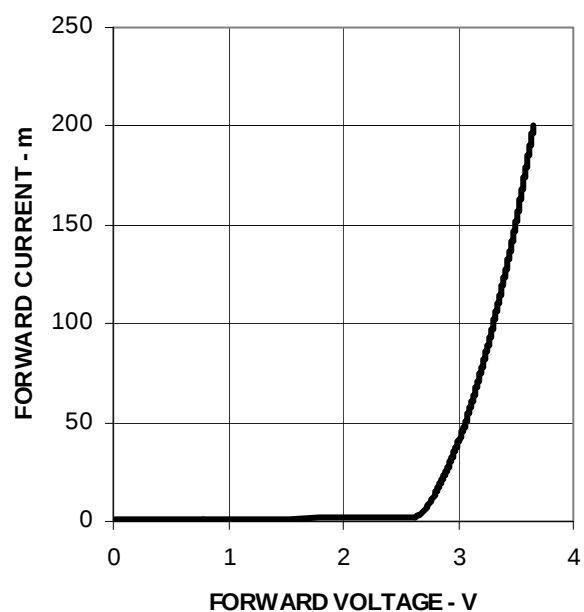
Optical / Electrical Characteristics (T_J = 25 °C)

Parameter	Test Condition	Min	Typ	Max	Unit
Viewing Angle 2θ _{1/2} ¹			120		degree
Forward Voltage V _F ²	I _F = 80mA		3.2	3.4	V
Thermal Resistance R _{TH}	junction to pin		50		°C/W

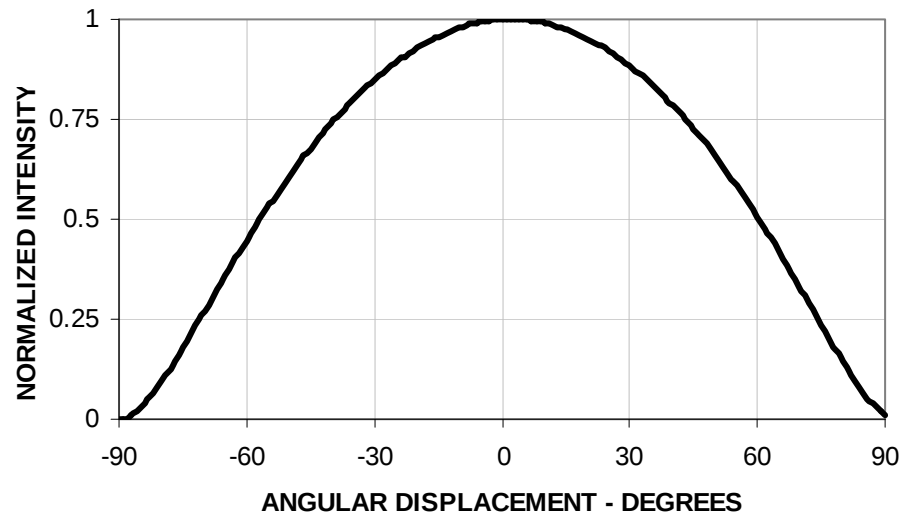
1. θ_{1/2} is the off-axis angle where the luminous intensity is 1/2 the peak intensity.
2. Tolerance ±0.1V.



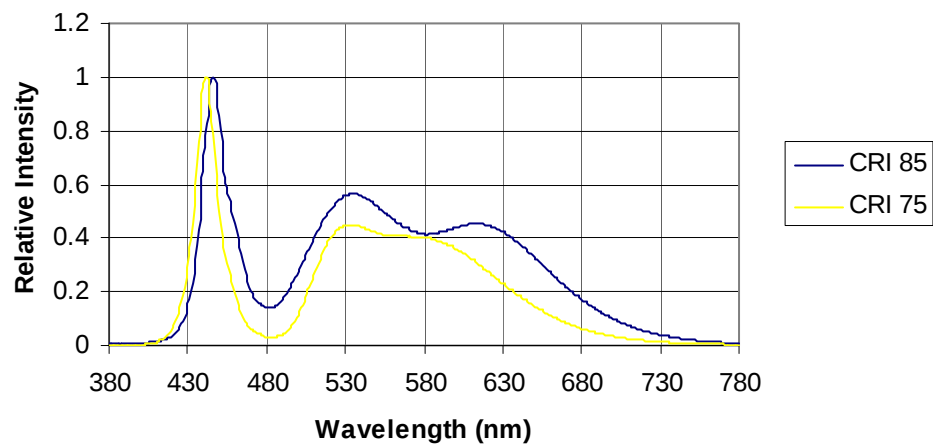
Relative Luminous Flux vs. Forward Current



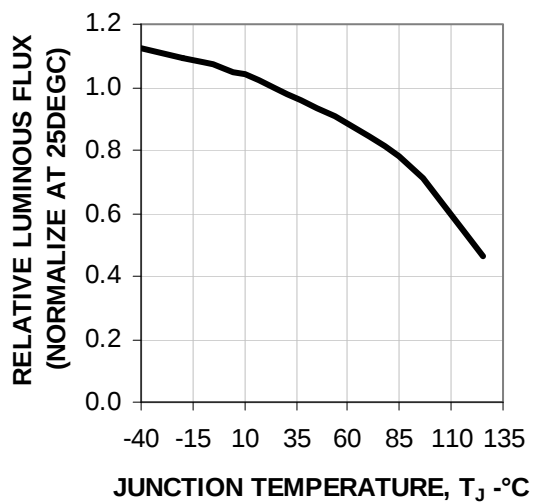
Forward Current vs. Forward Voltage



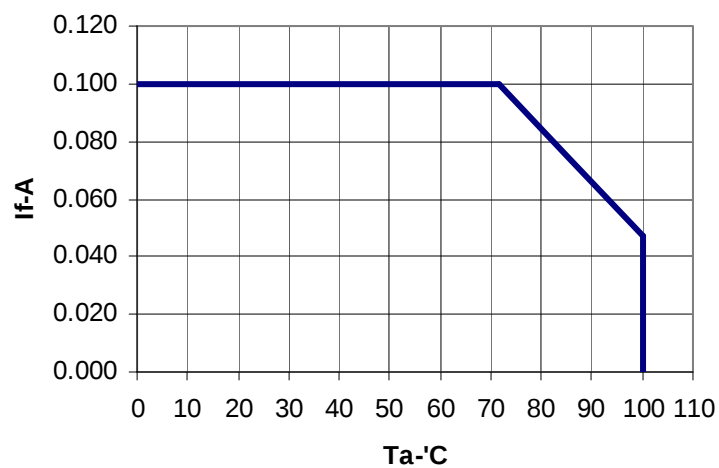
Radiation Diagram



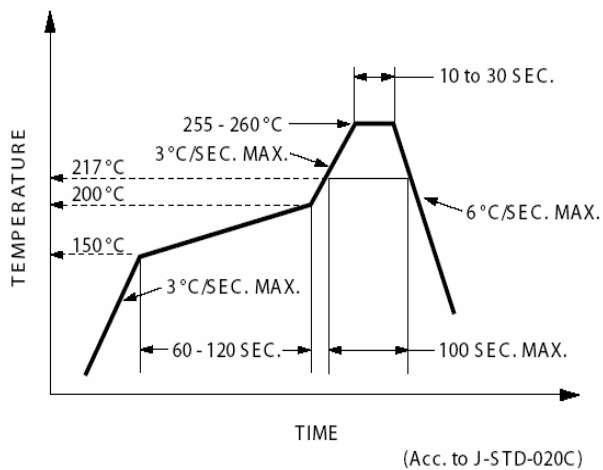
Spectrum Distribution



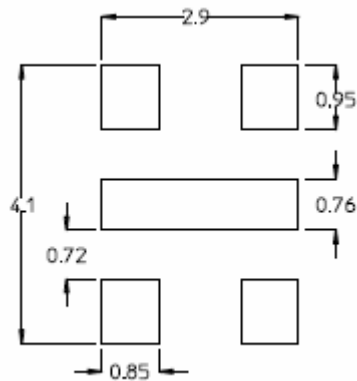
Relative Light Output



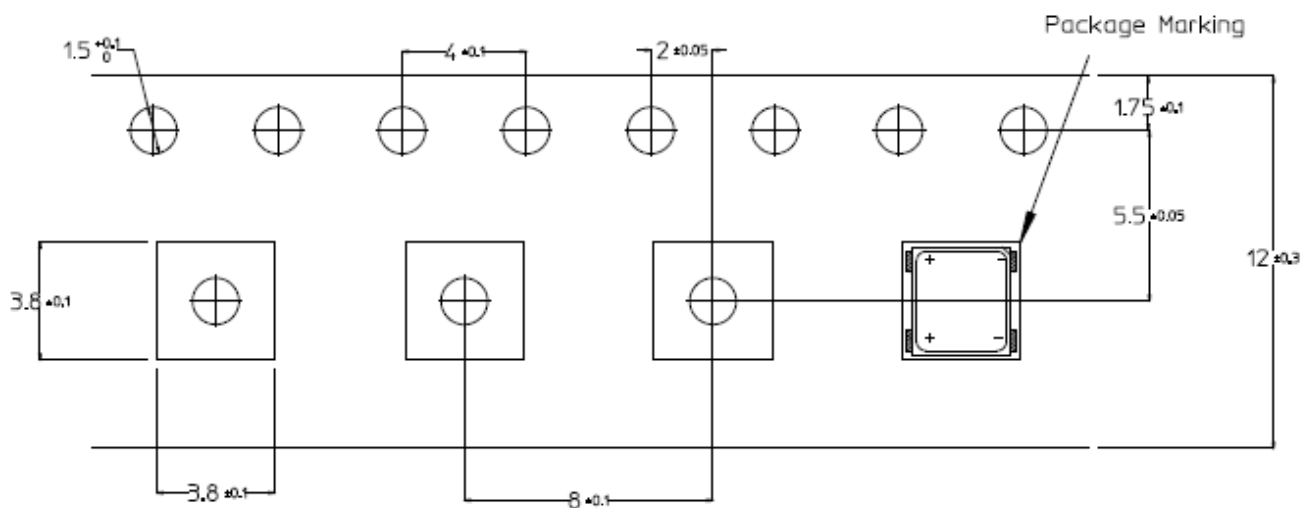
Forward Current Derating Curve. $R_{\theta JA}$ 140°C/W.



Recommended Pb Free Reflow Soldering Profile



Recommended Solder Pad



Carrier Tape

Handling Precaution

The encapsulation material of the product is made of silicone for better reliability of the product. As silicone is a soft material, please do not press on the silicone or poke a sharp object onto the silicone. These might damage the product and cause premature failure. During assembly or handling, the unit should be held on the body only.

Device Color (X₁)

W	Cool White
Y	Warm White

Flux Bin (X₂X₃)

Individual reel will contain parts from one bin only.

X ₂	Min Flux Bin
X ₃	Max Flux Bin

Bin	Min (lm)	Max (lm)
A	18.1	23.5
B	23.5	30.6
C	30.6	35.2
D	35.2	39.8
E	39.8	45.7
F	45.7	51.7
G	51.7	56.8
H	56.8	62
J	62.0	67.2
K	67.2	73.9

Tolerance $\pm 12\%$ **Color Bin (X₄)**

Individual reel will contain parts from one sub bin only.

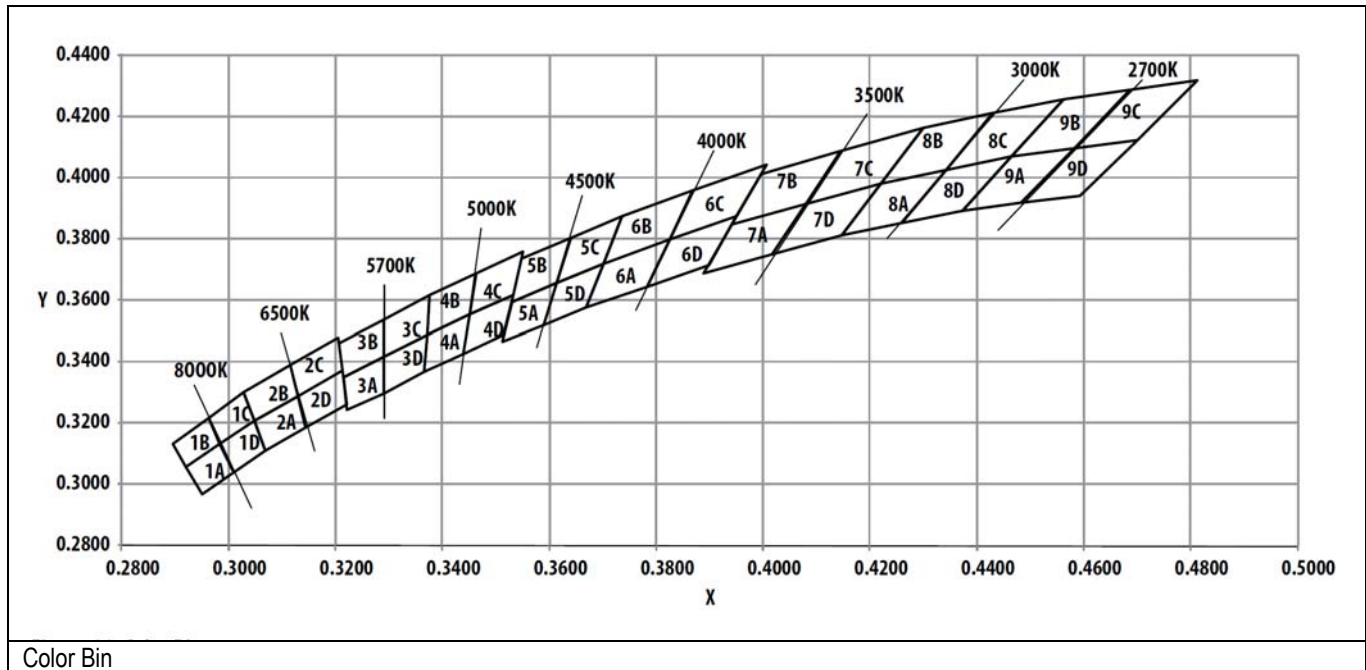
Bin	Sub Bin
A	1A, 1B, 1C, 1D
B	2A, 2B, 2C, 2D
C	3A, 3B, 3C, 3D
D	4A, 4B, 4C, 4D
E	5A, 5B, 5C, 5D
F	6A, 6B, 6C, 6D
G	7A, 7B, 7C, 7D
H	8A, 8B, 8C, 8D
J	9A, 9B, 9C, 9D
K	1A, 1B, 1C, 1D, 2A, 2B, 2C, 2D
L	2A, 2B, 2C, 2D, 3A, 3B, 3C, 3D
M	3A, 3B, 3C, 3D, 4A, 4B, 4C, 4D
N	4A, 4B, 4C, 4D, 5A, 5B, 5C, 5D
P	5A, 5B, 5C, 5D, 6A, 6B, 6C, 6D
R	7A, 7B, 7C, 7D, 8A, 8B, 8C, 8D
S	8A, 8B, 8C, 8D, 9A, 9B, 9C, 9D
0	1A, 1B, 1C, 1D, 2A, 2B, 2C, 2D, 3A, 3B, 3C, 3D, 4A, 4B, 4C, 4D, 5A, 5B, 5C, 5D, 6A, 6B, 6C, 6D
1	7A, 7B, 7C, 7D, 8A, 8B, 8C, 8D, 9A, 9B, 9C, 9D

Sub Bin	Chromaticity Coordinates				
1A	x	0.2950	0.2920	0.2984	0.3009
	y	0.2970	0.3060	0.3133	0.3042
1B	x	0.2920	0.2895	0.2962	0.2984
	y	0.3060	0.3135	0.3220	0.3133
1C	x	0.2984	0.2962	0.3028	0.3048
	y	0.3133	0.3220	0.3304	0.3207
1D	x	0.2984	0.3048	0.3068	0.3009
	y	0.3133	0.3207	0.3113	0.3042
2A	x	0.3048	0.3130	0.3144	0.3068
	y	0.3207	0.3290	0.3186	0.3113

2B	x	0.3028	0.3115	0.3130	0.3048
	y	0.3304	0.3391	0.3290	0.3207
2C	x	0.3115	0.3205	0.3213	0.3130
	y	0.3391	0.3481	0.3373	0.3290
2D	x	0.3130	0.3213	0.3221	0.3144
	y	0.3290	0.3373	0.3261	0.3186
3A	x	0.3215	0.3290	0.3290	0.3222
	y	0.3350	0.3417	0.3300	0.3243
3B	x	0.3207	0.3290	0.3290	0.3215
	y	0.3462	0.3538	0.3417	0.3350
3C	x	0.3290	0.3376	0.3371	0.3290
	y	0.3538	0.3616	0.3490	0.3417
3D	x	0.3290	0.3371	0.3366	0.3290
	y	0.3417	0.3490	0.3369	0.3300
4A	x	0.3371	0.3451	0.3440	0.3366
	y	0.3490	0.3554	0.3427	0.3369
4B	x	0.3376	0.3463	0.3451	0.3371
	y	0.3616	0.3687	0.3554	0.3490
4C	x	0.3463	0.3551	0.3533	0.3451
	y	0.3687	0.3760	0.3620	0.3554
4D	x	0.3451	0.3533	0.3515	0.3440
	y	0.3554	0.3620	0.3487	0.3427
5A	x	0.3530	0.3615	0.3590	0.3512
	y	0.3597	0.3659	0.3521	0.3465
5B	x	0.3548	0.3641	0.3615	0.3530
	y	0.3736	0.3804	0.3659	0.3597
5C	x	0.3641	0.3736	0.3702	0.3615
	y	0.3804	0.3874	0.3722	0.3659
5D	x	0.3615	0.3702	0.3670	0.3590
	y	0.3659	0.3722	0.3578	0.3521
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
7A	x	0.3889	0.3941	0.4080	0.4017
	y	0.3690	0.3848	0.3916	0.3751
7B	x	0.3941	0.3996	0.4146	0.4080
	y	0.3848	0.4015	0.4089	0.3916
7C	x	0.4080	0.4146	0.4299	0.4221
	y	0.3916	0.4089	0.4165	0.3984
7D	x	0.4017	0.4080	0.4221	0.4147
	y	0.3751	0.3916	0.3984	0.3814
8A	x	0.4147	0.4221	0.4342	0.4259
	y	0.3814	0.3984	0.4028	0.3853
8B	x	0.4221	0.4299	0.4430	0.4342
	y	0.3984	0.4165	0.4212	0.4028
8C	x	0.4342	0.4430	0.4562	0.4465
	y	0.4028	0.4212	0.4260	0.4071
8D	x	0.4259	0.4342	0.4465	0.4373
	y	0.3853	0.4028	0.4071	0.3893
9A	x	0.4373	0.4465	0.4582	0.4483
	y	0.3893	0.4071	0.4099	0.3919

9B	x	0.4465	0.4562	0.4687	0.4582
	y	0.4071	0.4260	0.4289	0.4099
9C	x	0.4582	0.4687	0.4813	0.4700
	y	0.4099	0.4289	0.4319	0.4126
9D	x	0.4483	0.4582	0.4700	0.4593
	y	0.3919	0.4099	0.4126	0.3944

Tolerance ± 0.01



Packaging Option (X_s)

Option	Test Current	Package Type	Reel Size
8	80mA	Top Mount	13 Inch

Forward Voltage Bin

Bin	Min (V)	Max (V)
F05	2.8	3.0
F06	3.0	3.2
F07	3.2	3.4

Tolerance $\pm 0.1V$

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