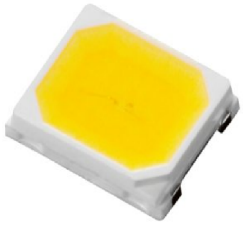
2835 LED
PLW2835AB Series
Product Datasheet



Description

Plessey PLW2835AB 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)
- High reliability PLCC-2 packaging
- 120 degree wide viewing angle
- LM80 certified
- RoHS compliant
- 3SDCM and Full Distribution available

Applications

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

Variant	Colour	CCT	
		Min.	Max.
3 SDCM			
PLW2835AB-2700-3	Warm White 2700K	2600K	2800K
PLW2835AB-3000-3	Warm White 3000K	2800K	3100K
PLW2835AB-3400-3	Neutral White 3400K	3250K	3650K
PLW2835AB-4000-3	Neutral White 4000K	3800K	4250K
PLW2835AB-5000-3	Cool White 5000K	4750K	5300K
PLW2835AB-6500-3	Cool White 6500K	6000K	7000K
Full distribution			
PLW2835AB-3000-F	Warm White 3000K	2800K	3100K
PLW2835AB-4000-F	Neutral White 4000K	3800K	4250K
PLW2835AB-5000-F	Cool White 5000K	4750K	5300K
PLW2835AB-6000-F	Cool White 6000K	5620K	6500K

Absolute Maximum Ratings

T_{amb} = +25ºC unless otherwise stated

Parameter	Symbol	Minimum	Maximum	Unit
DC Forward Current	I_F	-	180	mA
Peak Pulse Forward Current[1]	I_{FP}	-	200	mA
Power Dissipation	P_d	-	612	mW
Storage Temperature	T_{stg}	-40	+100	ºC
Junction Temperature	T_j		+125	ºC

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

Electro-optical Characteristics

T_{amb} = +25ºC unless otherwise stated

Parameter	Symbol	Condition	Min.	Typ.	Max.	Unit
Forward Voltage	V_F	I_F = 150mA	2.8	-	3.4	V
Reverse Current	I_R	V_R = 5V	-	-	10	µA
Colour Rendering Index	CRI	I_F = 150mA	80	-	-	%
Thermal Resistance	$R_{thj\text{-}sp}$	IF = 150mA	-	25	-	ºC/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	ºC

Ordering Information

Name	Order Code	Luminous Flux Range	Forward Voltage Range
PLW2835AB-2700-3	PLW2835ABW27000	3A, 4A, 5A	V1-V6
PLW2835AB-3000-3	PLW2835ABW30000		
PLW2835AB-3000-F	PLW2835ABW30001		
PLW2835AB-3400-3	PLW2835ABW34000		
PLW2835AB-4000-3	PLW2835ABN40000	4A, 5A, 6A	
PLW2835AB-4000-F	PLW2835ABN40001		
PLW2835AB-5000-3	PLW2835ABC50000		
PLW2835AB-5000-F	PLW2835ABC50001		
PLW2835AB-6500-3	PLW2835ABC65000		
PLW2835AB-6000-F	PLW2835ABC60001		

Intensity Bin Groups

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

Group	Luminous flux [1] (lm)	
	Min.	Max.
3A	55	60
4A	60	65
5A	65	70
6A	70	75

[1] Tolerance ±10%

Forward Voltage Bin Groups

I_F = 150mA, T_{amb} = +25°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 ±0.1V

Chromaticity Binning

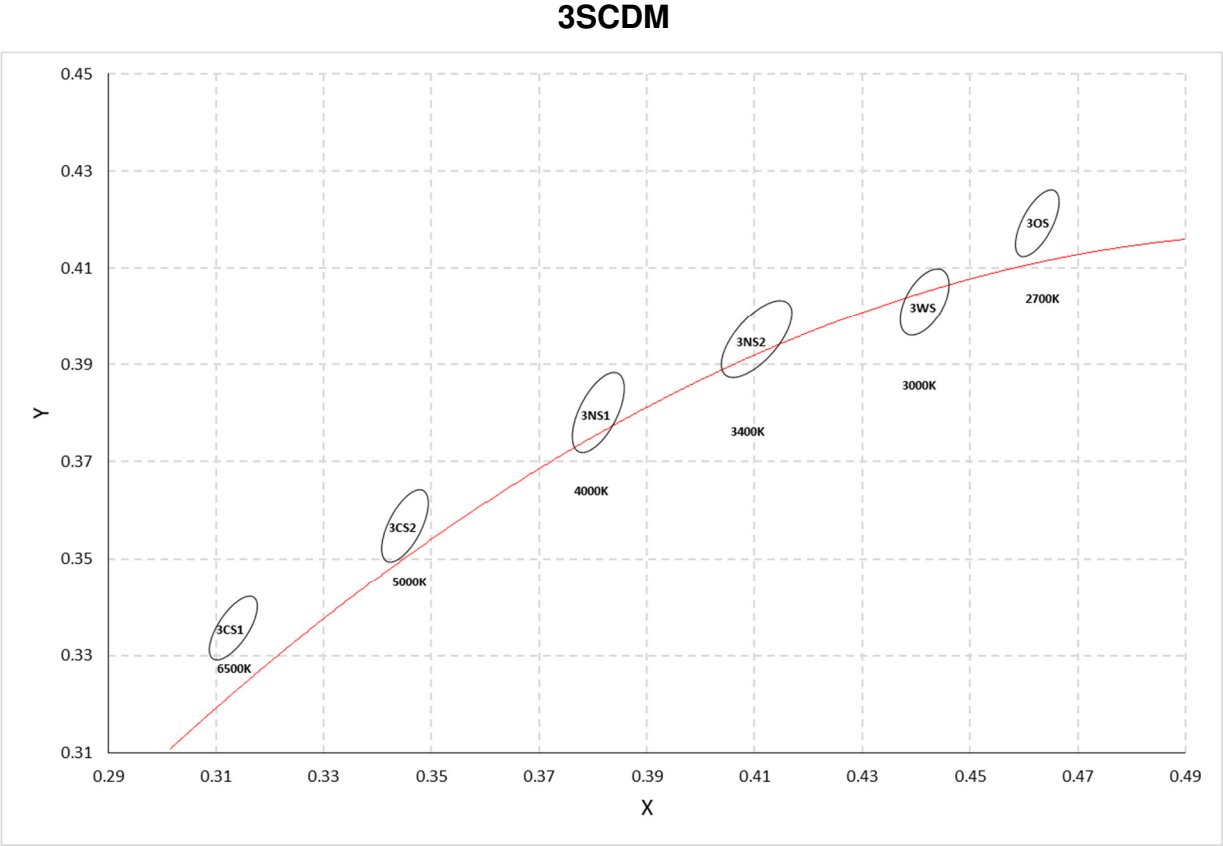


Figure 1a. 3SDCM Colour Chromaticity Binning

Chromaticity Tolerance: ±0.003

Variant	Bin	CCT	
		x	y
PLW2835AB-2700-3	3OS	0.463	0.420
PLW2835AB-3000-3	3WS	0.440	0.403
PLW2835AB-3400-3	3NS2	0.409	0.394
PLW2835AB-4000-3	3NS1	0.380	0.380
PLW2835AB-5000-3	3CS2	0.346	0.359
PLW2835AB-6500-3	3CS1	0.313	0.337

Full Distribution

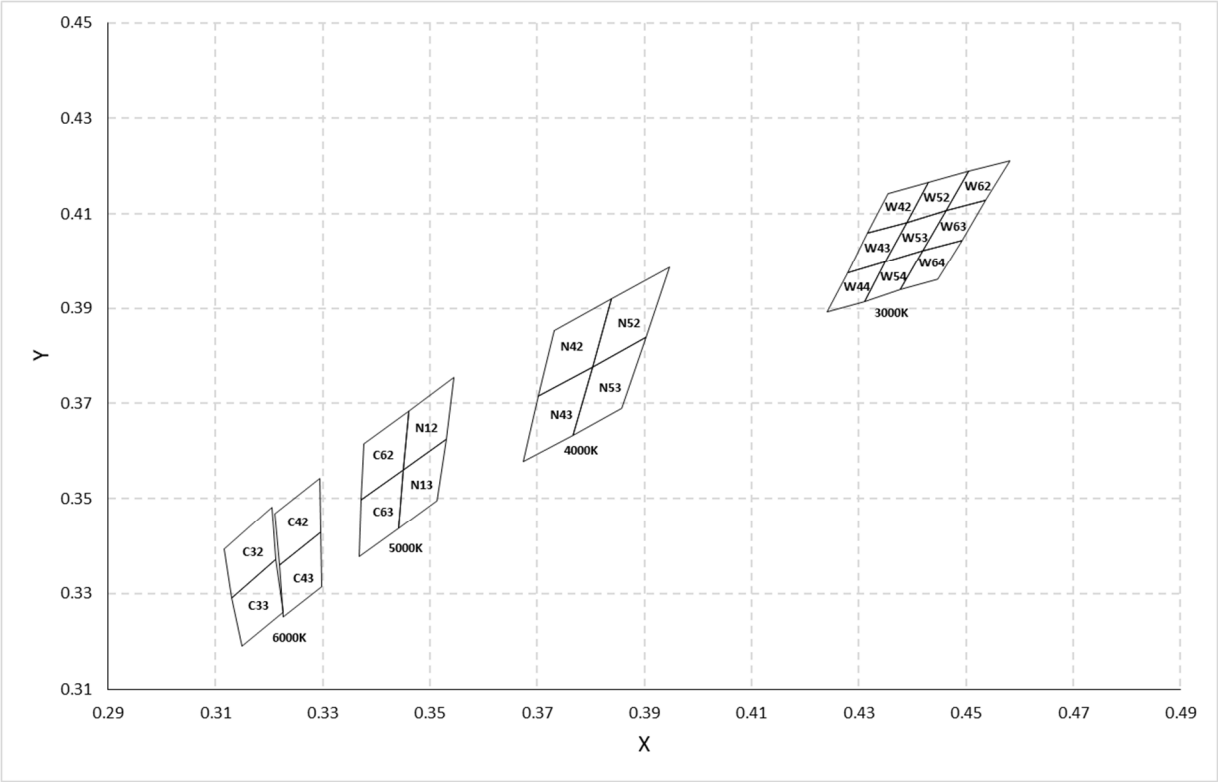


Figure 1b. Full Distribution Colour Chromaticity Binning

Chromaticity Tolerance: ±0.003

	x	y		x	y		x	y
W44	0.4279	0.3975	W52	0.4430	0.4165	W64	0.4420	0.4022
	0.4350	0.3998		0.4505	0.4189		0.4492	0.4045
	0.4310	0.3915		0.4463	0.4106		0.4447	0.3962
	0.4241	0.3892		0.4390	0.4082		0.4378	0.3939
W43	0.4316	0.4059	W53	0.4390	0.4082	W63	0.4463	0.4106
	0.4390	0.4082		0.4463	0.4106		0.4536	0.4129
	0.4350	0.3998		0.4420	0.4022		0.4492	0.4045
	0.4279	0.3975		0.4350	0.3998		0.4420	0.4022
W42	0.4354	0.4142	W54	0.4350	0.3998	W62	0.4505	0.4189
	0.4430	0.4165		0.4420	0.4022		0.4581	0.4212
	0.4390	0.4082		0.4378	0.3939		0.4536	0.4129
	0.4316	0.4059		0.4310	0.3915		0.4463	0.4106

	x	y		x	y		x	y
N43	0.3703	0.3716	C63	0.3372	0.3497	C33	0.3213	0.3371
	0.3803	0.3777		0.3451	0.3561		0.3131	0.3290
	0.3767	0.3634		0.3441	0.3437		0.3150	0.3190
	0.3675	0.3578		0.3368	0.3378		0.3226	0.3262
N42	0.3731	0.3853	C62	0.3376	0.3616	C32	0.3205	0.3481
	0.3839	0.3920		0.3461	0.3685		0.3117	0.3393
	0.3803	0.3777		0.3451	0.3561		0.3131	0.3290
	0.3703	0.3716		0.3372	0.3497		0.3213	0.3371
N52	0.3839	0.3920	N12	0.3461	0.3685	C42	0.3211	0.3468
	0.3947	0.3987		0.3545	0.3754		0.3294	0.3542
	0.3903	0.3839		0.3530	0.3625		0.3296	0.3429
	0.3803	0.3777		0.3451	0.3561		0.3219	0.3360
N53	0.3803	0.3777	N13	0.3451	0.3561	C43	0.3219	0.3360
	0.3903	0.3839		0.3530	0.3625		0.3296	0.3429
	0.3858	0.3690		0.3514	0.3496		0.3298	0.3315
	0.3767	0.3634		0.3441	0.3437		0.3227	0.3251

Relative Spectral Emission

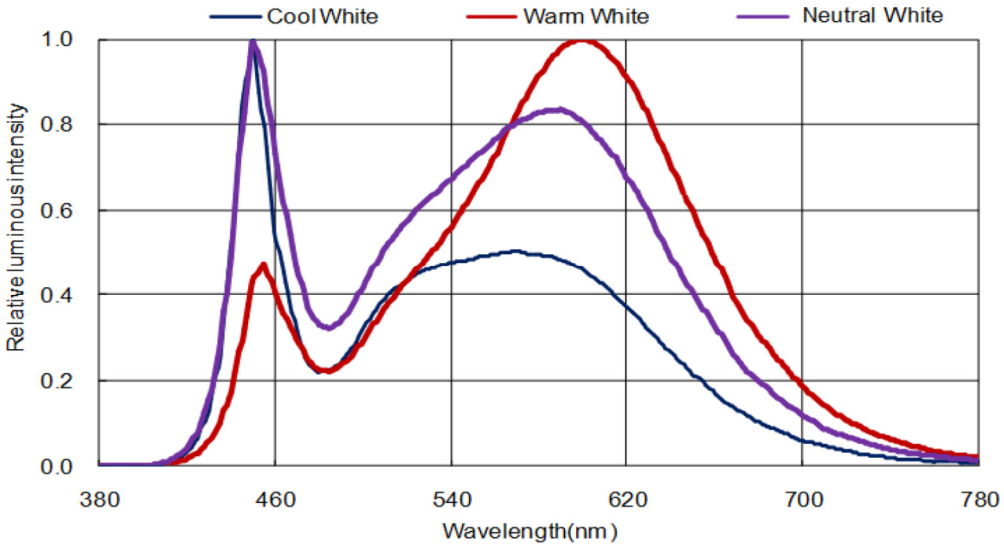


Figure 2a. 3SDCM Normalised spectral power distribution

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

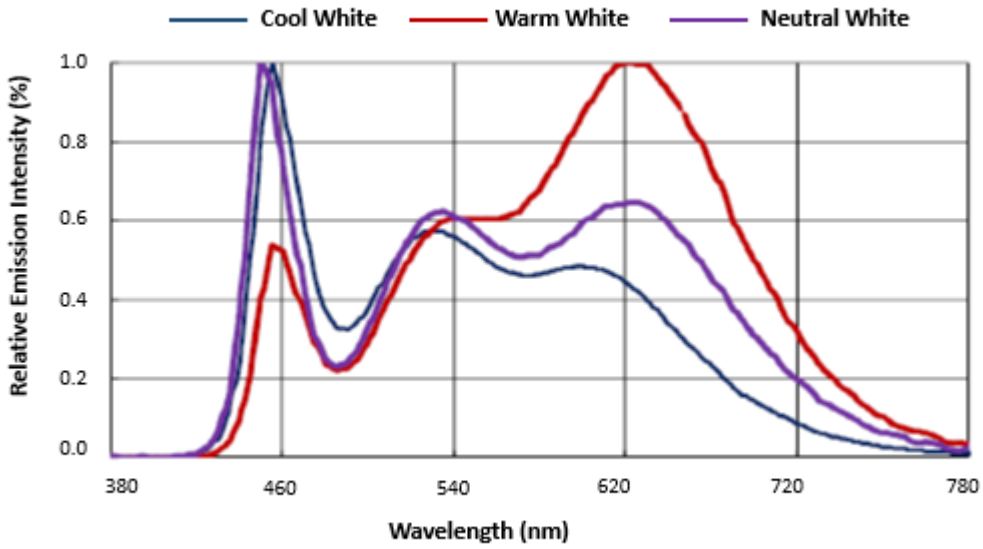


Figure 2b. Full Distribution Normalised spectral power distribution

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

Angular Light Distribution

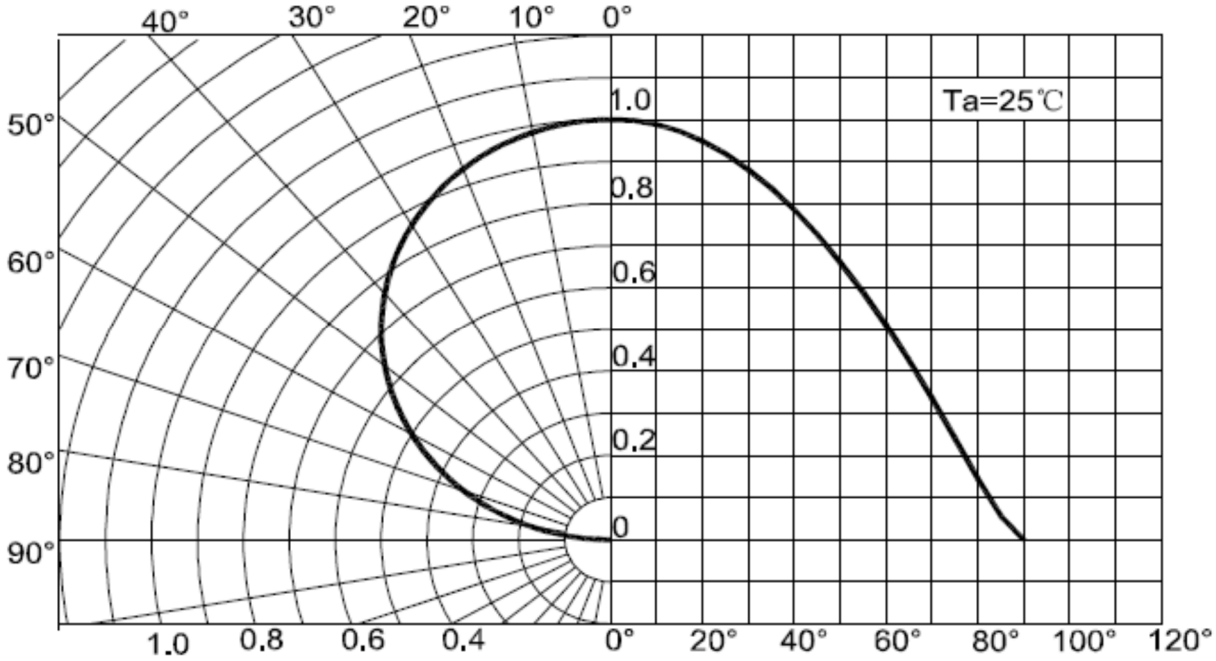


Figure 3. Angular distribution pattern of emitted light

Forward Current Characteristics

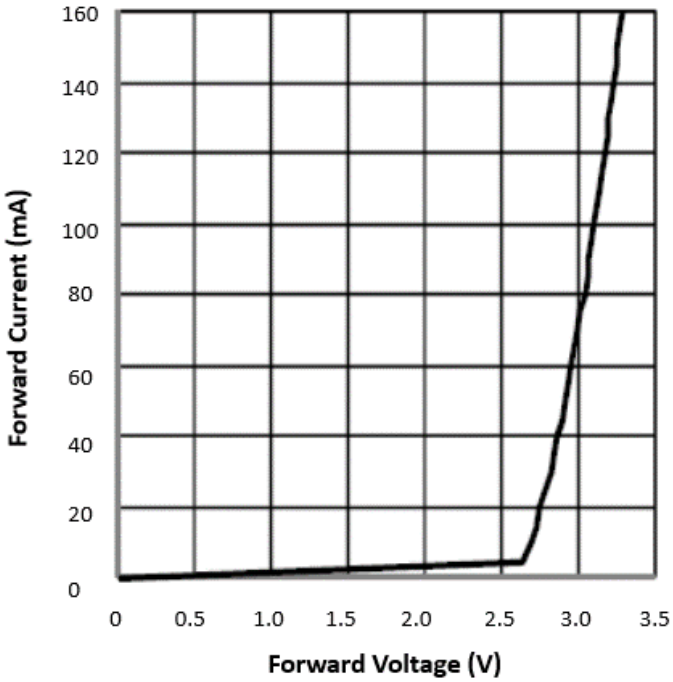


Figure 4. Typical forward current versus forward voltage (T_a=+25C)

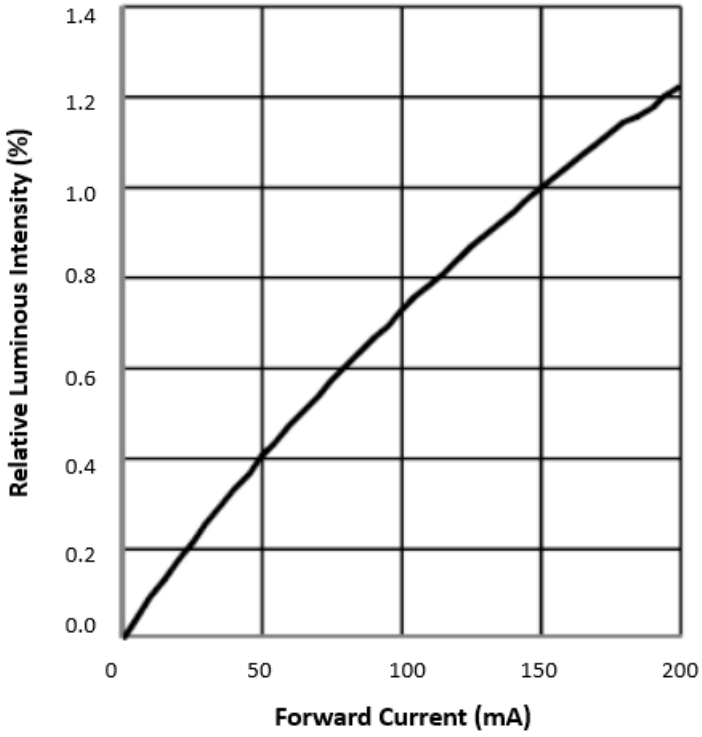


Figure 5. Relative luminous intensity versus forward current (T_a=+25C)

Temperature Characteristics

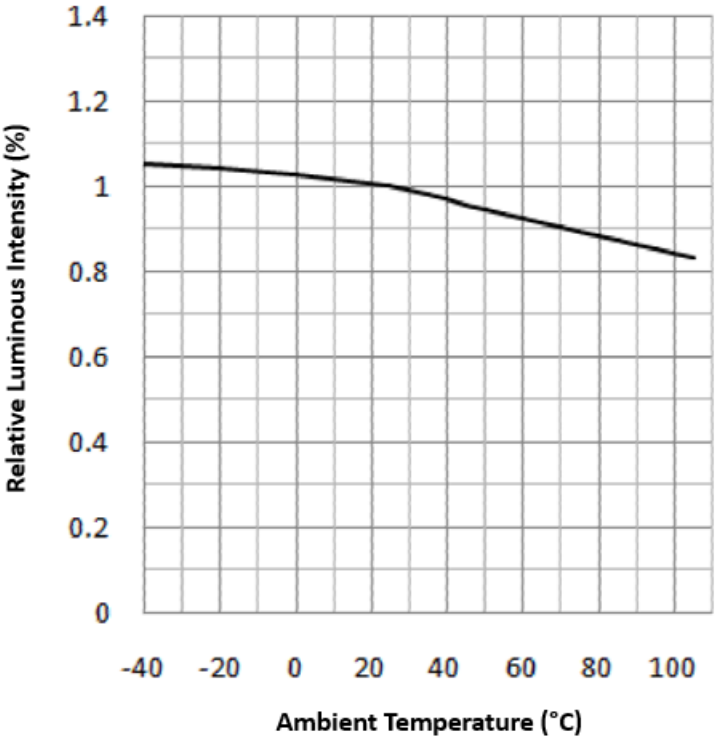


Figure 6. Relative Luminous Intensity versus Ambient Temperature (If=150mA)

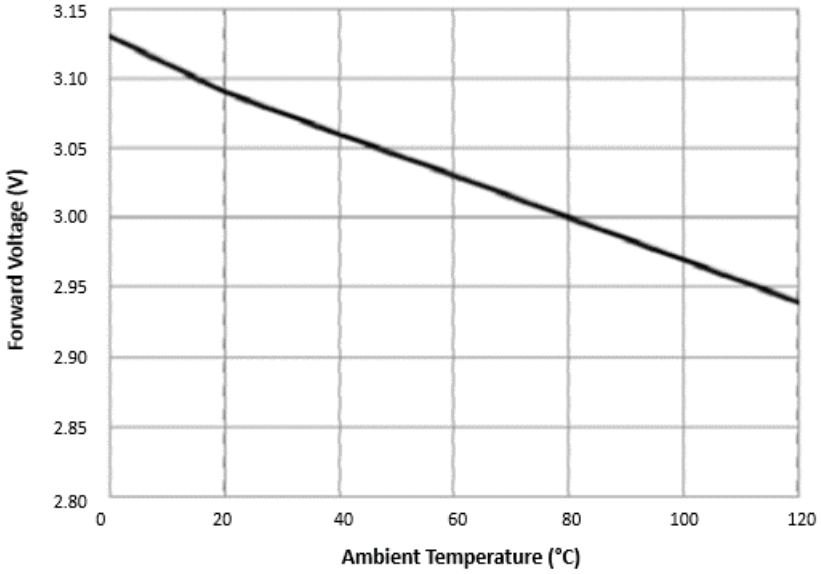


Figure 7: Forward Voltage versus Ambient Temperature (If=150mA)

Package Outline Dimensions & Soldering Pattern

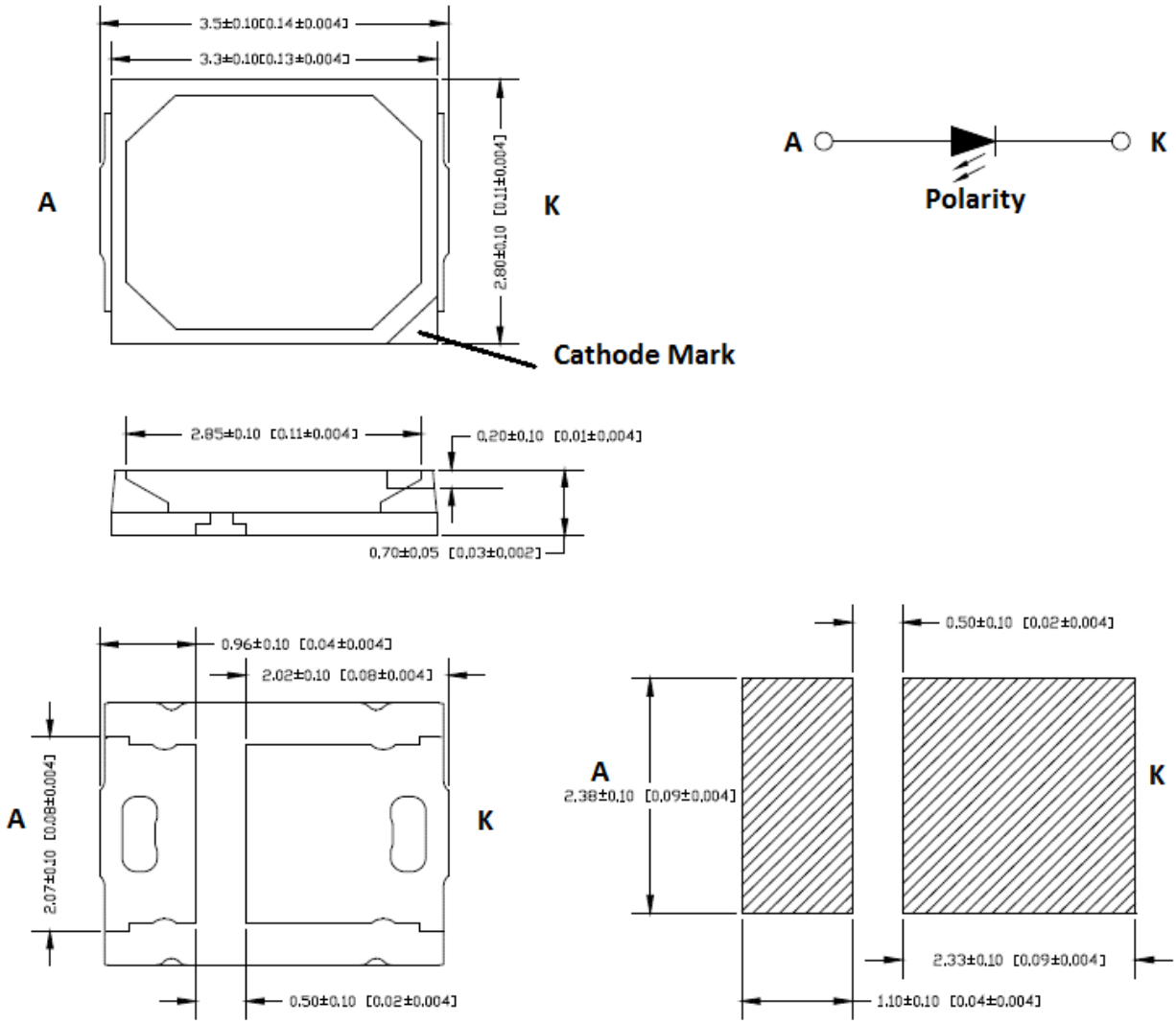


Figure 8. Mechanical Drawing & Soldering Pattern of the 2835 package

1. All dimensions units are millimeters.
2. All dimensions tolerances are ±0.15mm unless otherwise stated.

Reflow Soldering Profile

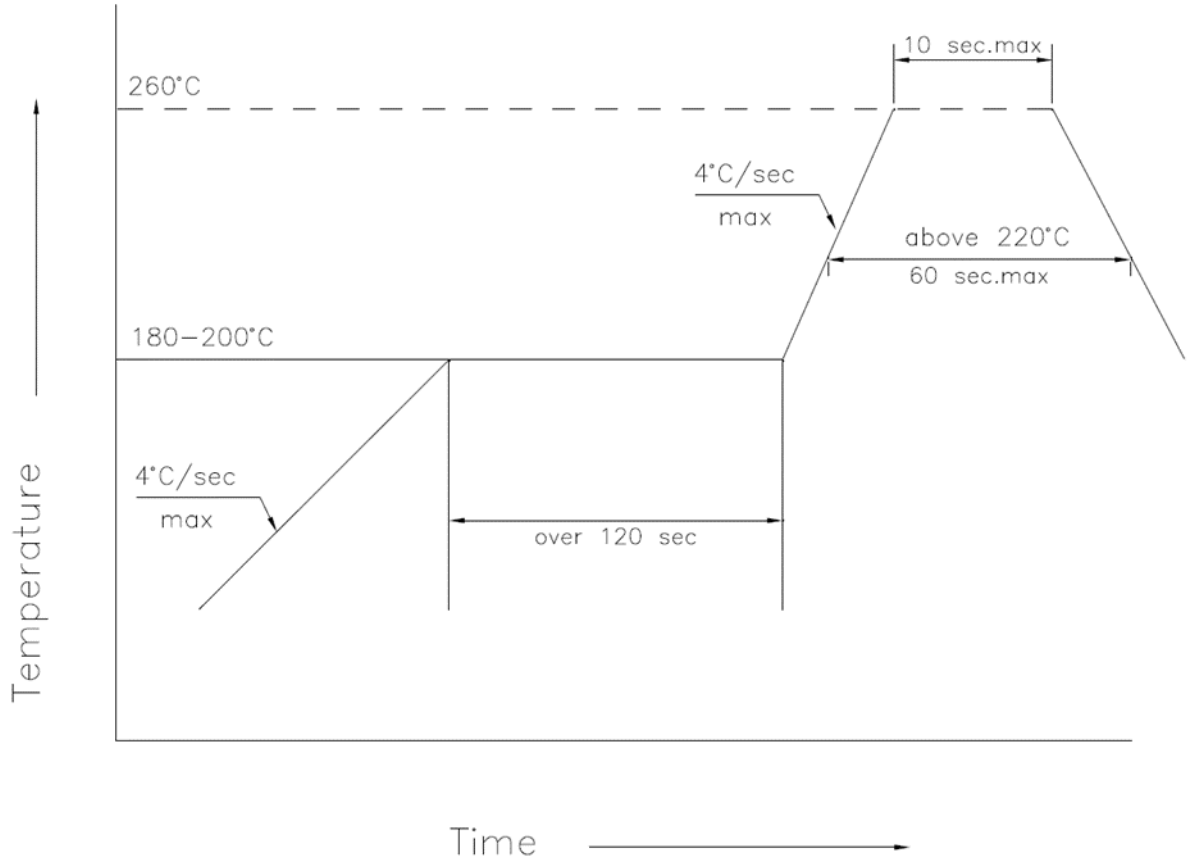


Figure 9. Reflow soldering profile

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

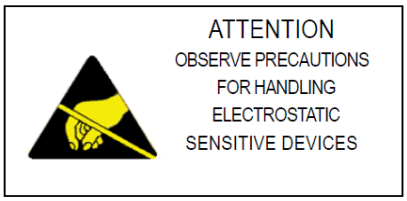
Soldering iron

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

JEDEC Level	Floor life		Soak Requirements	
	Time	Conditions	Time	Conditions
4	72 hours	≤+30°C / 60% RH	96±2 hours	+30°C / 60% RH

Packing Information

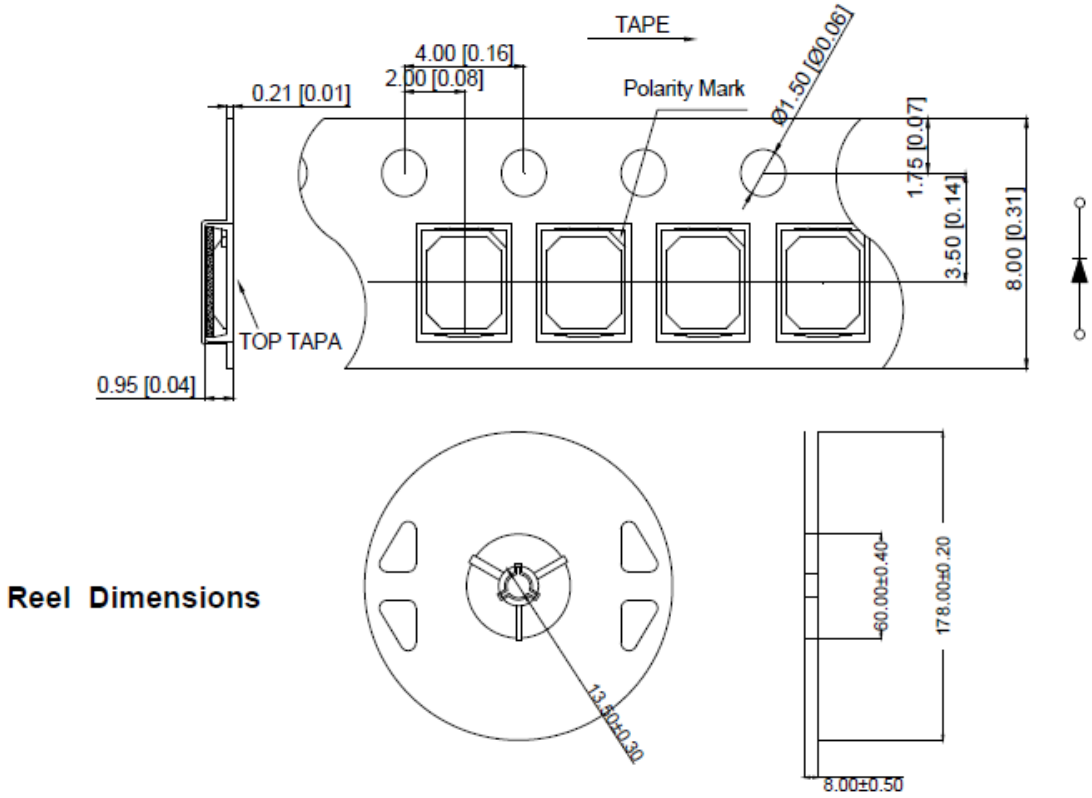


Figure 10. Reel Specification (units in mm)

Legal Notice

Contact

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