ASMT-UYBG / ASMT-UYBH / ASMT-UYBJ
0.25W Warm White Power PLCC4
Surface Mount LED
Datasheet





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

Description

The 0.25W Warm White Power PLCC4 SMT LED is using InGaN chip technology. The package can be driven at high current due to its superior package design. The product is able to dissipate the heat more efficiently. These LEDs produce higher light output with better flux performance.

The 0.25W Warm White Power PLCC4 SMT LEDs are designed for higher reliability, better performance, and operate under a wide range of environmental conditions.

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.

Features

(1) 2700K to 3500K CCT

(2) ANSI bin

(3) Wide viewing angle 120°

(4) High reliability package with enhanced silicone resin encapsulation

Applications

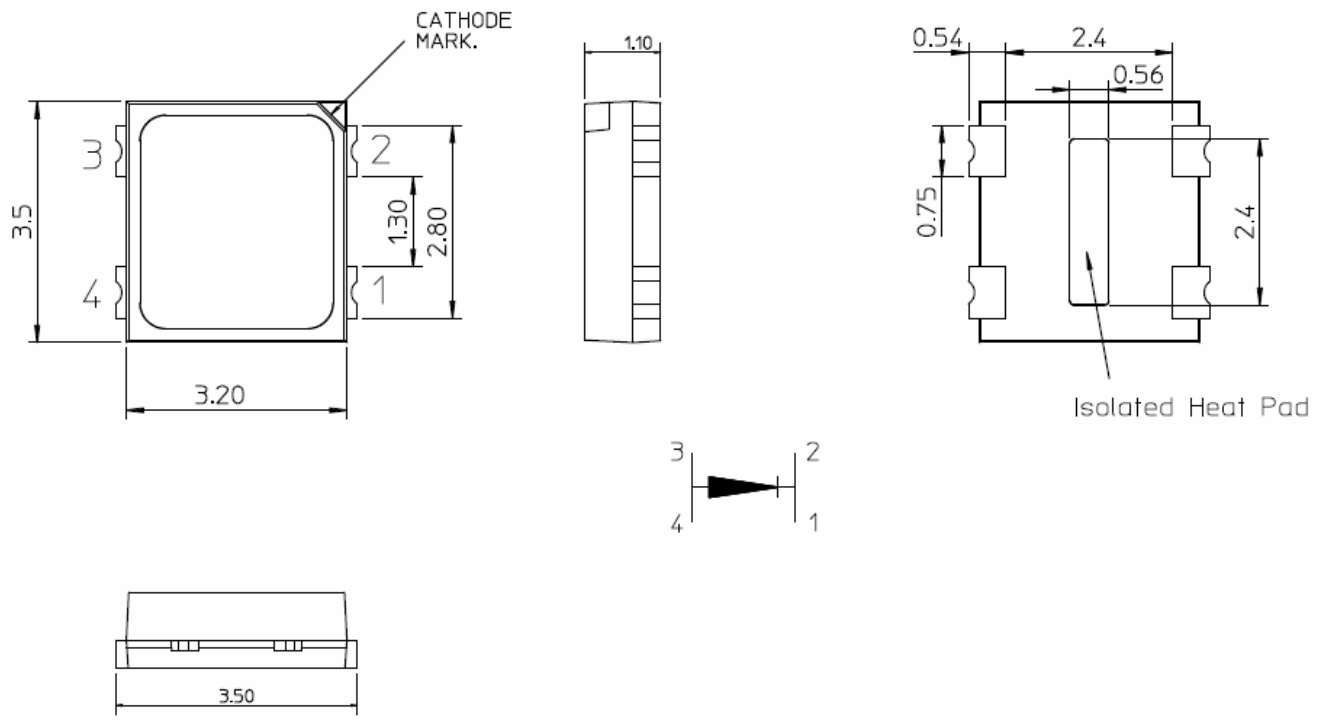
(1) Fluorescent replacement

(2) Under cabinet lighting

(3) Panel lights

(4) Retail display lighting

Package Drawing



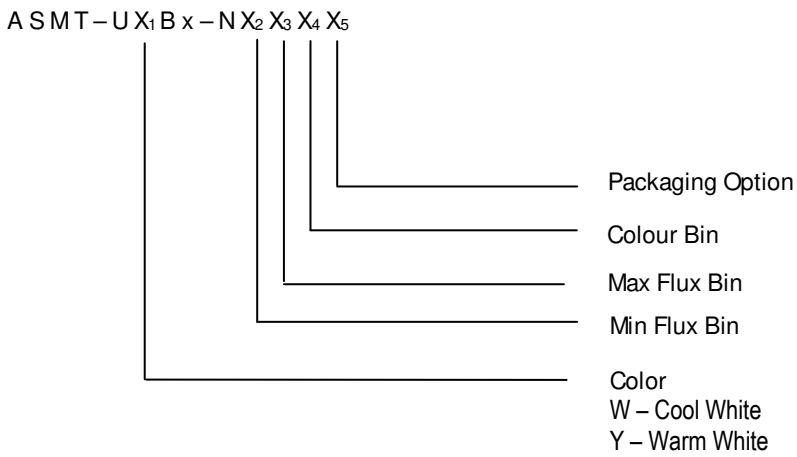
1. Dimensions in mm.
2. Terminal Finish: Ag plating.

Device Selection Guide (T_J = 25 °C)

Color	Part Number	CCT (K)	CRI	Luminous Flux (lm)[1,2]			Test Current (mA)	Chip
			Typ	Min	Typ	Max		
Warm White	ASMT-UYBG-NAC18	2700 ~ 3500	85	18.1	19.0	35.2	80	InGaN
Warm White	ASMT-UYBG-NACG8	3500	85	18.1	19.0	35.2	80	InGaN
Warm White	ASMT-UYBG-NACH8	3000	85	18.1	19.0	35.2	80	InGaN
Warm White	ASMT-UYBG-NACJ8	2700	85	18.1	19.0	35.2	80	InGaN
Warm White	ASMT-UYBH-NAC18	2700 ~ 3500	75	18.1	19.0	35.2	80	InGaN
Warm White	ASMT-UYBH-NACG8	3500	75	18.1	19.0	35.2	80	InGaN
Warm White	ASMT-UYBH-NACH8	3000	75	18.1	19.0	35.2	80	InGaN
Warm White	ASMT-UYBH-NACJ8	2700	75	18.1	19.0	35.2	80	InGaN
Warm White	ASMT-UYBJ-NAC18	2700 ~ 3500	65	18.1	19.0	35.2	80	InGaN
Warm White	ASMT-UYBJ-NACG8	3500	65	18.1	19.0	35.2	80	InGaN
Warm White	ASMT-UYBJ-NACH8	3000	65	18.1	19.0	35.2	80	InGaN
Warm White	ASMT-UYBJ-NACJ8	2700	65	18.1	19.0	35.2	80	InGaN

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

Part Numbering System



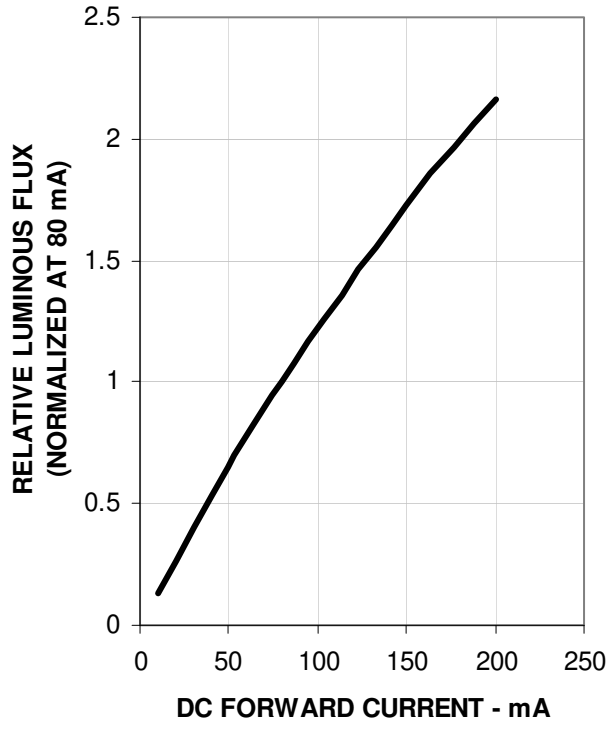
Absolute Maximum Ratings (T_A = 25 °C)

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

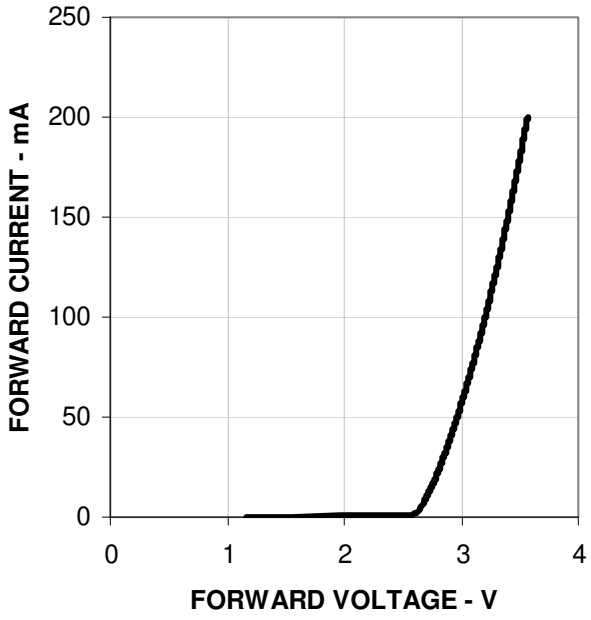
Optical / Electrical Characteristics (T_J = 25 °C)

Parameter	Test Condition	Min	Typ	Max	Unit
Viewing Angle $2\theta_{1/2}$ [1]			120		degree
Forward Voltage V_F [2]	I_F = 80mA		3.4	3.6	V
Thermal Resistance RTH	junction to pin		50		°C/W

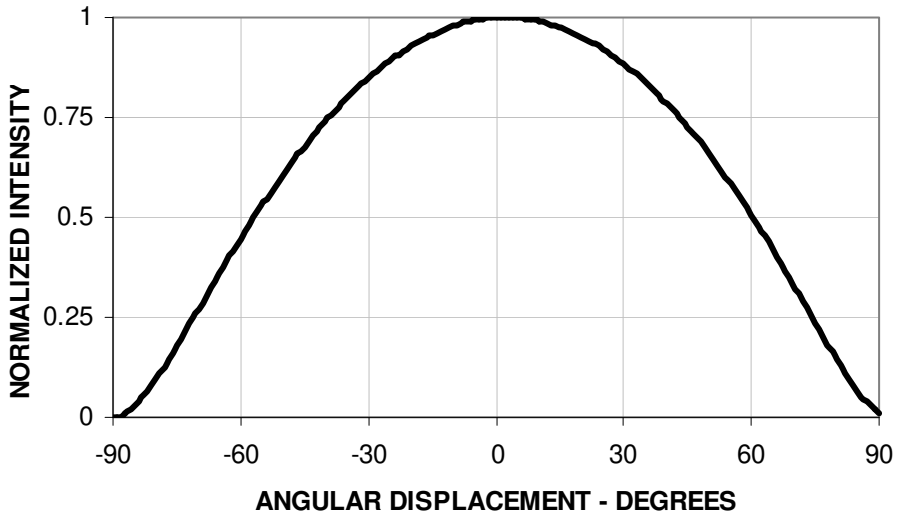
1. $\theta_{½}$ is the off-axis angle where the luminous intensity is ½ the peak intensity.
2. Tolerance ±0.1V.



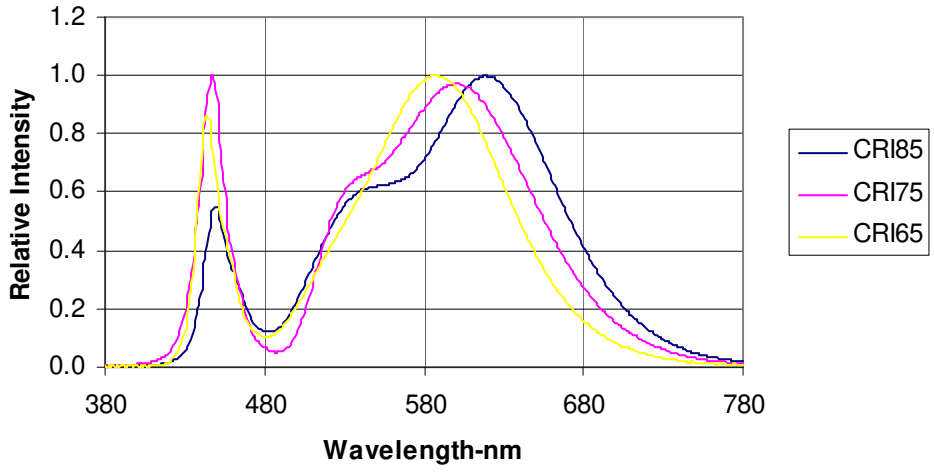
Relative Luminous Flux vs. Forward Current



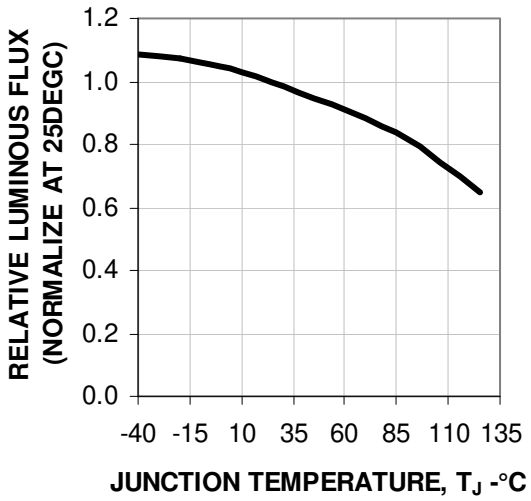
Forward Current vs. Forward Voltage



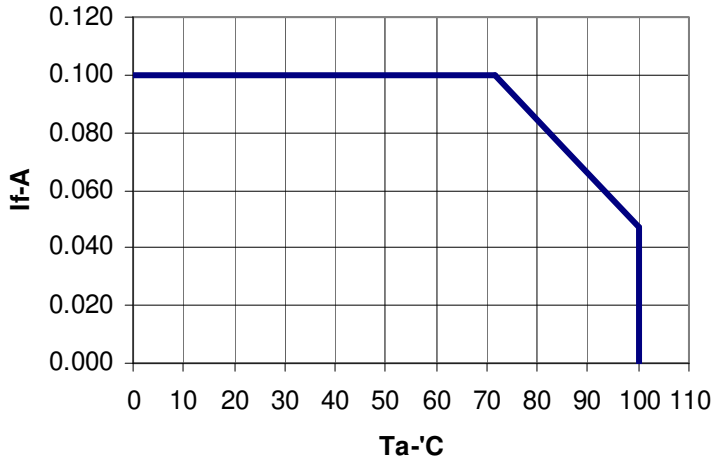
Radiation Diagram



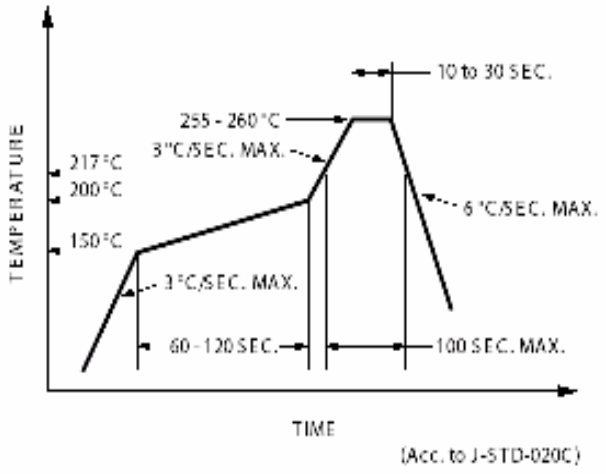
Spectrum Distribution



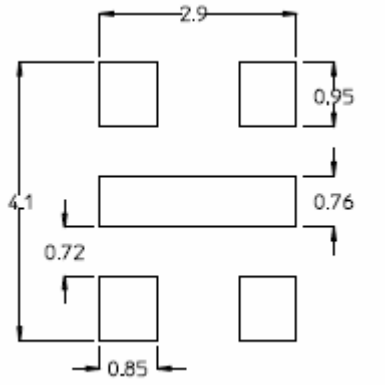
Relative Light Output



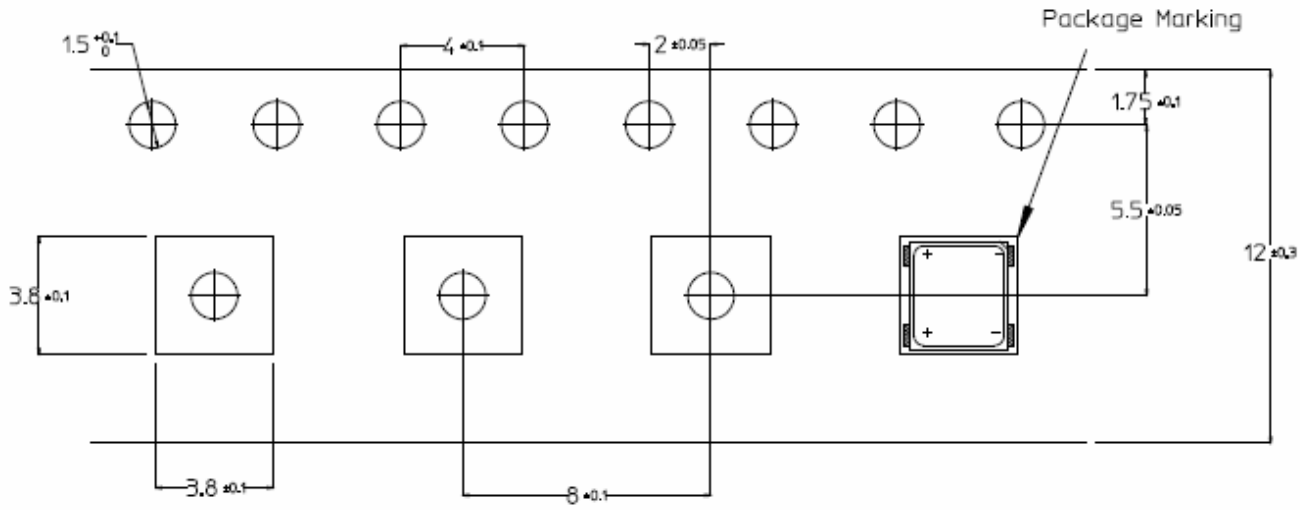
Forward Current Derating Curve. RTHja 140°C/W.



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 (X_1)

W	Cool White
Y	Warm White

Flux Bin (X_2X_3)

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 ± 12%

Color Bin (X_4)

Individual reel will contain parts from one sub bin only.

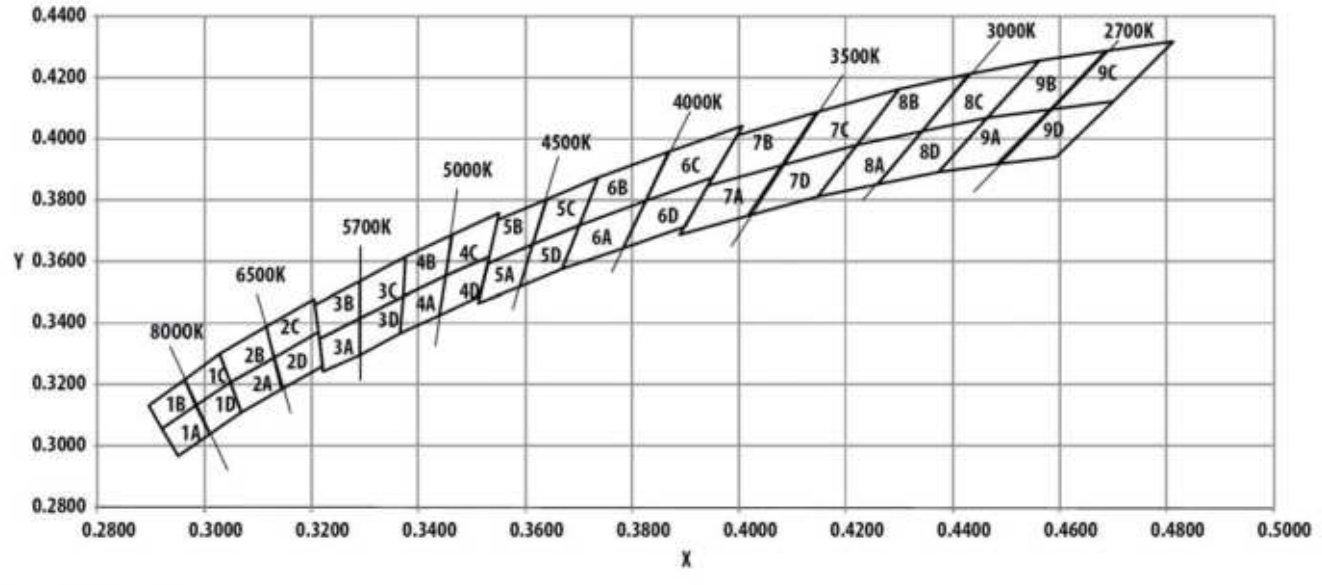
Bin	Sub Bin
A	1A, 1B, 1C, 1D
B	2A, 2B, 2C, 2D
C	3A, 3B, 3C, 3D
D	4A, 4B, 4C, 4D
E	5A, 5B, 5C, 5D
F	6A, 6B, 6C, 6D
G	7A, 7B, 7C, 7D
H	8A, 8B, 8C, 8D

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



Color Bin

Packaging Option (X_5)

Option	Test Current	Package Type	Reel Size
8	80mA	Top Mount	7 Inch

Forward Voltage Bin

Bin	Min (V)	Max (V)
F05	2.8	3.0
F06	3.0	3.2
F07	3.2	3.4
F08	3.4	3.6

Tolerance ± 0.1V

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