PLW2835AB Series 2835
Mid Power LED

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
- 5SDCM

Applications

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

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

Absolute Maximum Ratings

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

Parameter	Symbol	Min.	Max.	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	°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	-	3.4	V
Reverse Current	I_R	V_R = 5V	-	-	10	µA
Colour Rendering Index	CRI	I_F = 150mA	80	-	-	%
Thermal Resistance	$R_{thj\text{-}sp}$	I_F = 150mA	-	25	-	°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	Min.	Max.	Unit
Operating Ambient Temperature	T_{opr}	-40	+85	°C

Ordering Information

Name	Order Code	Min. Flux	Forward Voltage Range
PLW2835AB-2700	PLW2835ABW27000	3A	V1 – V6
PLW2835AB-3000	PLW2835ABW30000	4A	
PLW2835AB-3400	PLW2835ABW34000		
PLW2835AB-4000	PLW2835ABN40000	5A	
PLW2835AB-5000	PLW2835ABC50000		
PLW2835AB-6500	PLW2835ABC65000		

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

Forward Voltage Bin Groups

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

Group	Forward Voltage [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 ±0.1%

Chromaticity Binning

Single 5 step MacAdam ellipses

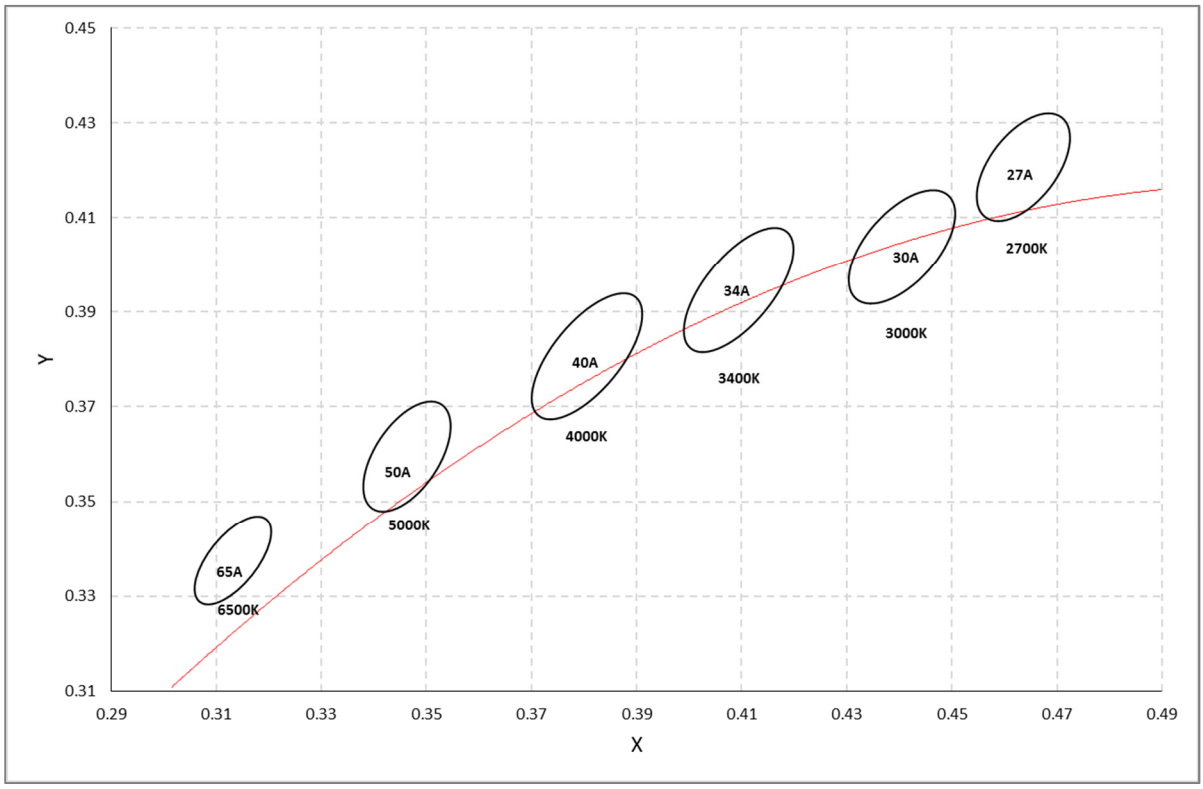


Figure 1: Chromaticity diagram

Nominal CCT (K)	Bin	Centre point		Major Axis		Rotation
		cx	cy	a	b	Θ °
6500	65A	0.313	0.337	0.01115	0.00475	58.23
5000	50A	0.346	0.359	0.01370	0.00590	59.37
4000	40A	0.380	0.380	0.01565	0.00670	54.00
3400	34A	0.409	0.394	0.01585	0.00695	52.58
3000	30A	0.440	0.403	0.01390	0.00680	53.10
2700	27A	0.463	0.420	0.01290	0.00685	53.17

Tolerance ±0.003

Relative Spectral Emission

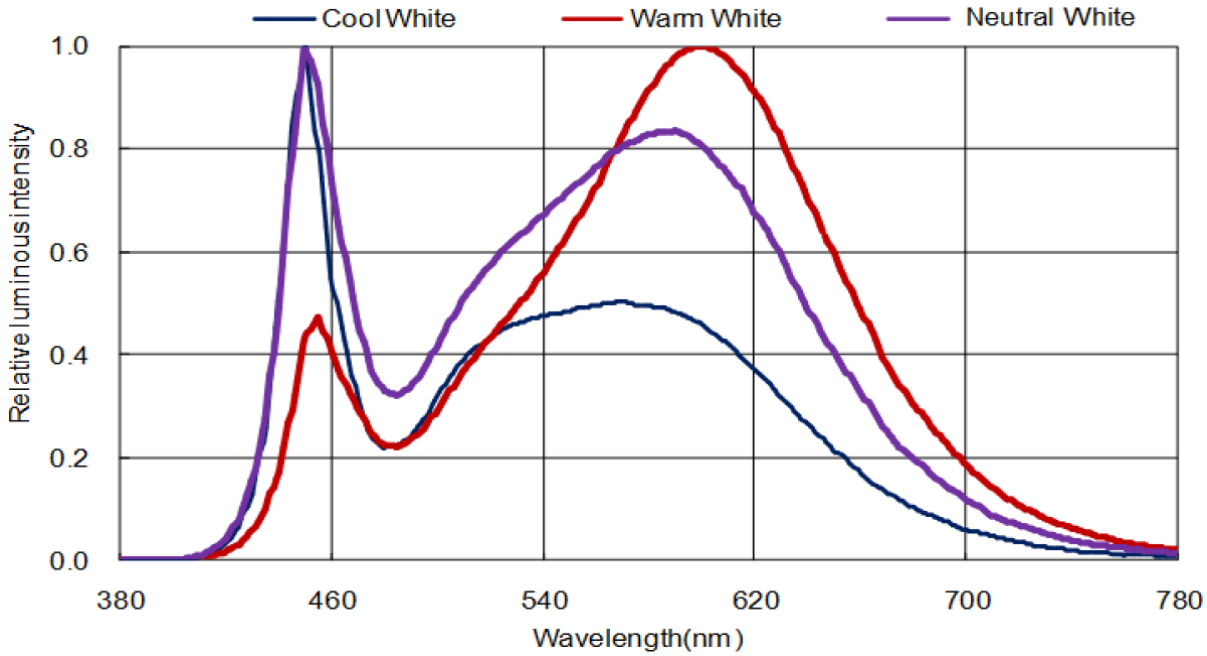


Figure 2: Normalised spectral power distribution

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

Angular Light Distribution

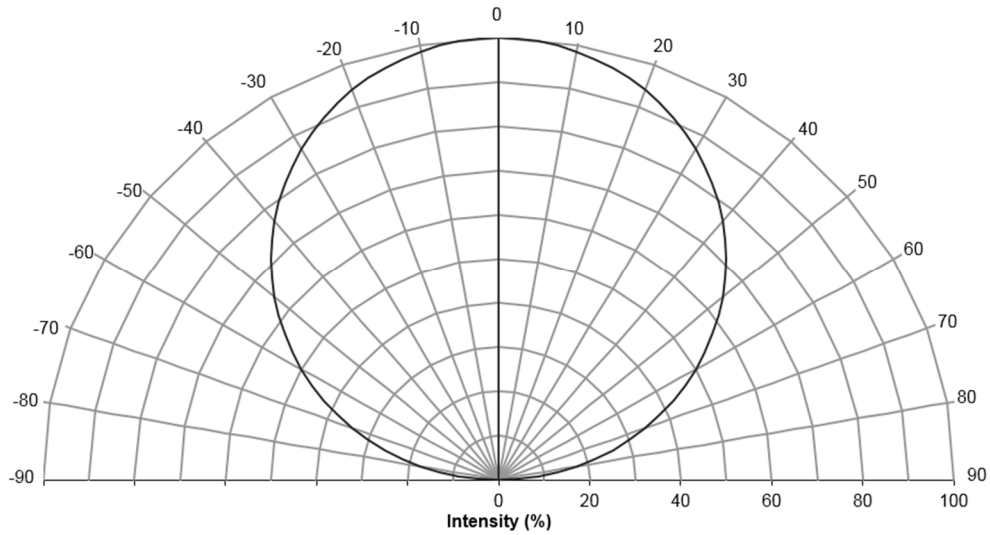


Figure 3: Angular distribution pattern of emitted light

Forward Current Characteristics

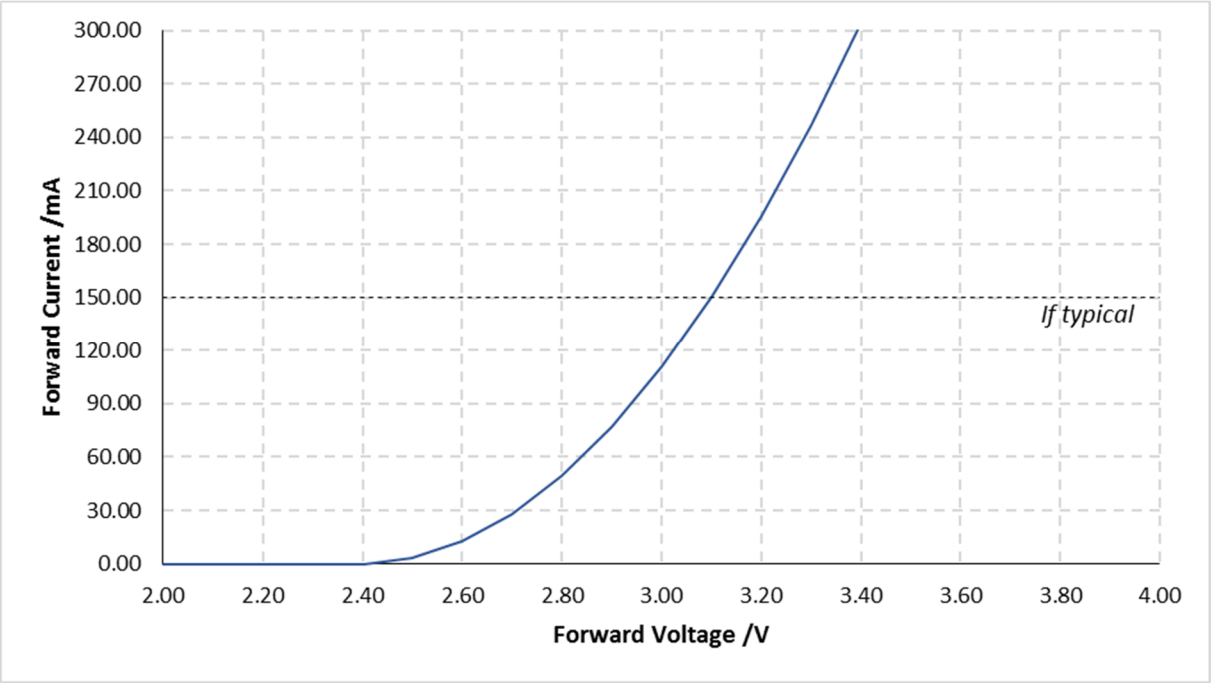


Figure 4: Typical forward current versus forward voltage (Ta=+25C)

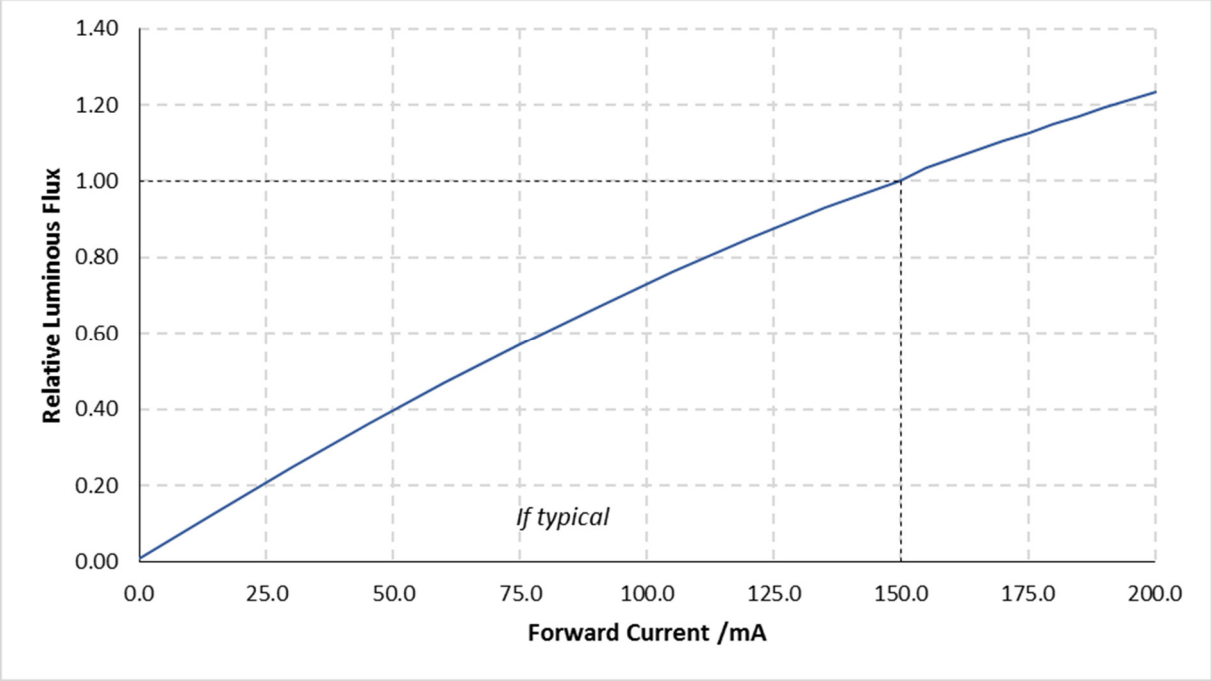


Figure 5: Relative luminous intensity versus forward current (Ta=+25C)

Temperature Characteristics

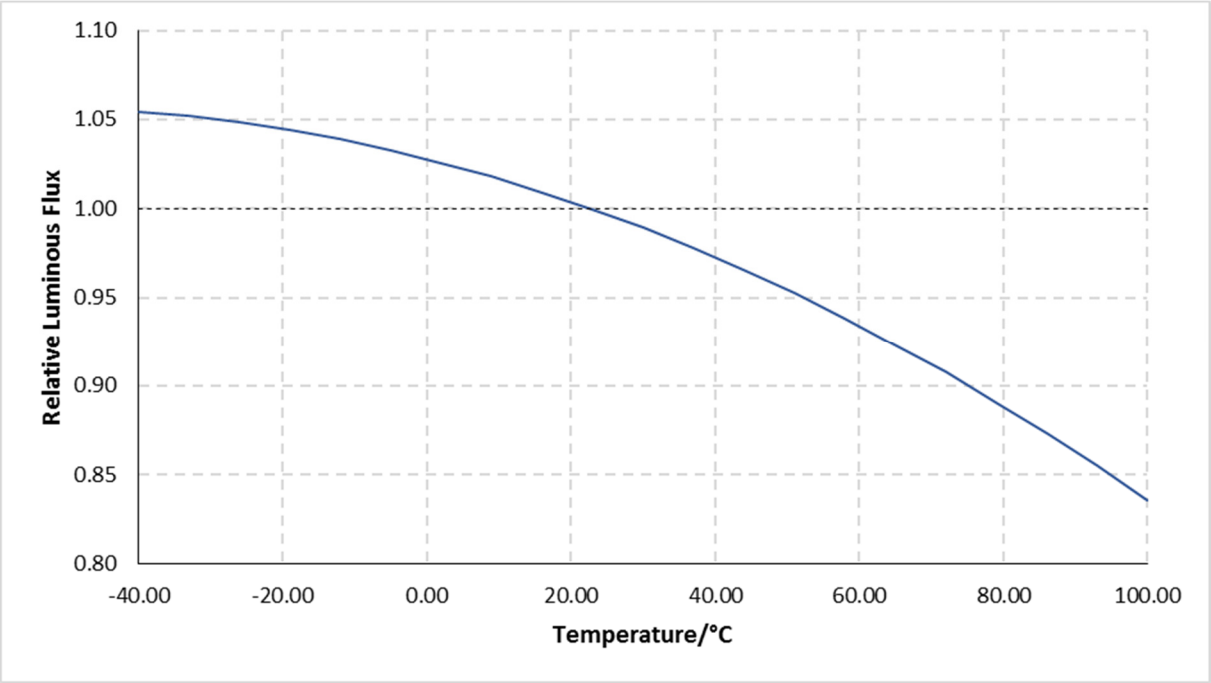


Figure 6: Relative luminous Intensity versus ambient temperature (I_F=150mA)

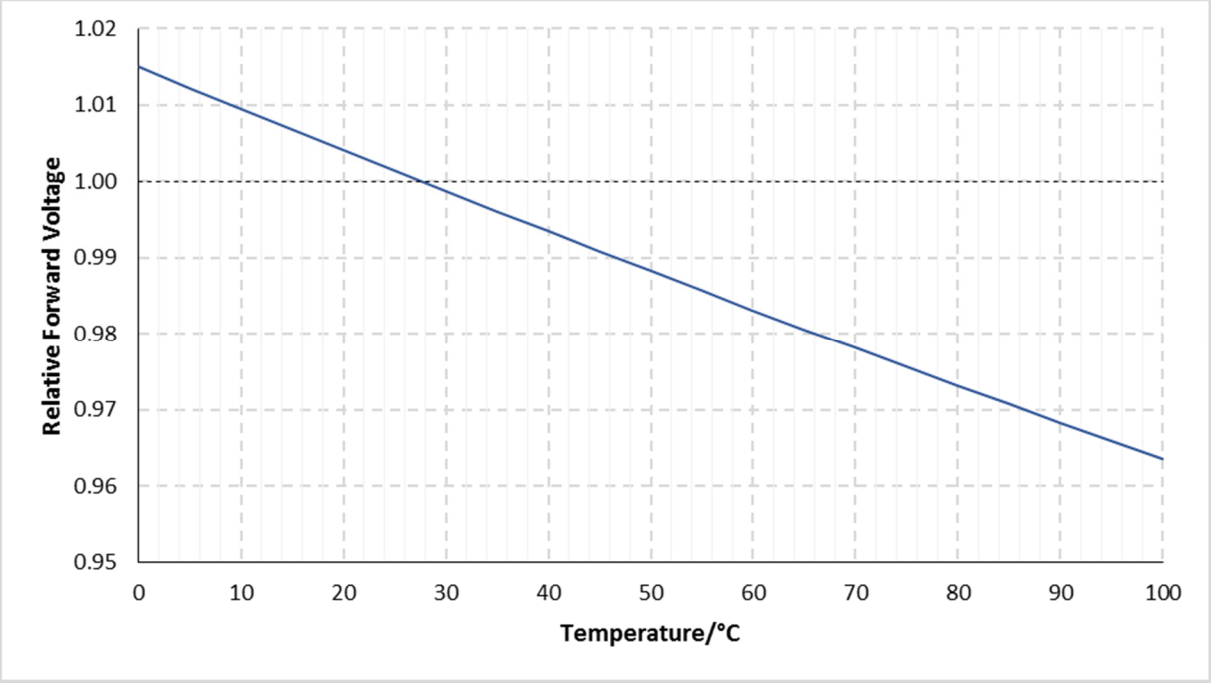


Figure 7: Forward voltage versus ambient temperature (I_F=150mA)

Package Outline Dimensions & Soldering Pattern

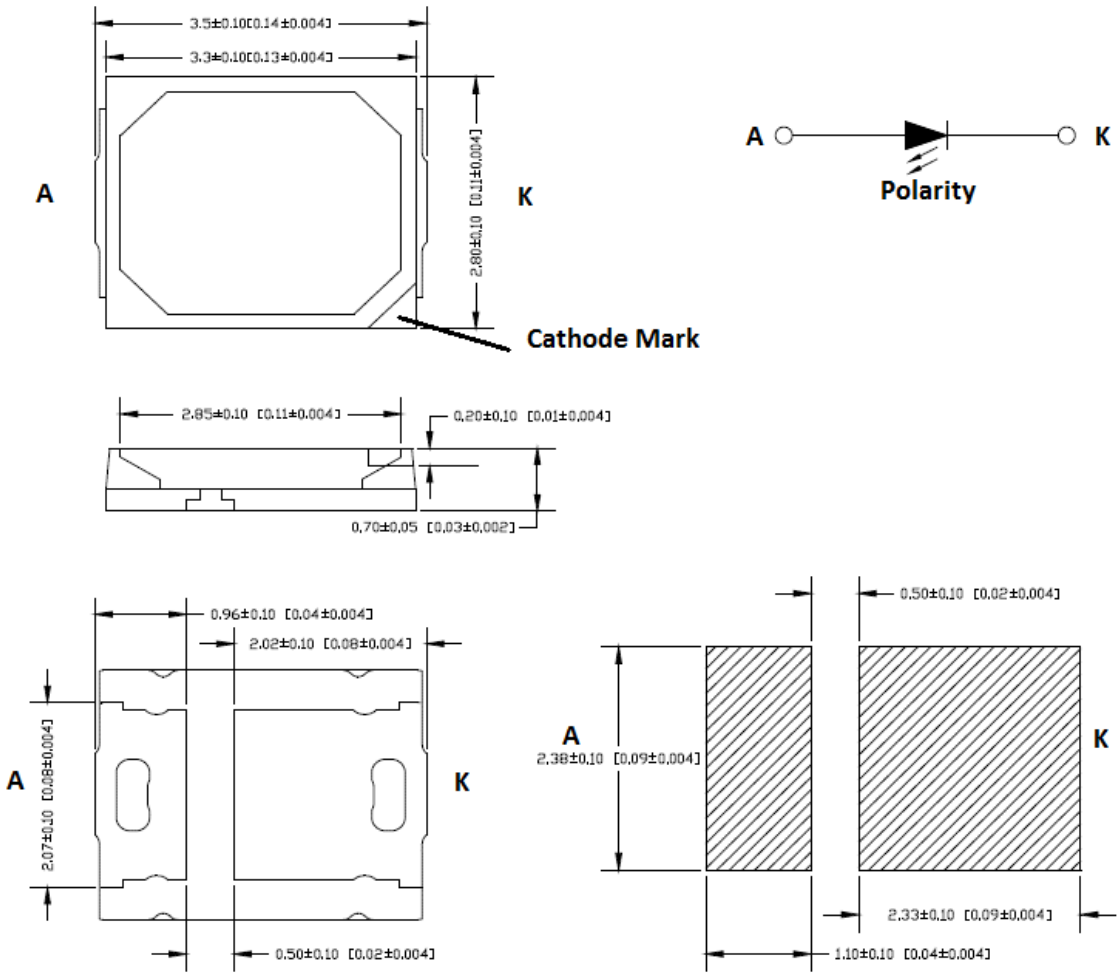


Figure 8: Package drawing and solder pattern

Reflow Soldering Pattern

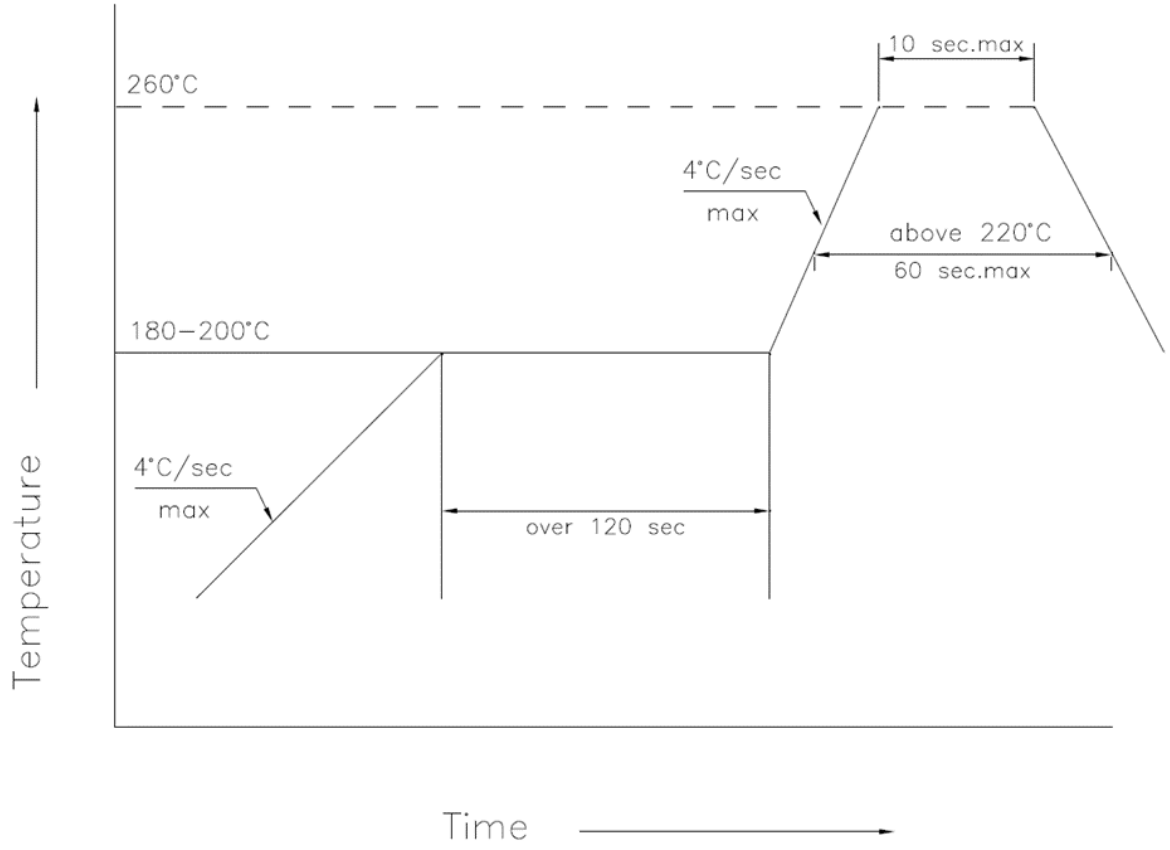


Figure 9: Reflow soldering profile

1. Reflow soldering should not be done more than twice

2. When soldering, do not put stress on the LEDs during heating

Soldering iron

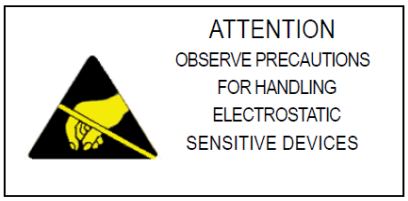
1. When hand soldering, the temperature of the iron must be ≤+300ºC for 3 seconds

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

MSL	Floor Life		Soak Requirements	
	Time	Conditions	Time	Conditions
4	72 hours	<=+30°C/60%RH	96± hours	=+30°C/60%RH

Packing Information

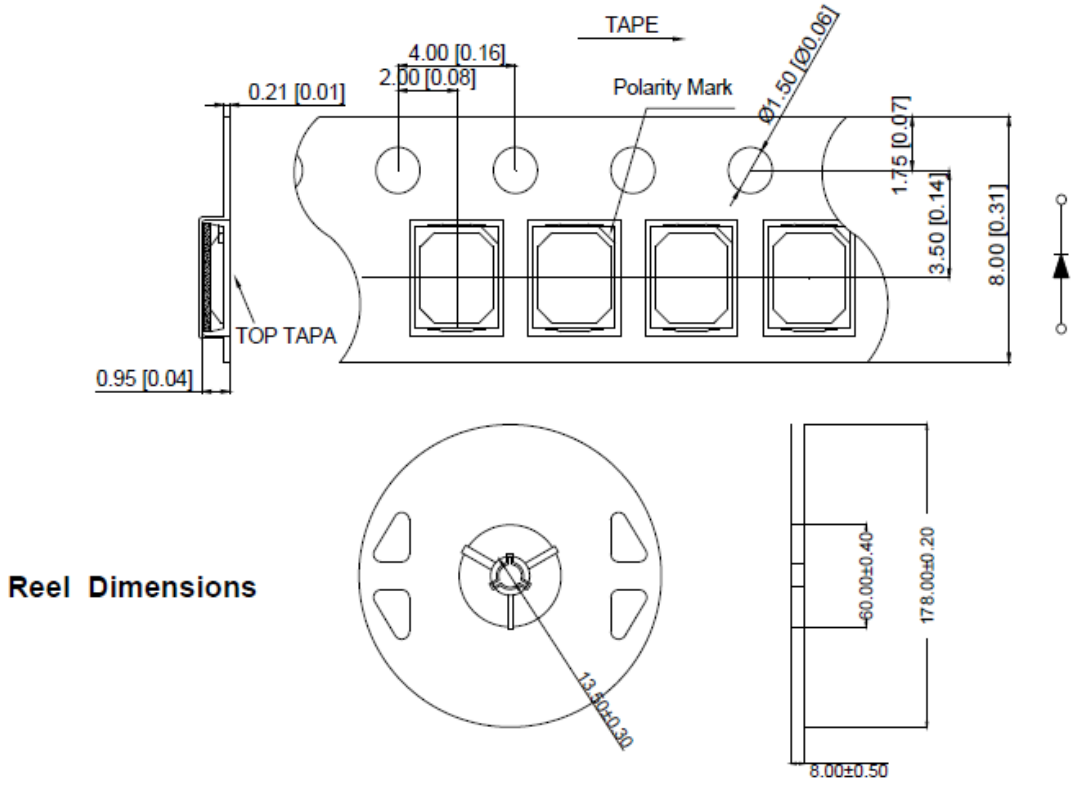


Figure 10: Reel specification (units in mm)

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