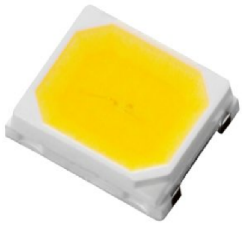
2835 LED
PLW2835AA Series
Product Datasheet



Description

Plessey PLW2835AA SMT LEDs are designed for optical indicators, indoor displays, automotive lighting, backlights for switches/symbols/LCD, tubular lighting and other general lighting applications and the light is emitted close to a Lambertian distribution. The LEDs are packed in reels containing 4000 pieces; each individual reel will be shipped in single intensity and colour bin, to provide close uniformity.

Features

- 2835 footprint (2.8 x 3.5 x 0.7mm)
- Colour binning
- High reliability PLCC-2 packaging
- Diffused pale yellow resin
- 120 degree wide viewing angle
- LM80 Certified

Applications

- Tubular Lighting
- Instrument panel backlighting
- Illumination symbols
- Automotive lighting
- General lighting

Variant	Colour	CCT	
		Min.	Max.
PLW2835AA-2700	Warm White 2700K	2575K	2850K
PLW2835AA-3000	Warm White 3000K	2850K	3225K
PLW2835AA-4000	Neutral White 4000K	3700K	4250K
PLW2835AA-6000	Cool White 6000K	5300K	6500K

Absolute Maximum Ratings

T_{amb} = +25°C unless otherwise stated

Parameter	Symbol	Minimum	Maximum	Unit
DC Forward Current	I_F	-	180	mA
Peak Pulse Forward Current[1]	I_{FP}	-	350	mA
Power Dissipation	P_d	-	612	mW
Storage Temperature	T_{stg}	-40	+100	°C
Junction Temperature	T_j		+115	°C

[1] Pulse width ≤10ms, duty cycle ≤10%

Electro-optical Characteristics

T_{amb} = +25°C unless otherwise stated

Parameter	Symbol	Condition	Min.	Typ.	Max.	Unit
Forward Voltage	V_F	I_F = 150mA	2.8	3.1	3.4	V
Reverse Current	I_R	V_R = 5V	-	-	10	µA
Colour Rendering Index	CRI	I_F = 150mA	80	82	84	%
Thermal Resistance	R_{thj-sp}		-	30	-	°C/W
Half-Intensity Angle	$2\Theta_{1/2}$	I_F = 150mA	-	120	-	deg

Recommended Operating Conditions

In typical applications, for optimum LED performance

Parameter	Symbol	Minimum	Maximum	Unit
Operating Ambient Temperature	T_{opr}	-40	+85	°C

Ordering Information

Name	Order Code	Luminous Flux Range	Forward Voltage Range
PLW2835AA-2700	PLW2835AAW27000	1A, 2A, 3A	V1-V6
PLW2835AA-3000	PLW2835AAW30000		
PLW2835AA-4000	PLW2835AAN40000	2A, 3A, 4A	
PLW2835AA-6000	PLW2835AAC60000	3A, 4A, 5A	

Intensity Bin Groups

I_F = 150mA, T_{amb} = +25ºC, unless otherwise stated

Group	Luminous flux [1] (lm)	
	Min.	Max.
1A	45	50
2A	50	55
3A	55	60
4A	60	65
5A	65	70

[1] Tolerance ±10%

Forward Voltage Bin Groups

I_F = 150mA, T_{amb} = +25ºC, unless otherwise stated

Group	V_F [1] (V)	
	Min.	Max.
V1	2.8	2.9
V2	2.9	3.0
V3	3.0	3.1
V4	3.1	3.2
V5	3.2	3.3
V6	3.3	3.4

[1] Tolerance ±0.1V

Chromaticity Binning

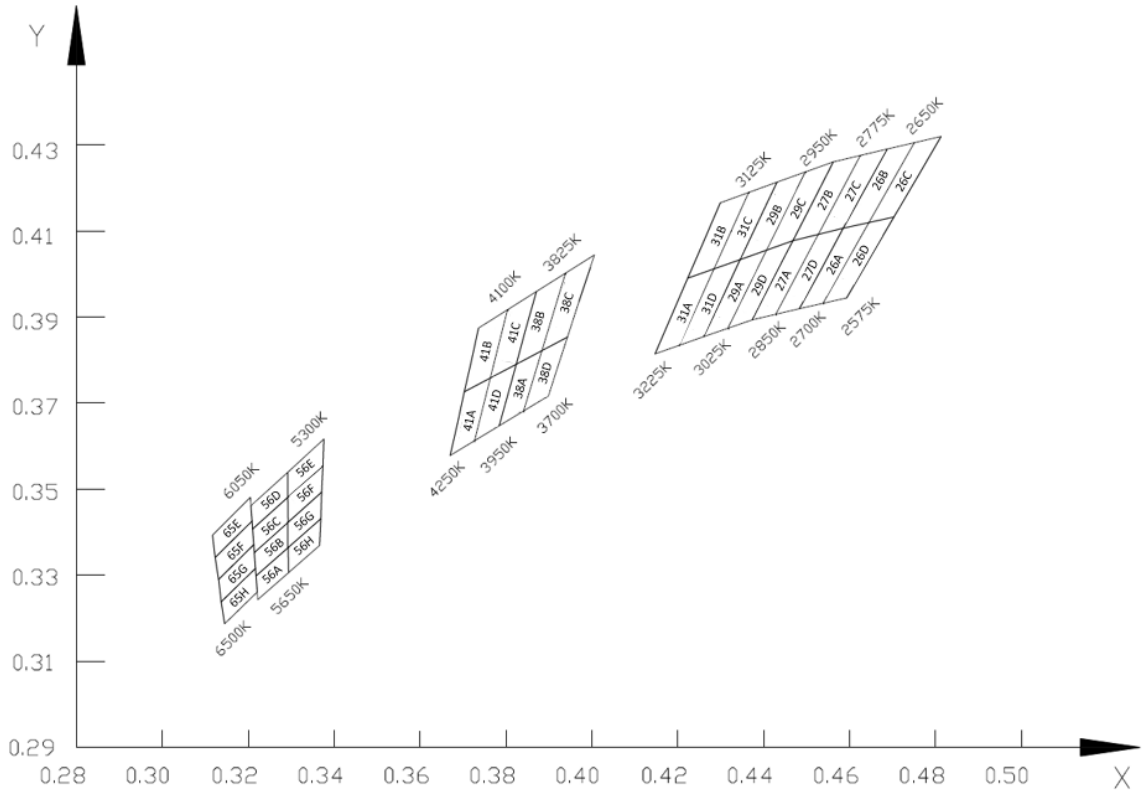


Figure 1. Colour Chromaticity Binning

	X1	Y1	X2	Y2	X3	Y3	X4	Y4
26A	0.4585	0.4106	0.4645	0.4119	0.4538	0.3932	0.4483	0.3919
26B	0.4688	0.4290	0.4751	0.4305	0.4645	0.4119	0.4585	0.4106
26C	0.4751	0.4305	0.4813	0.4319	0.4703	0.4132	0.4645	0.4119
26D	0.4645	0.4119	0.4703	0.4132	0.4593	0.3944	0.4538	0.3932
27A	0.4468	0.4077	0.4527	0.4092	0.4428	0.3906	0.4373	0.3893
27B	0.4562	0.4260	0.4625	0.4275	0.4527	0.4092	0.4468	0.4077
27C	0.4625	0.4275	0.4688	0.4290	0.4585	0.4106	0.4527	0.4092
27D	0.4527	0.4092	0.4585	0.4106	0.4483	0.3919	0.4428	0.3906
29A	0.4345	0.4033	0.4407	0.4055	0.4316	0.3874	0.4260	0.3854
29B	0.4431	0.4213	0.4497	0.4237	0.4407	0.4055	0.4345	0.4033
29C	0.4497	0.4237	0.4562	0.4260	0.4468	0.4077	0.4407	0.4055
29D	0.4407	0.4055	0.4468	0.4077	0.4373	0.3893	0.4316	0.3874
31A	0.4223	0.3990	0.4284	0.4012	0.4203	0.3834	0.4147	0.3814
31B	0.4299	0.4165	0.4365	0.4189	0.4284	0.4012	0.4223	0.3990
31C	0.4365	0.4189	0.4431	0.4213	0.4345	0.4033	0.4284	0.4012
31D	0.4284	0.4012	0.4345	0.4033	0.4260	0.3854	0.4203	0.3834
38A	0.3824	0.3790	0.3884	0.3822	0.3841	0.3682	0.3784	0.3647
38B	0.3871	0.3959	0.3938	0.4001	0.3884	0.3822	0.3824	0.3790
38C	0.3938	0.4001	0.4006	0.4044	0.3943	0.3853	0.3884	0.3822
38D	0.3884	0.3822	0.3943	0.3853	0.3899	0.3716	0.3841	0.3682
41A	0.3703	0.3726	0.3764	0.3758	0.3727	0.3612	0.3670	0.3578
41B	0.3736	0.3874	0.3803	0.3916	0.3764	0.3758	0.3703	0.3726
41C	0.3803	0.3916	0.3871	0.3959	0.3824	0.3790	0.3764	0.3758
41D	0.3764	0.3758	0.3824	0.3790	0.3784	0.3647	0.3727	0.3612
56E	0.3292	0.3481	0.3374	0.3554	0.3376	0.3616	0.3292	0.3539
56F	0.3292	0.3481	0.3374	0.3554	0.3371	0.3493	0.3293	0.3423
56G	0.3293	0.3423	0.3371	0.3493	0.3369	0.3431	0.3293	0.3364
56H	0.3293	0.3364	0.3369	0.3431	0.3366	0.3369	0.3294	0.3306
56D	0.3206	0.3461	0.3292	0.3539	0.3292	0.3481	0.3210	0.3407
56C	0.3210	0.3407	0.3292	0.3481	0.3293	0.3423	0.3214	0.3352
56B	0.3214	0.3352	0.3293	0.3423	0.3293	0.3364	0.3218	0.3298
56A	0.3218	0.3298	0.3293	0.3364	0.3294	0.3306	0.3222	0.3243
65E	0.3117	0.3393	0.3205	0.3481	0.3209	0.3426	0.3123	0.3341
65F	0.3123	0.3341	0.3209	0.3426	0.3213	0.3371	0.3131	0.3290
65G	0.3131	0.3290	0.3213	0.3371	0.3217	0.3316	0.3137	0.3238
65H	0.3137	0.3238	0.3217	0.3316	0.3221	0.3261	0.3145	0.3187

Relative Spectral Emission

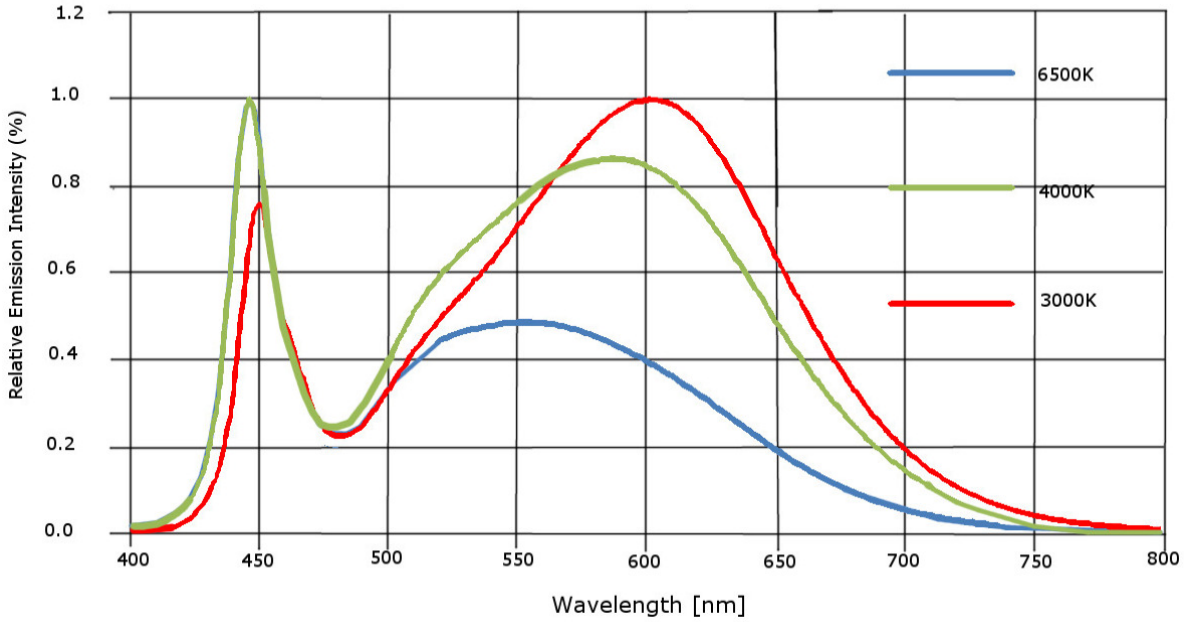


Figure 2. Normalised spectral power distribution

Note: The relative spectral emission corresponds to a random LED sample

Forward Current Characteristics

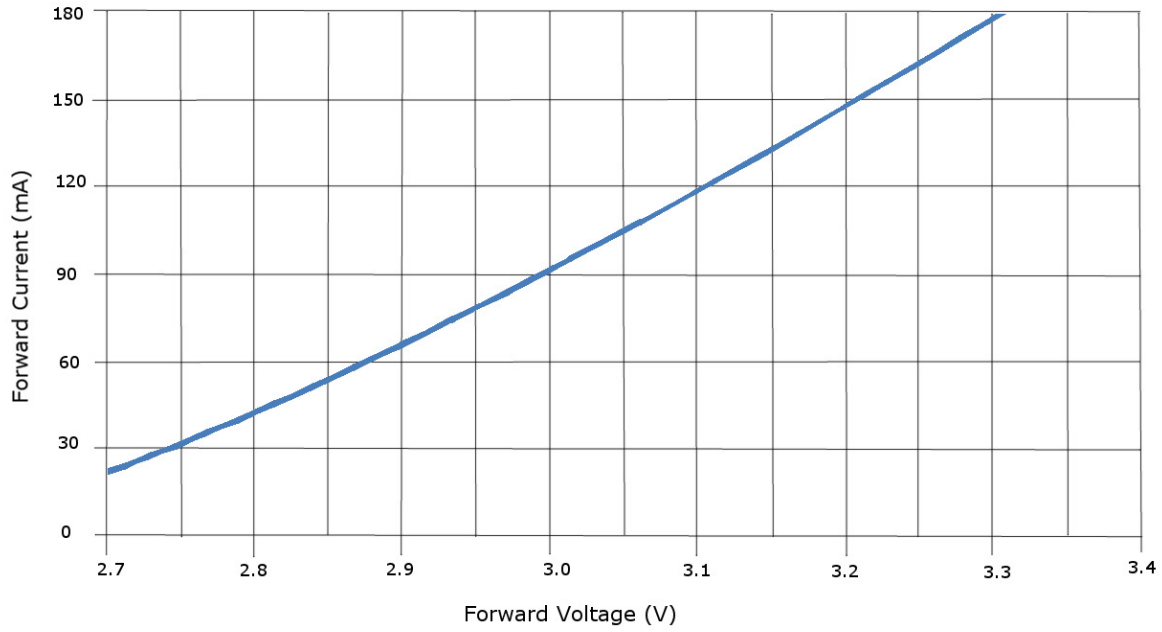


Figure 3. Typical forward current versus forward voltage (T_a=+25C)

Forward Current Characteristics (Continued)

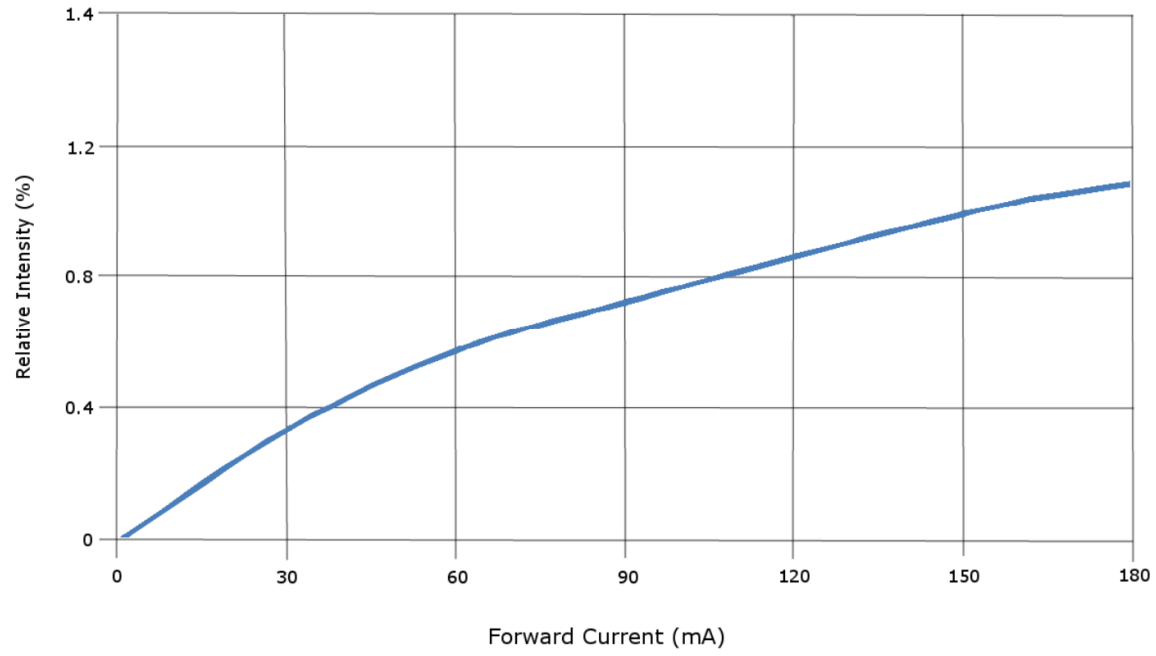


Figure 4. Relative luminous flux versus forward current (T_a=+25C)

Temperature Characteristics

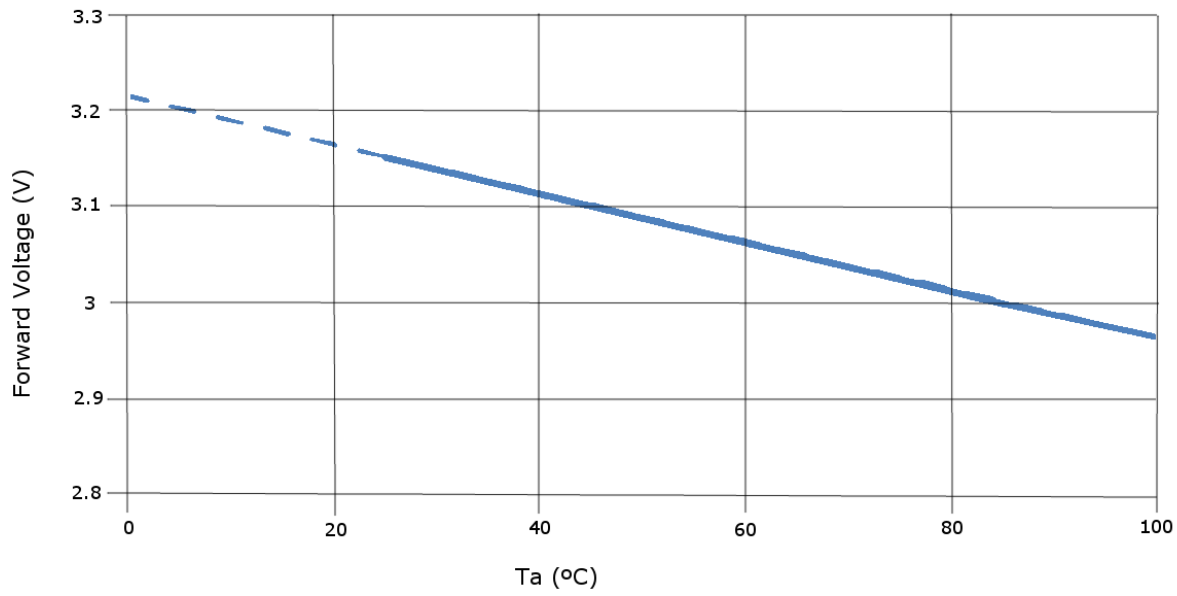


Figure 5. Typical forward voltage versus ambient temperature (I_F=150mA)

Temperature Characteristics (Continued)

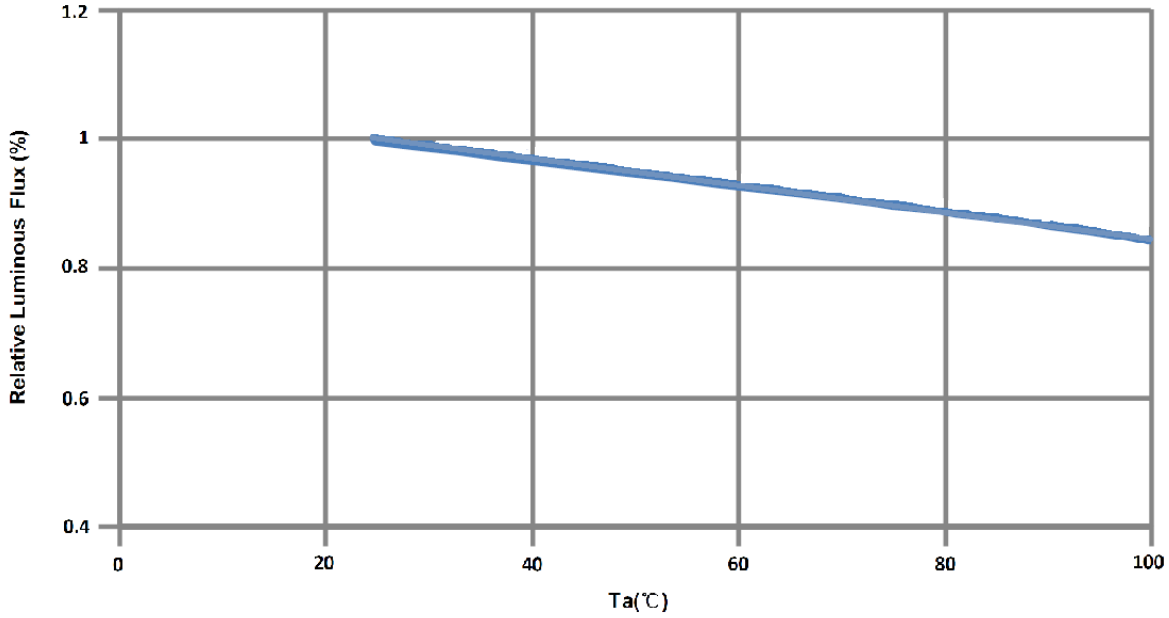


Figure 7: Ambient Temperature versus Relative Luminous Flux

Package Outline Dimensions & Soldering Pattern

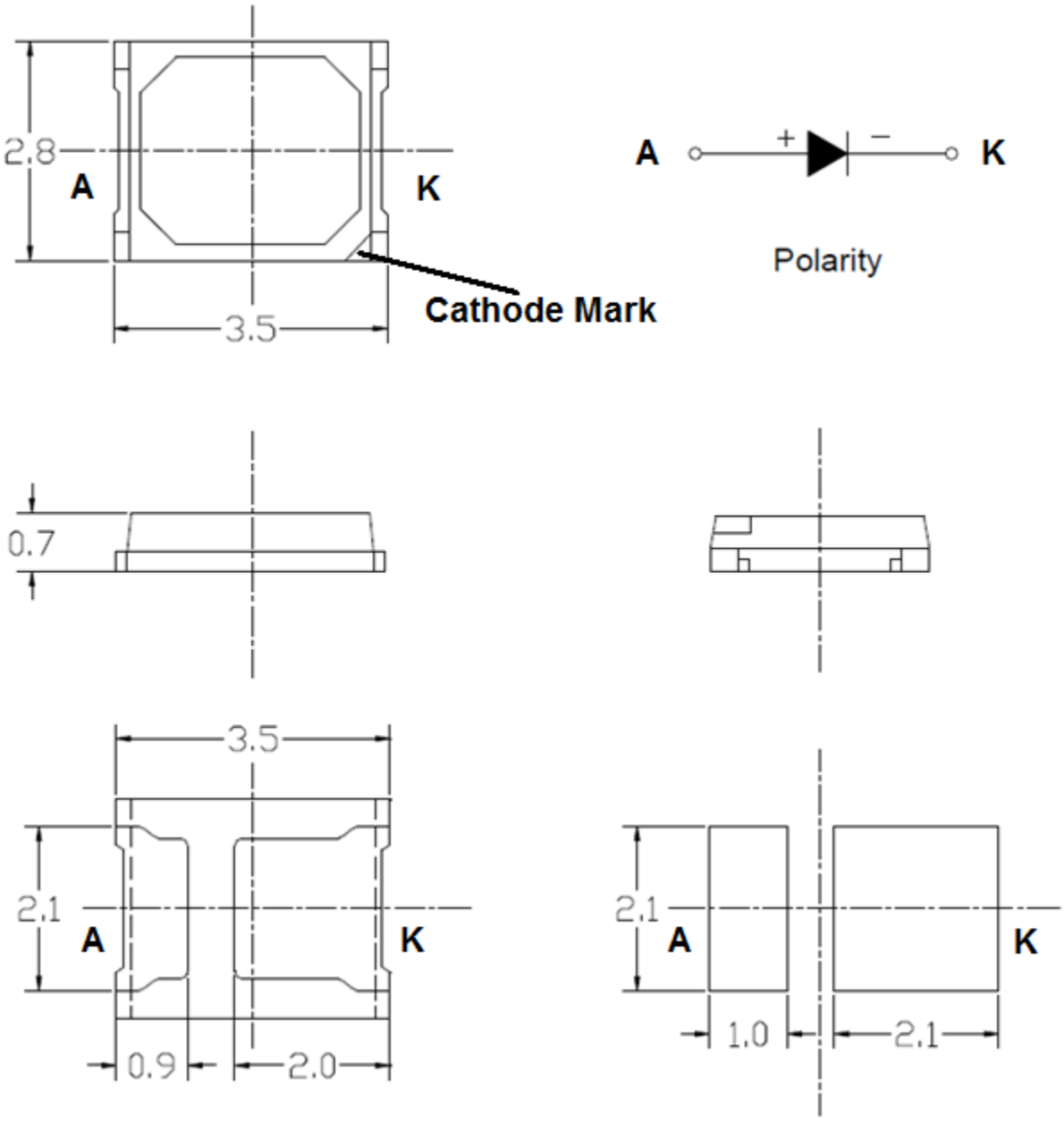


Figure 6. Mechanical Drawing & Soldering Pattern of the 2835 package

1. All dimensions units are millimeters.
2. All dimensions tolerances are ±0.2mm unless otherwise stated.

Reflow Soldering Profile

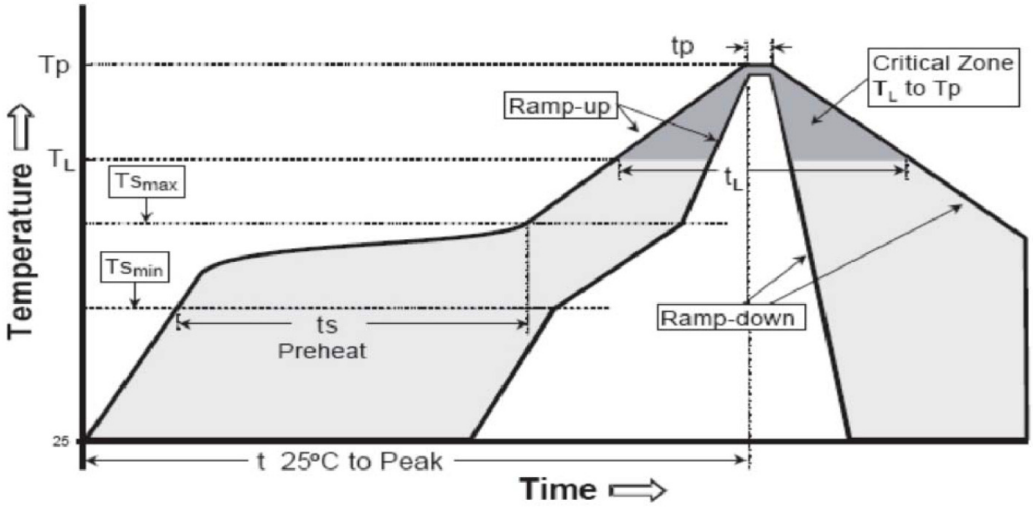


Figure 7. Reflow soldering profile

1. Reflow soldering should not be done more than twice
2. When soldering, do not put stress on the LEDs during heating

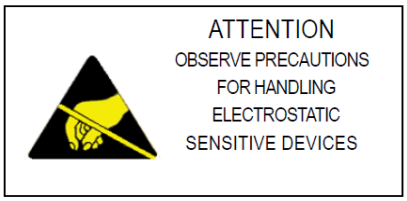
Soldering iron

1. When hand soldering, the temperature of the iron must be ≤+300ºC for 3 seconds
2. Hand soldering should be performed only once.

Handling Instructions

Plessey LEDs are not designed to operate with reverse bias.

Precautions are required to prevent reverse bias in applications and during handling.



Moisture Sensitivity

To avoid the moisture penetration, store in a dry box with a desiccant. The recommended storage temperature range is 5℃ to 30℃ and a maximum humidity of RH50%. If the color of the desicant changes, components should be dried for 10-12hr at 60±5℃.

Packing Information

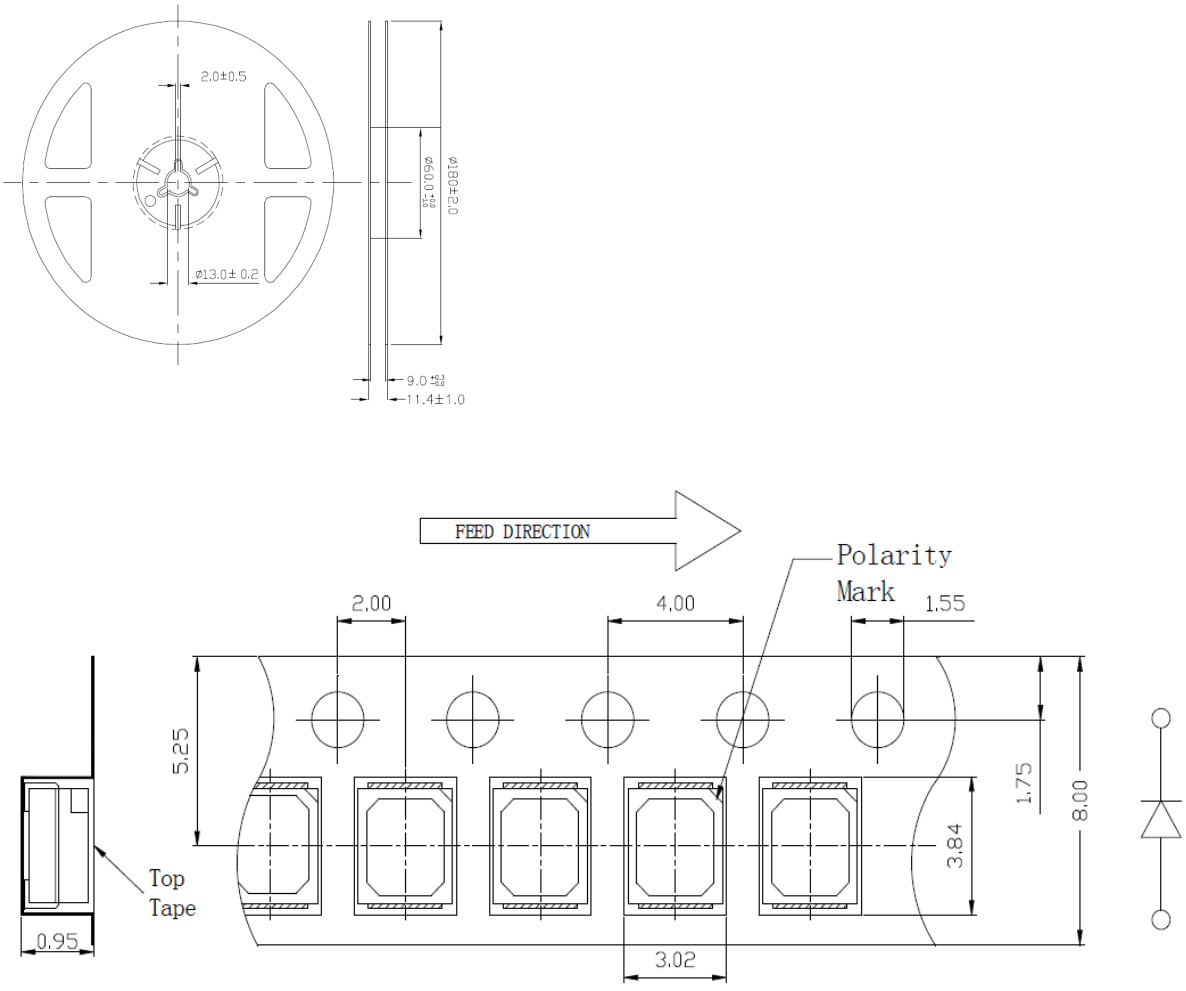


Figure 8. Reel Specification (units in mm)

Legal Notice

Contact

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