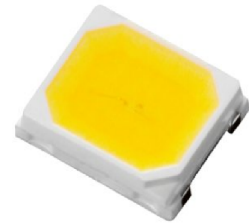


2835 LED

PLW2835BA Series

Product Datasheet



Description

Plessey PLW2835BA 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.
PLW2835BA-2700	Warm White 2700K	2580K	2900K
PLW2835BA-3000	Warm White 3000K	2750K	3150K
PLW2835BA-4000	Neutral White 4000K	3700K	4400K
PLW2835BA-5000	Cool White 5000K	4600K	5450K
PLW2835BA-6500	Cool White 6500K	5800K	7300K

Absolute Maximum Ratings

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

Parameter	Symbol	Minimum	Maximum	Unit
DC Forward Current	I _F	-	65	mA
Peak Pulse Forward Current ^[1]	I _{FP}	-	120	mA
Power Dissipation	P _d	-	210	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 = 60mA	2.8	3.1	3.4	V
Reverse Current	I _R	V _R = 5V	-	-	10	μA
Colour Rendering Index	CRI	I _F = 60mA	80	82	84	%
Thermal Resistance	R _{thj-sp}		-	50	-	°C/W
Half-Intensity Angle	2θ _{1/2}	I _F = 60mA	-	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
PLW2835BA-2700	PLW2835BAW27000	1A, 2A, 3A	V1-V6
PLW2835BA-3000	PLW2835BAW30000		
PLW2835BA-4000	PLW2835BAN40000	2A, 3A, 4A	
PLW2835BA-5000	PLW2835BAC50000		
PLW2835BA-6500	PLW2835BAC65000		

Intensity Bin Groups

$I_F = 60\text{mA}$, $T_{\text{amb}} = +25^\circ\text{C}$, unless otherwise stated

Group	Luminous flux ^[1] (lm)	
	Min.	Max.
1A	20	22
2A	22	24
3A	24	26
4A	26	28

^[1] Tolerance $\pm 10\%$

Forward Voltage Bin Groups

$I_F = 60\text{mA}$, $T_{\text{amb}} = +25^\circ\text{C}$, 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 $\pm 0.1\text{V}$

Chromaticity Binning

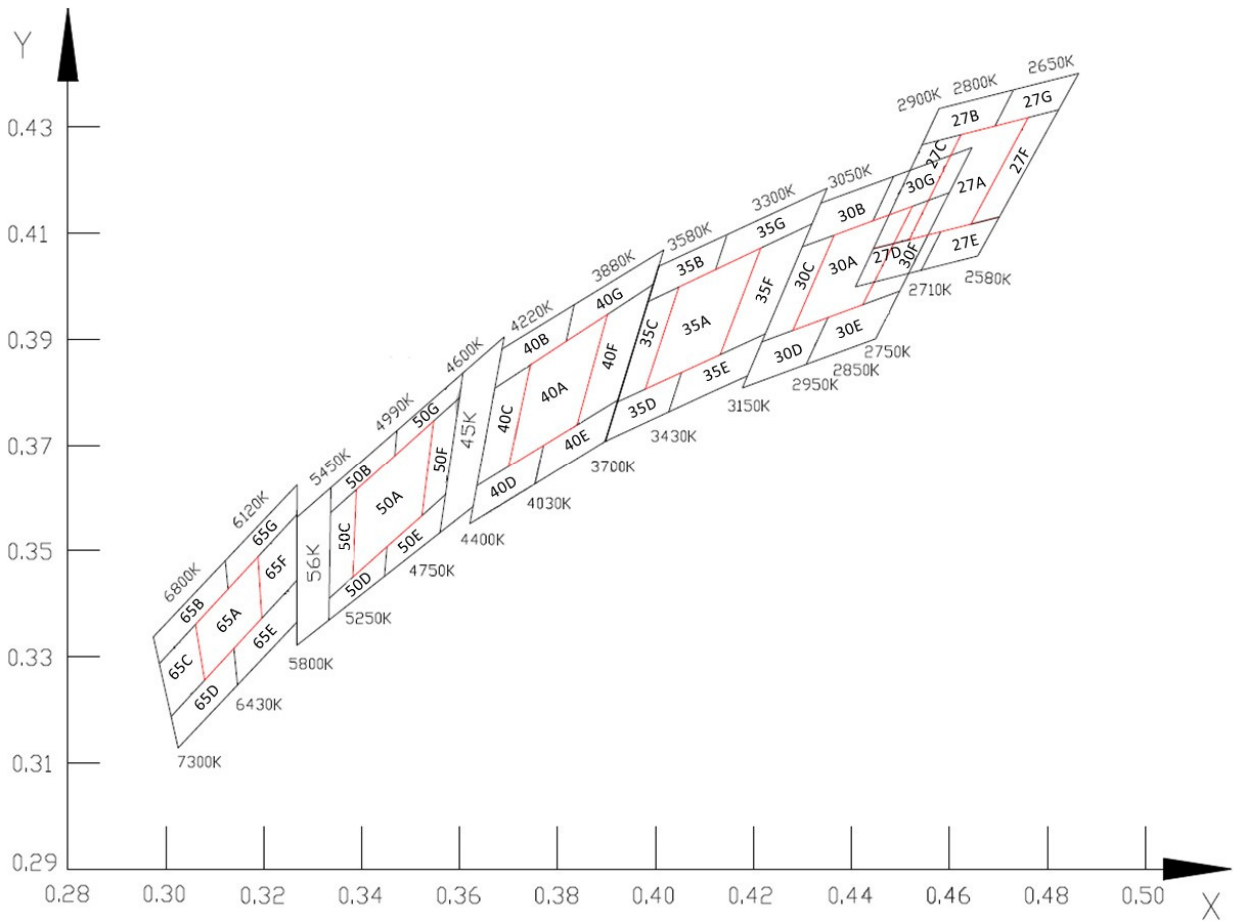


Figure 1. Colour Chromaticity Binning

	X1	Y1	X2	Y2	X3	Y3	X4	Y4
65A	0.3061	0.3361	0.3188	0.3488	0.3196	0.3372	0.3079	0.3255
50A	0.3389	0.3615	0.3547	0.3746	0.3523	0.3566	0.3382	0.345
40A	0.3745	0.3852	0.3902	0.3947	0.384	0.3739	0.37	0.366
35A	0.4048	0.3999	0.4215	0.4072	0.4132	0.3871	0.3979	0.3806
30A	0.4365	0.4096	0.4525	0.4151	0.4423	0.3965	0.428	0.3917
27A	0.4624	0.4285	0.4761	0.4318	0.4644	0.4117	0.4518	0.4088

	X1	Y1	X2	Y2	X3	Y3	X4	Y4
65B	0.2975	0.3337	0.3121	0.3481	0.3127	0.3427	0.2987	0.3287
65C	0.2987	0.3287	0.3061	0.3361	0.3079	0.3255	0.3011	0.3187
65D	0.3011	0.3187	0.3139	0.3315	0.3146	0.3247	0.3025	0.3128
65E	0.3139	0.3315	0.3268	0.3444	0.3267	0.3365	0.3146	0.3247
65F	0.3196	0.3372	0.3188	0.3488	0.3268	0.3568	0.3268	0.3444
65G	0.3121	0.3481	0.3268	0.3624	0.3268	0.3568	0.3127	0.3427
50B	0.3337	0.3619	0.3472	0.3728	0.3468	0.368	0.3336	0.3571
50C	0.3336	0.3571	0.3389	0.3615	0.3382	0.345	0.3334	0.341
50D	0.3334	0.341	0.3452	0.3507	0.3447	0.3451	0.3333	0.3369
50E	0.3452	0.3507	0.3571	0.3606	0.356	0.3534	0.3447	0.3451
50F	0.3547	0.3746	0.36	0.379	0.3571	0.3606	0.3523	0.3566
50G	0.3472	0.3728	0.3607	0.3837	0.36	0.379	0.3468	0.368
40B	0.3686	0.3882	0.3834	0.3965	0.3818	0.3896	0.3672	0.3808
40C	0.3672	0.3808	0.3745	0.3852	0.37	0.366	0.3635	0.3623
40D	0.3635	0.3623	0.3771	0.37	0.3754	0.3626	0.3621	0.3551
40E	0.3771	0.37	0.3923	0.3786	0.3897	0.3707	0.3754	0.3626
40F	0.3902	0.3947	0.3995	0.4004	0.3923	0.3786	0.384	0.3739
40G	0.3834	0.3965	0.4017	0.4069	0.3995	0.4004	0.3818	0.3896
35B	0.4007	0.4038	0.4145	0.4096	0.4122	0.4031	0.3984	0.3971
35C	0.3984	0.3971	0.4048	0.3999	0.3979	0.3806	0.3922	0.3782
35D	0.3922	0.3782	0.4053	0.3837	0.4026	0.3763	0.3897	0.3707
35E	0.4053	0.3837	0.4224	0.391	0.4188	0.3831	0.4026	0.3763
35F	0.4215	0.4072	0.432	0.4118	0.4224	0.391	0.4132	0.3871
35G	0.4145	0.4096	0.435	0.4185	0.432	0.4118	0.4122	0.4031
30B	0.4337	0.4157	0.4486	0.4207	0.4444	0.4123	0.43	0.4074
30C	0.43	0.4074	0.4365	0.4096	0.428	0.3917	0.4217	0.3895
30D	0.4217	0.3895	0.4352	0.3941	0.4308	0.3853	0.4177	0.3809
30E	0.4352	0.3941	0.4498	0.3991	0.445	0.3901	0.4308	0.3853
30F	0.4525	0.4151	0.46	0.4176	0.4498	0.3991	0.4423	0.3965
30G	0.4486	0.4207	0.4646	0.4261	0.46	0.4176	0.4444	0.4123
27B	0.4579	0.4335	0.473	0.4369	0.4693	0.4302	0.4544	0.4267
27C	0.4544	0.4267	0.4624	0.4285	0.4518	0.4088	0.4445	0.4071
27D	0.4445	0.4071	0.4583	0.4103	0.4542	0.4029	0.4408	0.3999
27E	0.4583	0.4103	0.4702	0.413	0.4658	0.4057	0.4542	0.4029
27F	0.4761	0.4318	0.4823	0.4333	0.4702	0.413	0.4644	0.4117
27G	0.473	0.4369	0.4864	0.4401	0.4823	0.4333	0.4693	0.4302
56K	0.3268	0.3563	0.3337	0.3619	0.3333	0.3369	0.3267	0.3321
45K	0.3607	0.3837	0.3691	0.3905	0.3627	0.3583	0.356	0.3534

Relative Spectral Emission

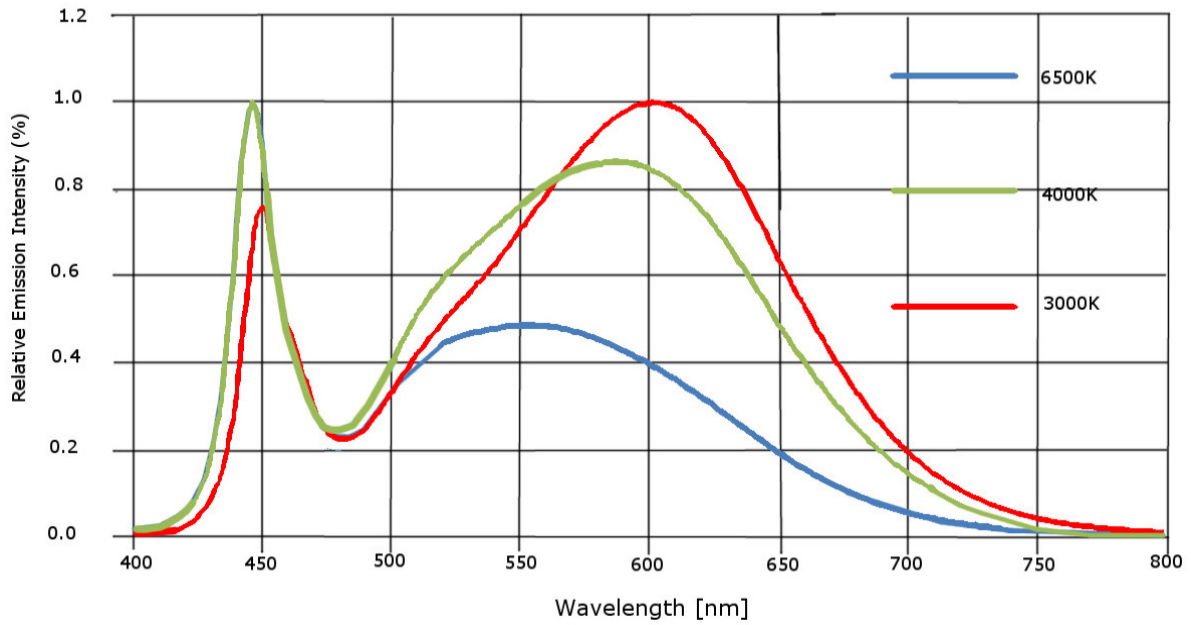


Figure 2. Normalised spectral power distribution

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

Forward Current Characteristics

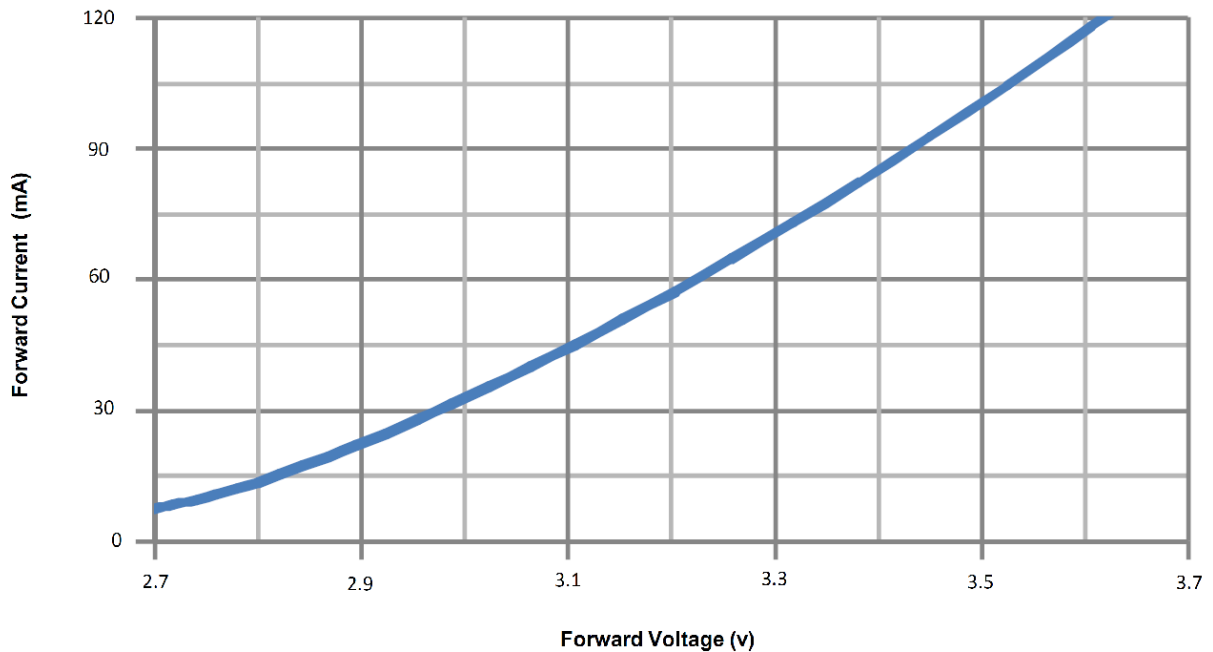


Figure 3. Typical forward current versus forward voltage ($T_a=+25C$)

Forward Current Characteristics (Continued)

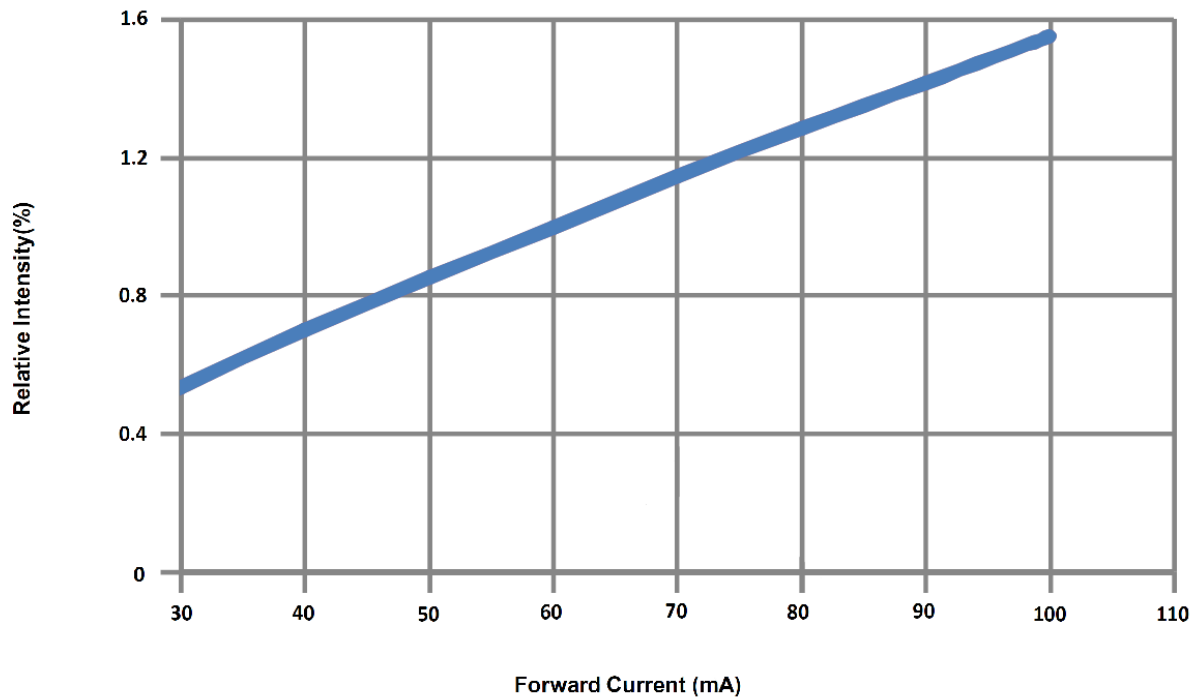


Figure 4. Relative luminous flux versus forward current ($T_a=+25C$)

Temperature Characteristics

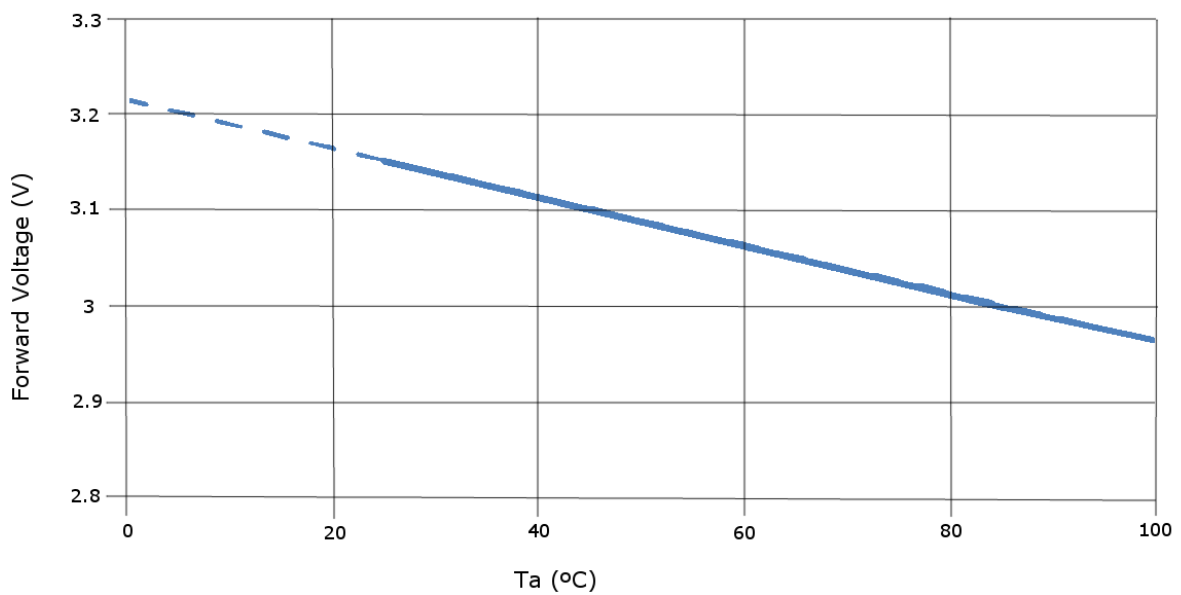


Figure 5. Typical forward voltage versus ambient temperature ($I_F=60mA$)

Temperature Characteristics

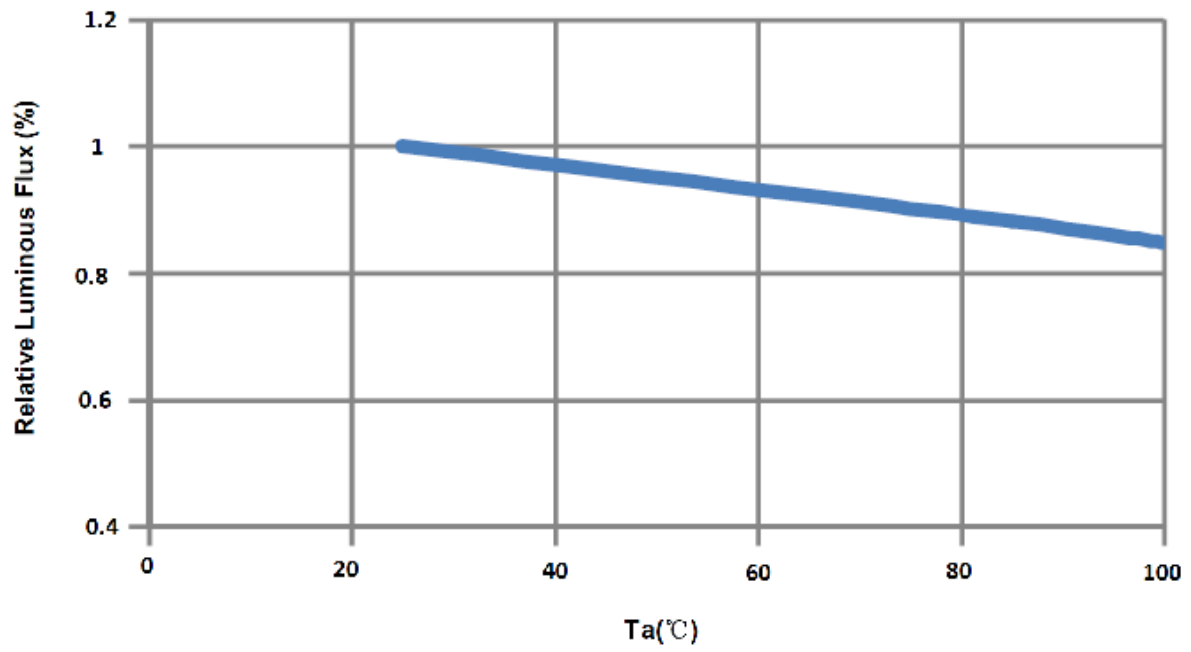


Figure 6. Ambient Temperature vs Relative Luminous Flux

Package Outline Dimensions & Soldering Pattern

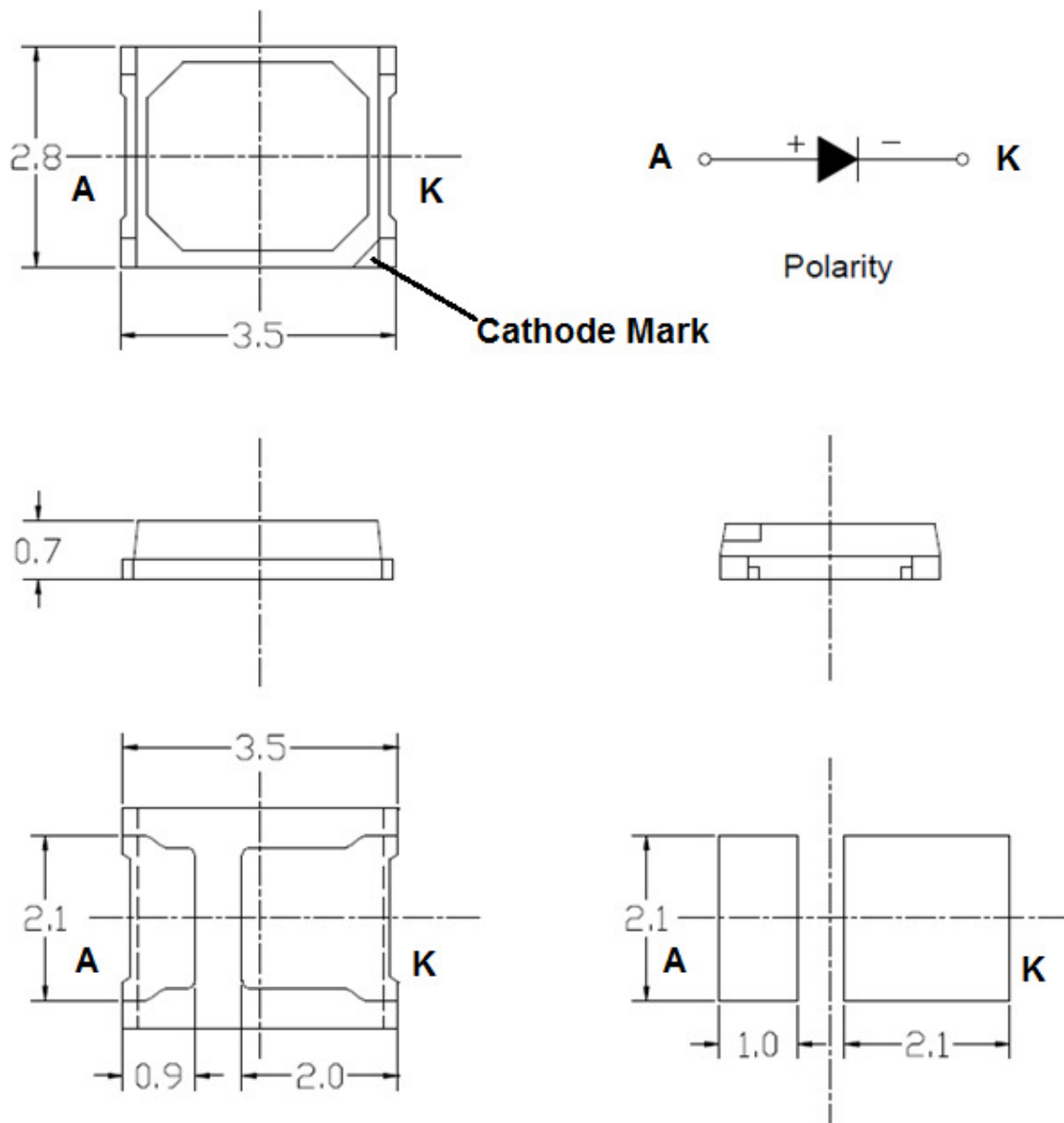


Figure 7. Mechanical Drawing & Soldering Pattern of the 2835 package

1. All dimensions units are millimeters.
2. All dimensions tolerances are $\pm 0.2\text{mm}$ unless otherwise stated.

Reflow Soldering Profile

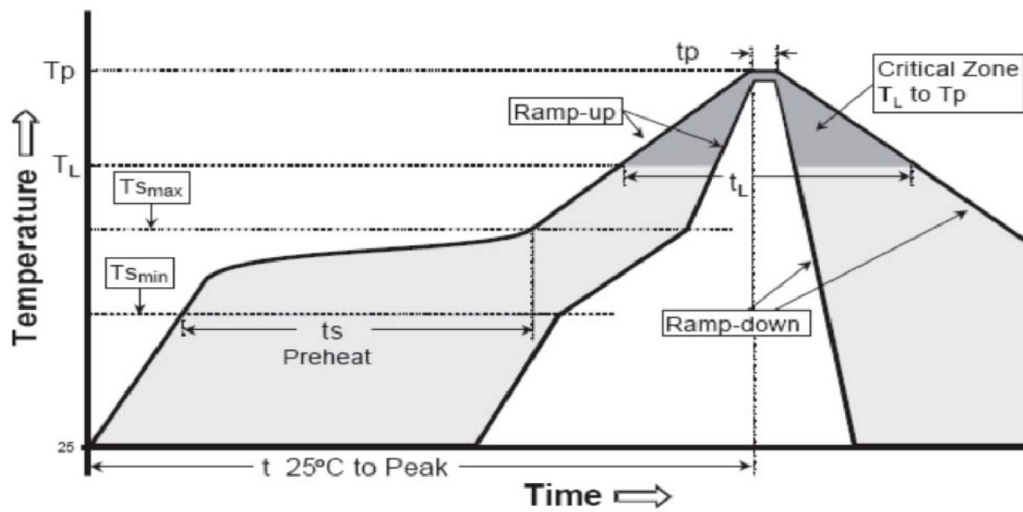


Figure 8. Reflow soldering profile

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

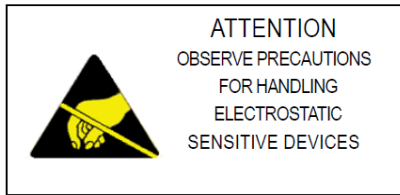
Soldering iron

1. When hand soldering, the temperature of the iron must be $\leq +300^\circ\text{C}$ 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

JEDEC Level	Floor life		Bake	
	Time	Conditions	Time	Conditions
2	1 year	≤+30°C / 60% RH	≥12 hours	+60°C ±5°C / 5% RH

Packing Information

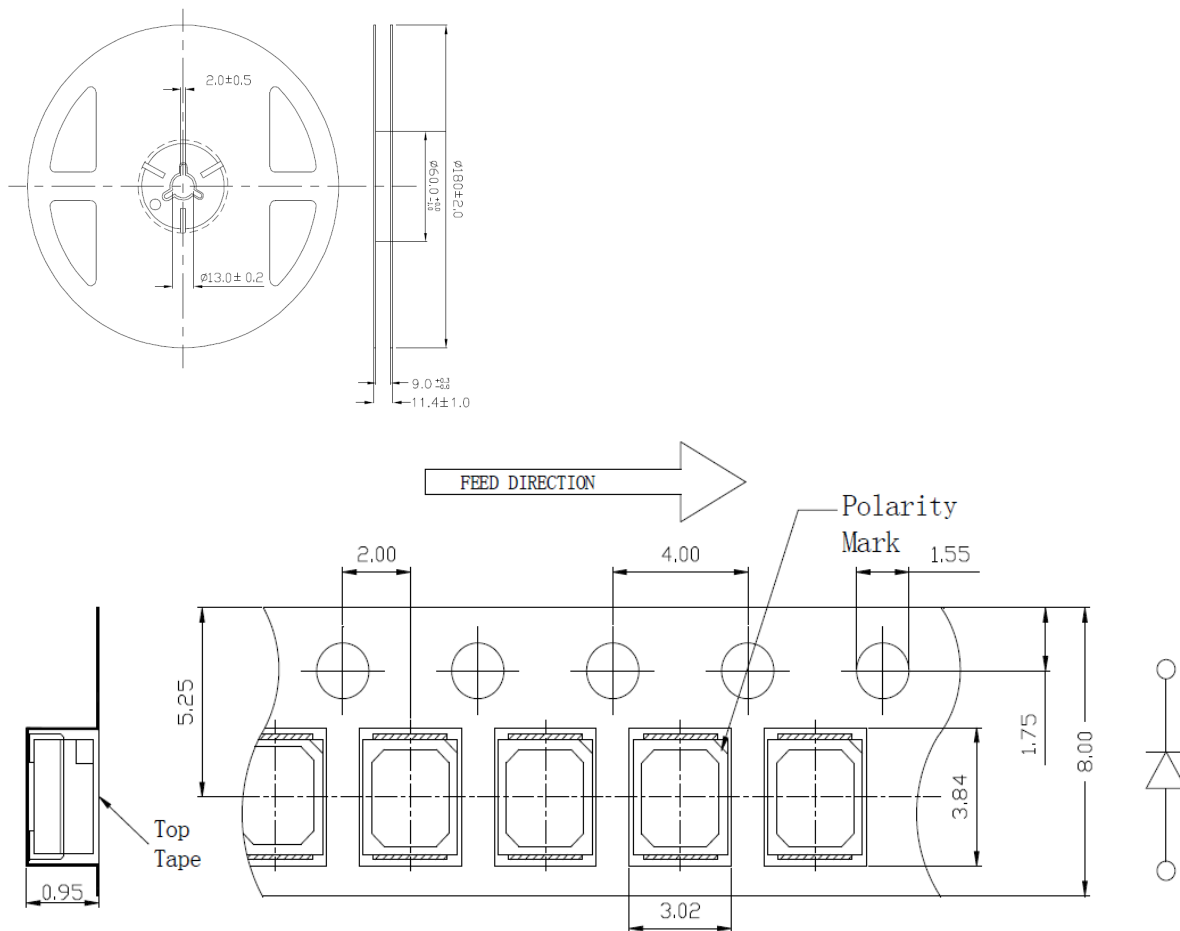


Figure 9. Reel Specification (units in mm)

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Contact

Customer Support

+44 1752 693000 | support@plesseysemi.com

www.plesseysemi.com

Plessey Semiconductors Ltd | Plymouth
Tamerton Road, Roborough
Plymouth, Devon
PL6 7BQ United Kingdom

P: +44 1752 693000

F: +44 1752 693700