5630 LED
PLW5630CB Series
Product Datasheet

Description

Plessey PLW5630CB 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 2500 pieces; each individual reel will be shipped in single intensity and colour bin, to provide close uniformity.

Features

- 5630 footprint (5.7x3.0x0.8mm)
- High reliability PLCC-2 packaging
- Diffused pale yellow resin
- 120 degree wide viewing angle

Applications

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

Variant	Colour	CCT	
		Min.	Max.
PLW5630CB-3000	Warm White 3000K	2800K	3100K
PLW5630CB-4000	Neutral White 4000K	3800K	4250K
PLW5630CB-5000	Cool White 5000K	4750K	5300K
PLW5630CB-6000	Cool White 6000K	5700K	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}	-	200	mA
Power Dissipation	P_d	-	612	mW
Storage Temperature	T_{stg}	-40	+100	°C
Junction Temperature	T_j		+115	°C

[1] Pulse width 0.1ms, 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[1]	CRI	I_F = 150mA	90	-	-	%
Thermal Resistance	R_{thj-sp}		-	25	-	°C/W
Half-Intensity Angle	$2\Theta_{1/2}$	I_F = 150mA	-	120	-	deg

[1] Tolerance ±2%

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
PLW5630CB-3000	PLW5630CBW30000	1A, 2A, 3A	V1-V6
PLW5630CB-4000	PLW5630CBN40000	2A, 3A, 4A	
PLW5630CB-5000	PLW5630CBC50000		
PLW5630CB-6000	PLW5630CBC60000		

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

[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

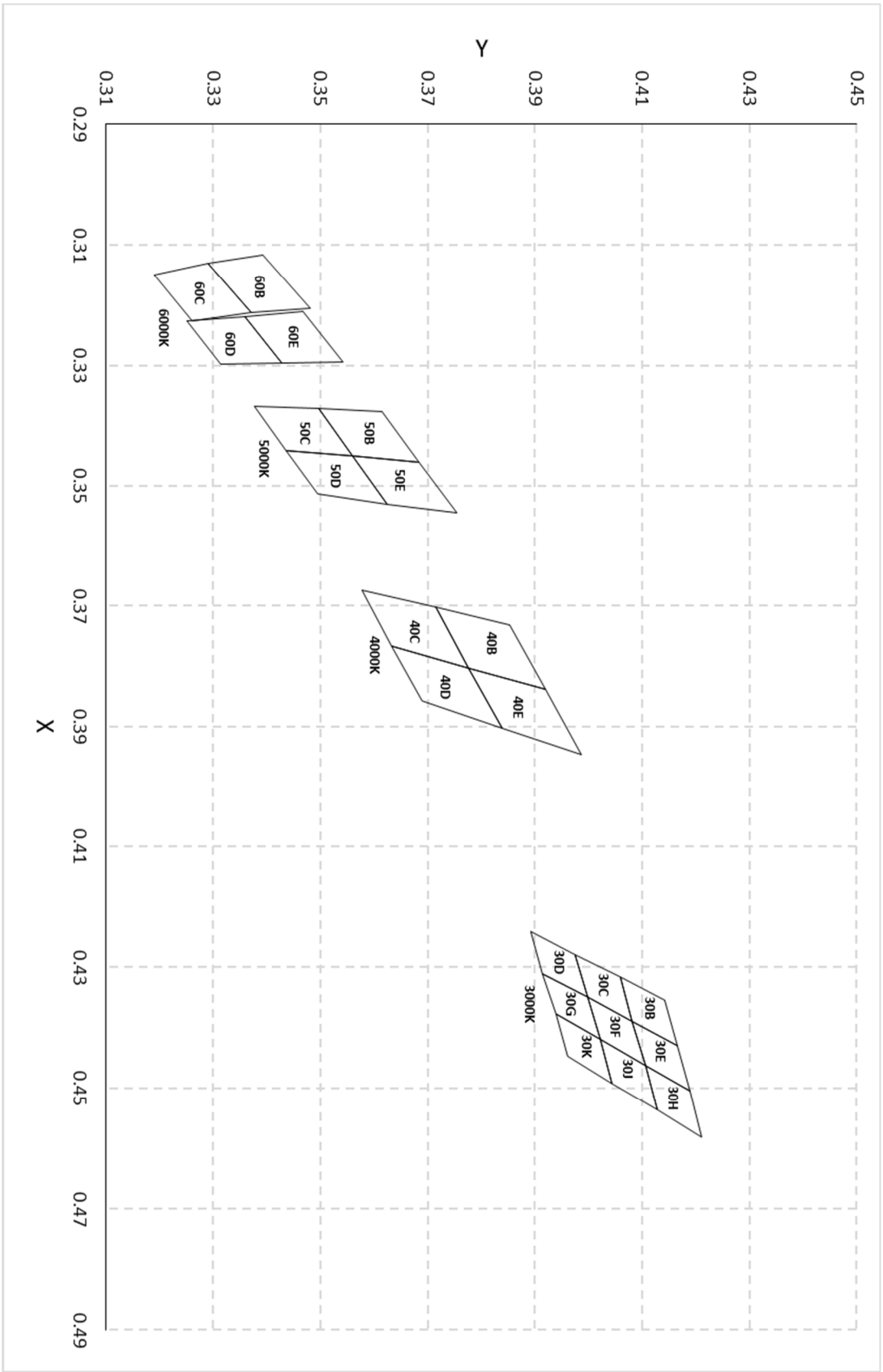


Figure 1. Colour Chromaticity Binning
Chromaticity tolerance: ± 0.003

	x	y		x	y		x	y
30D	0.4279	0.3975	30E	0.4430	0.4165	30K	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
30C	0.4316	0.4059	30F	0.4390	0.4082	30J	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
30B	0.4354	0.4142	30G	0.4350	0.3998	30H	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		0.4436	0.4106

	x	y		x	y		x	y
40C	0.3703	0.3716	50C	0.3372	0.3497	60C	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
40B	0.3731	0.3853	50B	0.3376	0.3616	60B	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
40E	0.3839	0.3920	50E	0.3461	0.3685	60E	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
40D	0.3803	0.3777	50D	0.3451	0.3561	60D	0.3219	0.3360
	0.3903	0.3839		0.3530	0.3625		0.3296	0.3429
	0.3858	0.3690		0.3541	0.3496		0.3298	0.3315
	0.3767	0.3634		0.3441	0.3437		0.3227	0.3251

Relative Spectral Emission

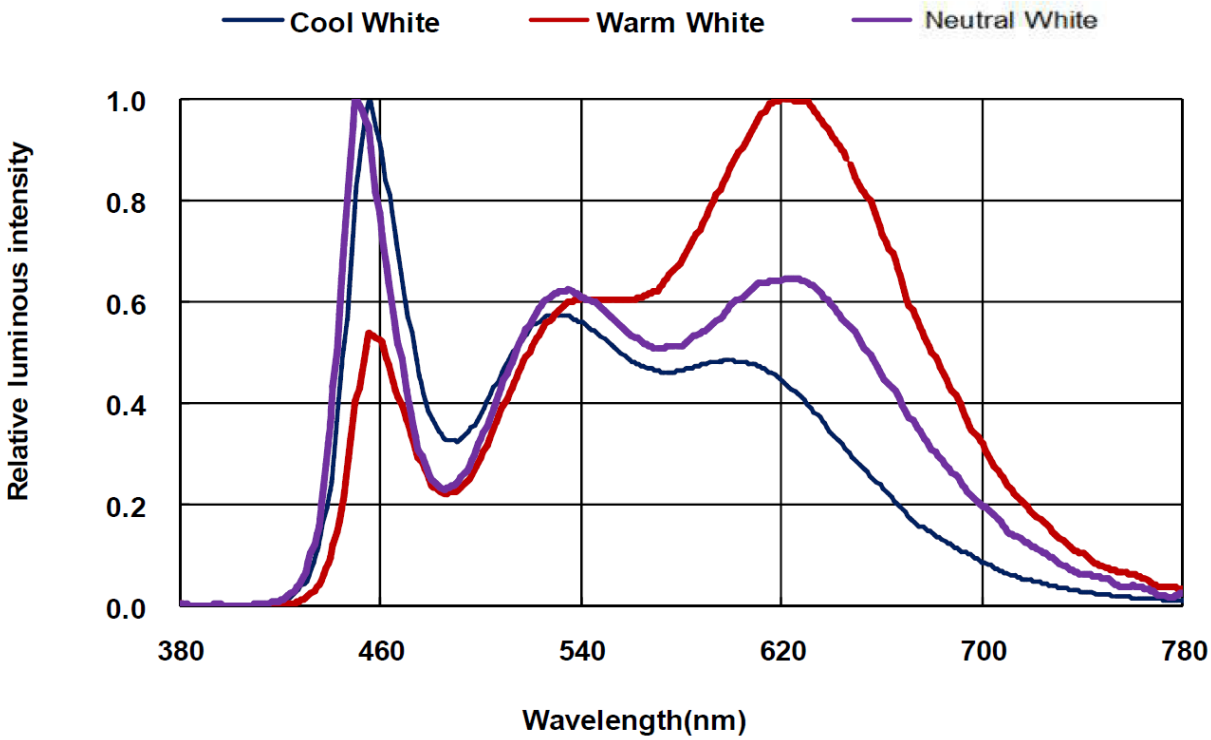


Figure 2. Normalised spectral power distribution

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

Forward Current Characteristics

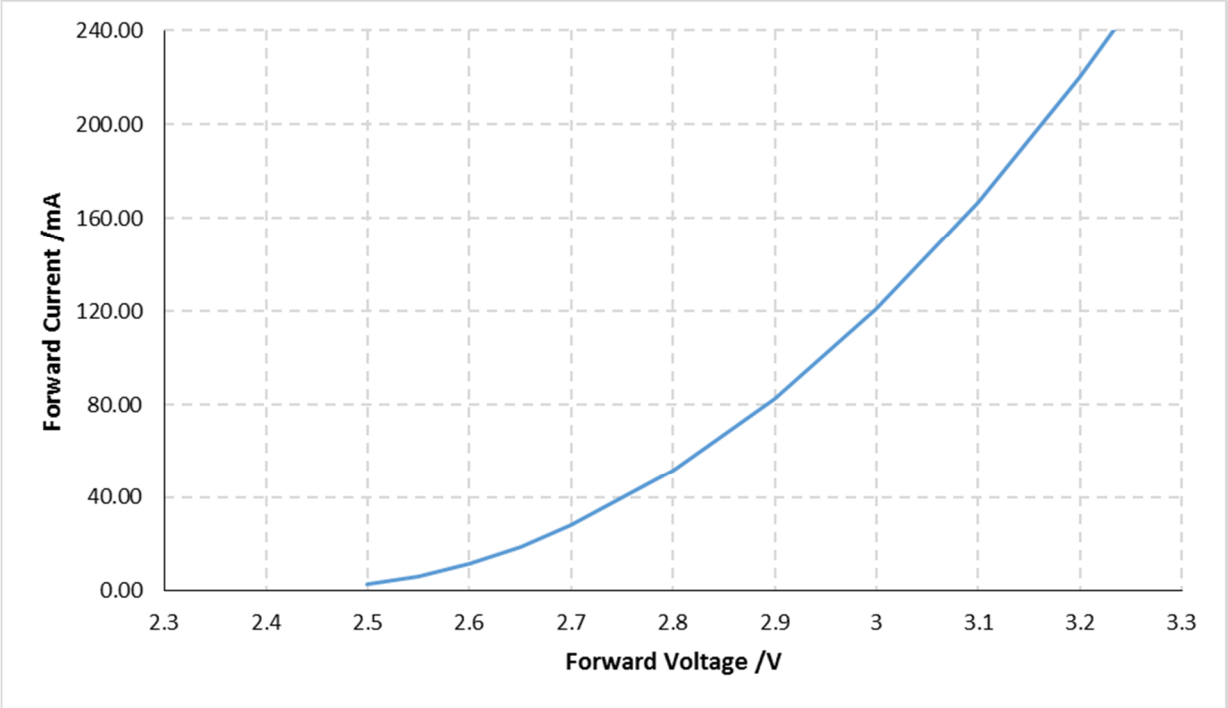


Figure 3. Typical forward current versus forward voltage (T_a=+25C)

Forward Current Characteristics (Continued)

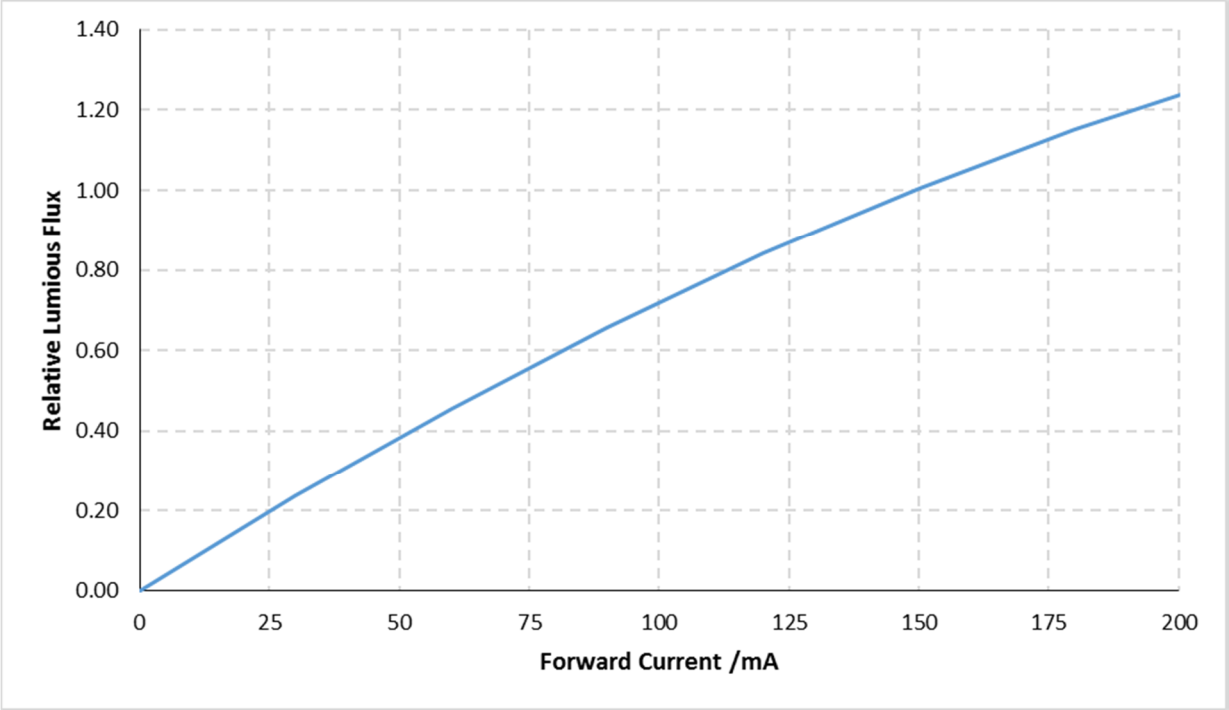


Figure 4. Relative luminous flux versus forward current (T_a=+25C)

Temperature Characteristics

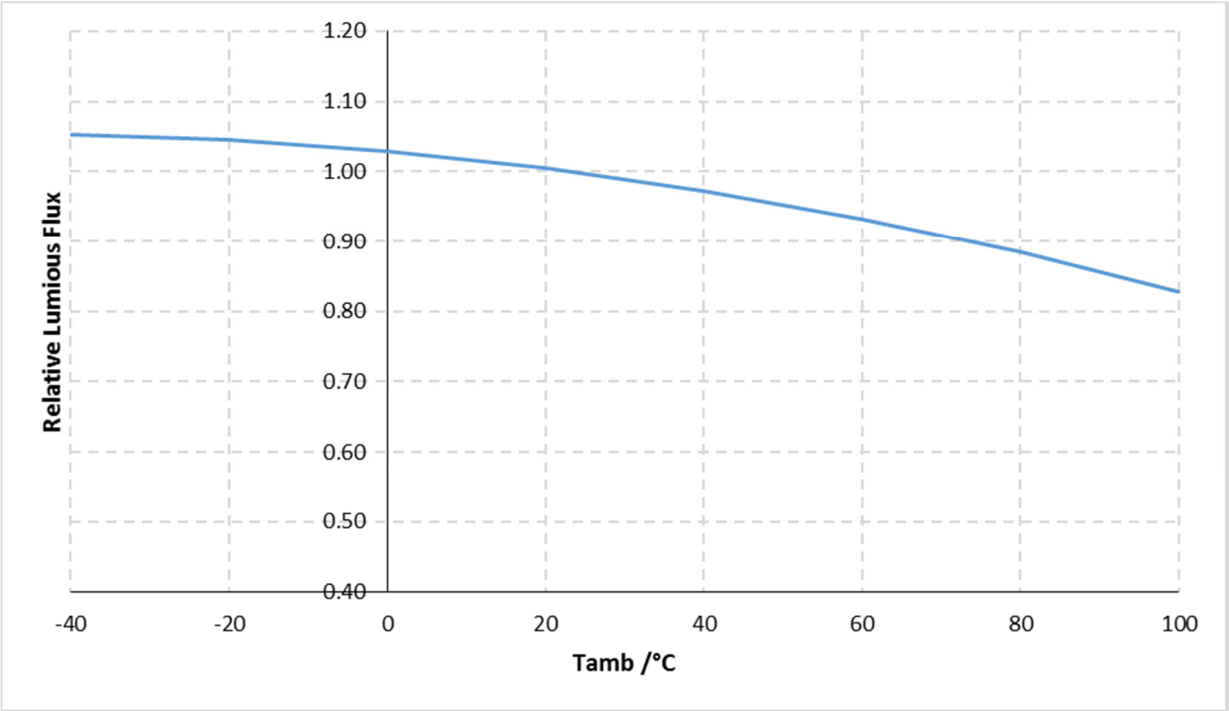


Figure 5. Relative Luminous Intensity versus ambient temperature (I_F=150mA)

Package Outline Dimensions & Soldering Pattern

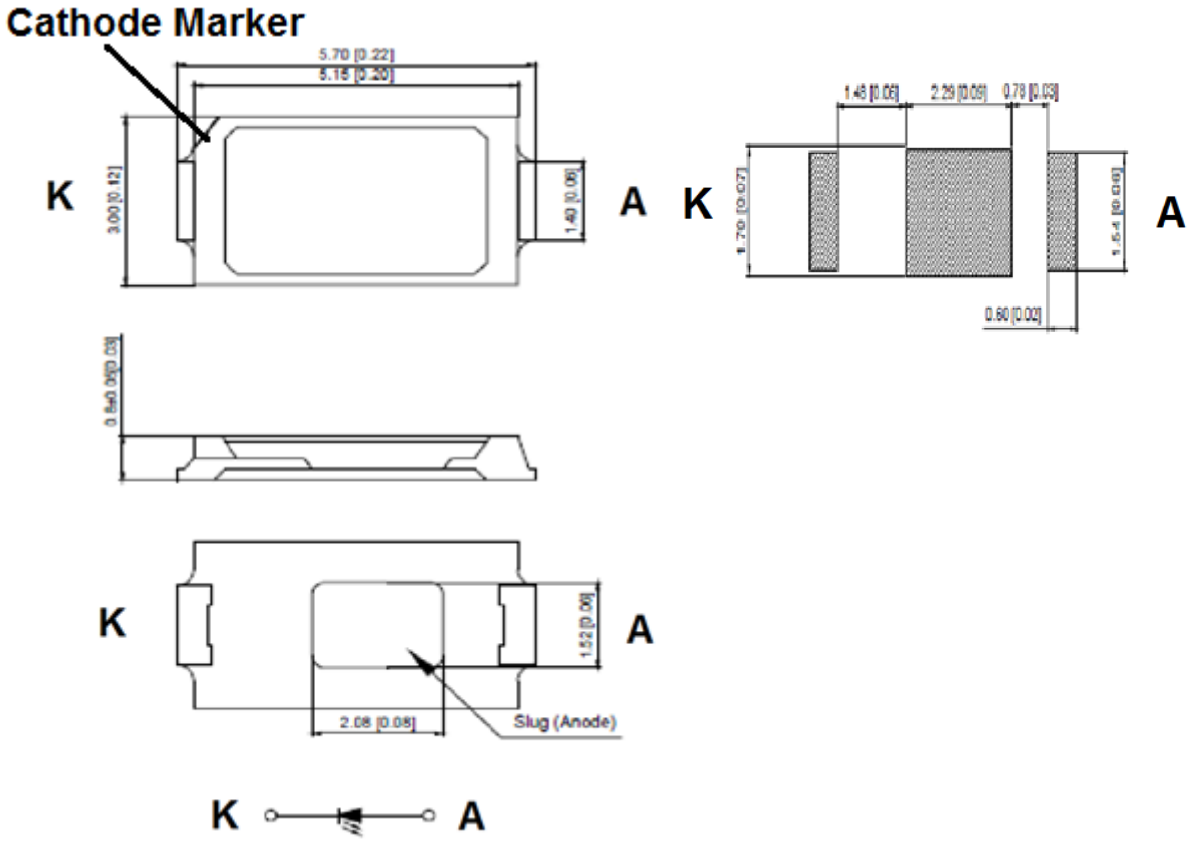


Figure 6. Mechanical Drawing & Soldering Pattern of the 5630 package

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

Reflow Soldering Profile

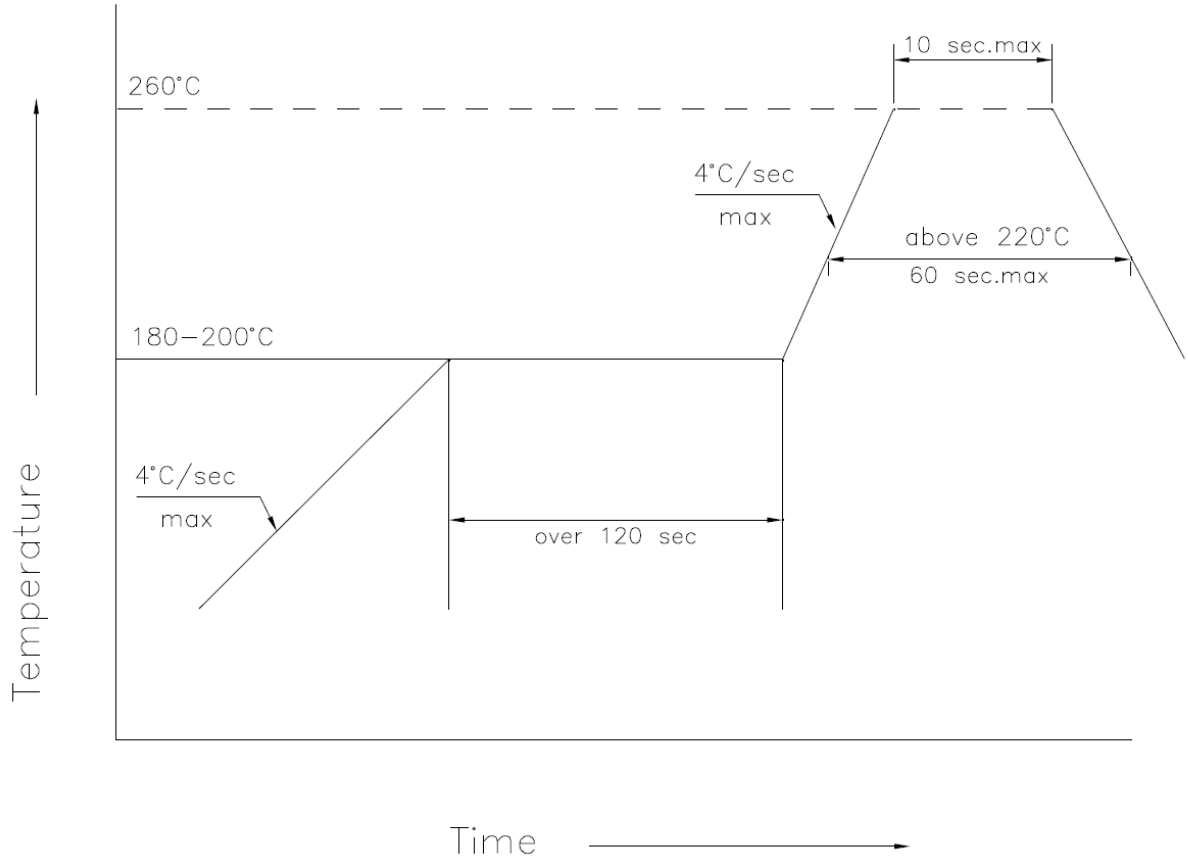


Figure 7. Reflow soldering profile

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

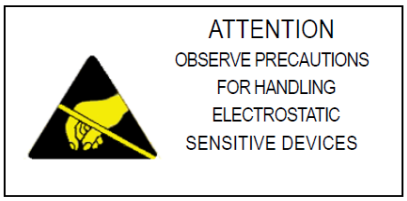
Soldering iron

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

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

Packing Information

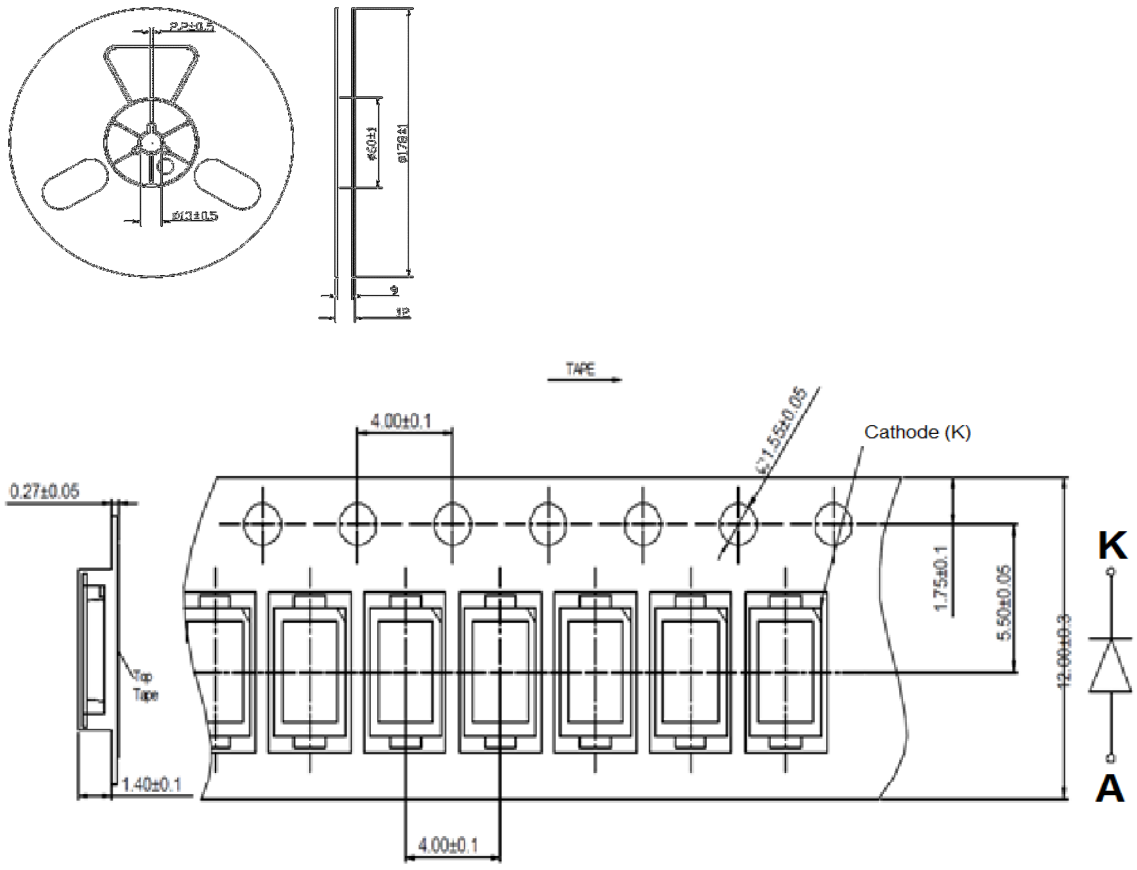


Figure 8. Reel Specification (units in mm)

Legal Notice

Contact

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