BLANCA series LED

Product Datasheet

Description

The Plessey BLANCA series is a full white, high power, high efficacy family of LED's in a lensed 5050 package. The domed lens and low thermal resistance packaging ensure high optical output, cool running and optimum reliability. The BLANCA series LED's are supplied in quantities of 500 per reel.

Features

- Industry standard 5050 footprint
- High optical output
- Full white colour range
- High reliability ceramic packaging
- Domed silicone lens
- 145deg wide viewing angles

Applications

- General Lighting
- Residential Lighting
- Commercial Lighting
- Street Lighting
- Torches
- Signage
- Displays

Part No.	Colour	CCT		typ output	V_F		CRI
		min	max	@ 700mA	min	max	
PLW5050AA-C	Cool White	4750K	10000K	885 lm	11	15	typ 70
PLW5050AA-N	Neutral White	3700K	4750K	680 lm	11	15	typ 75
PLW5050AA-W	Warm White	2600K	3700K	645 lm	11	15	min 80

Absolute Maximum Ratings

T_{amb} = +25ºC unless otherwise stated

Parameter	Symbol	Min	Max	Unit
DC Forward Current	I_F	-	700	mA
Peak Forward Current[1]	I_{FP}	-	1000	mA
Reverse Voltage	V_R	-	5	V
Storage Temperature	T_{stg}	-40	125	ºC
Junction Temperature	T_J	-40	150	ºC

[1] duty cycle ≤ 10%, f = 1kHz

Electro-optical Characteristics

T_J = 25ºC unless otherwise stated

Parameter	Symbol	Condition	Min	Typ	Max	Unit
Forward Voltage[1]	V_F	I_F = 350mA	11	13	15	V
Temperature Coefficient	$\Delta V_F/\Delta T_J$		-2	-3	-4	mV/ºC
Viewing Angle	$2\Theta_{1/2}$	I_F = 350mA	-	145	-	deg
Thermal resistance	$R_{th\ j\text{-}mb}$		-	1.5	-	K/W

[1] Tolerance ± 0.1V

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 Intensity Bins
PLW5050AA-C	PLW5050AAC000	5A to 8A
PLW5050AA-N	PLW5050AAN000	2A to 5A
PLW5050AA-W	PLW5050AAW000	1A to 4A

Intensity Bin Groups

I_F = 350mA, T_{amb} = +25°C, unless otherwise stated

Group[1]	Luminous Flux Φv (lm)	
	min	max
1A	320	340
2A	340	360
3A	360	380
4A	380	400
5A	400	440
6A	440	480
7A	480	520
8A	520	560

[1] Tolerance ±10%

Relative Spectral Emission (Typical)

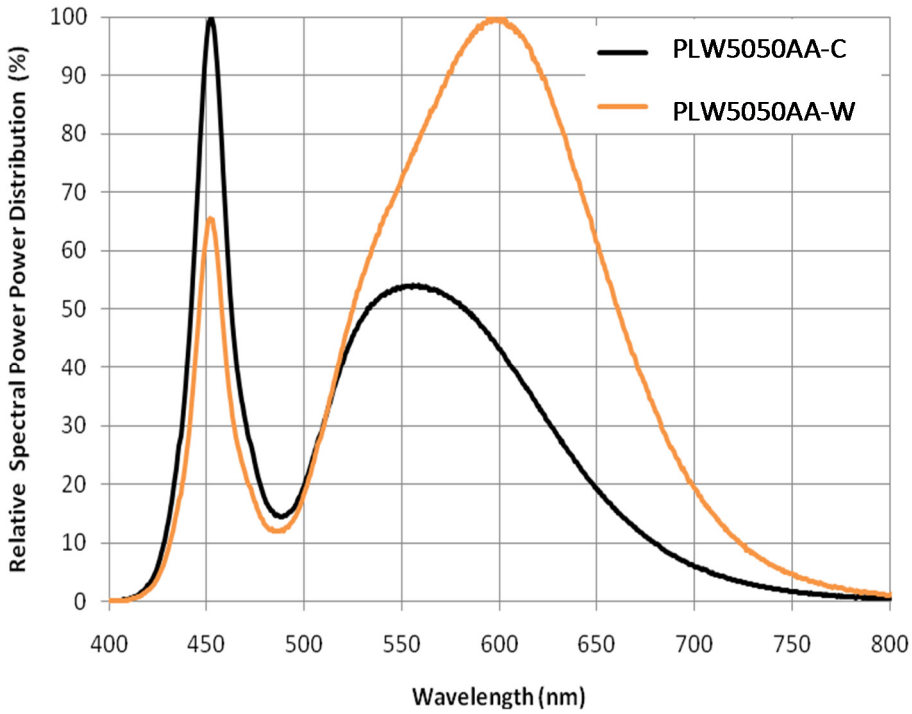


Fig.1 Normalised spectral power distribution

Angular Light Distribution

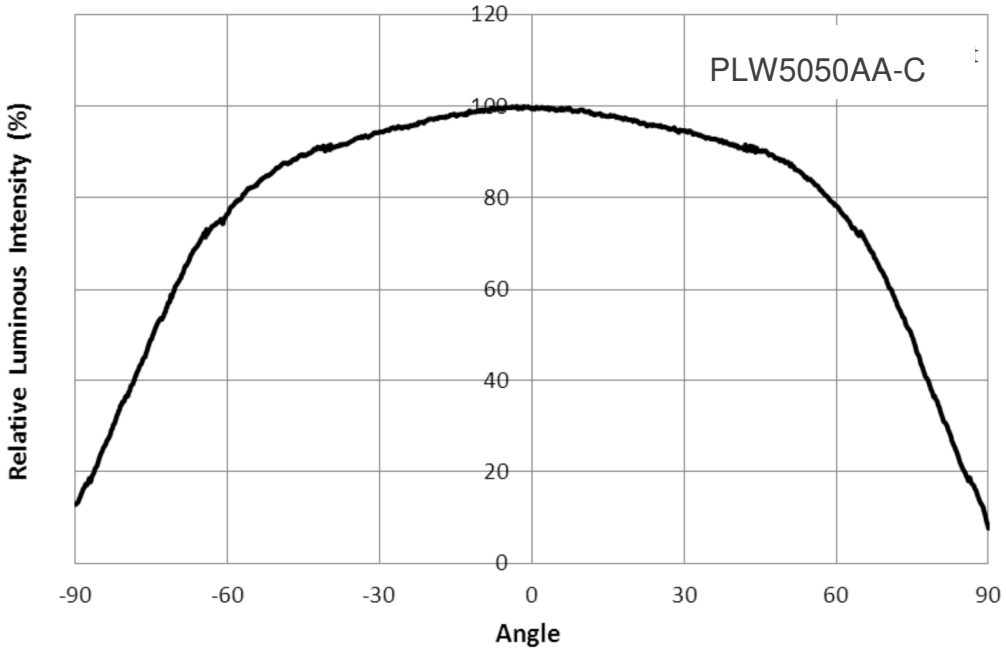


Fig.2 Angular distribution pattern of emitted light (typical) – Cool White

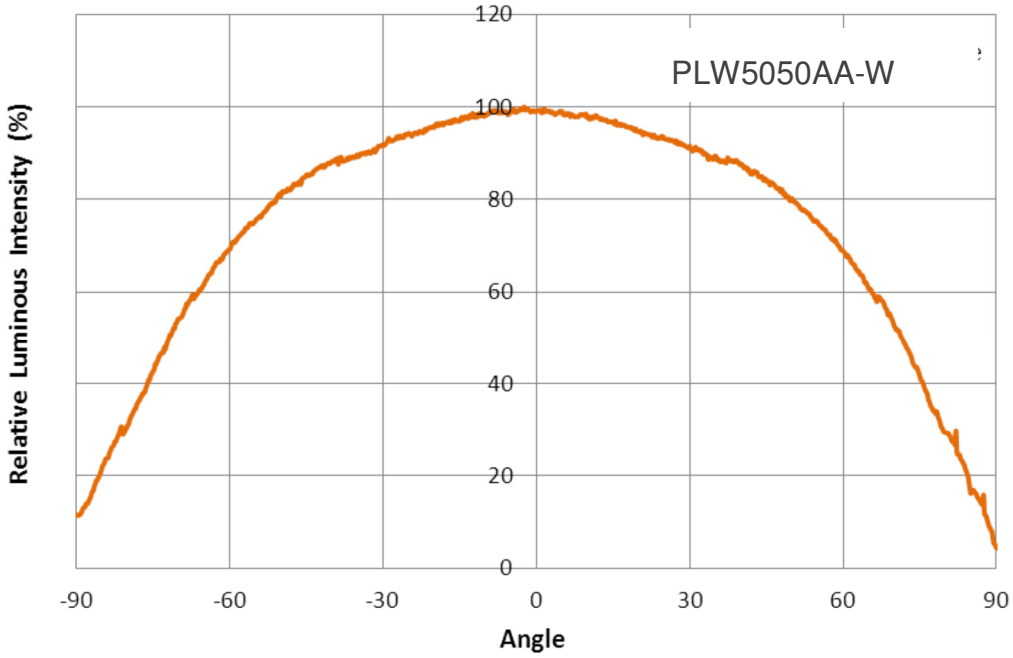


Fig.3 Angular distribution pattern of emitted light (typical) – Warm White

Luminous Flux Characteristics

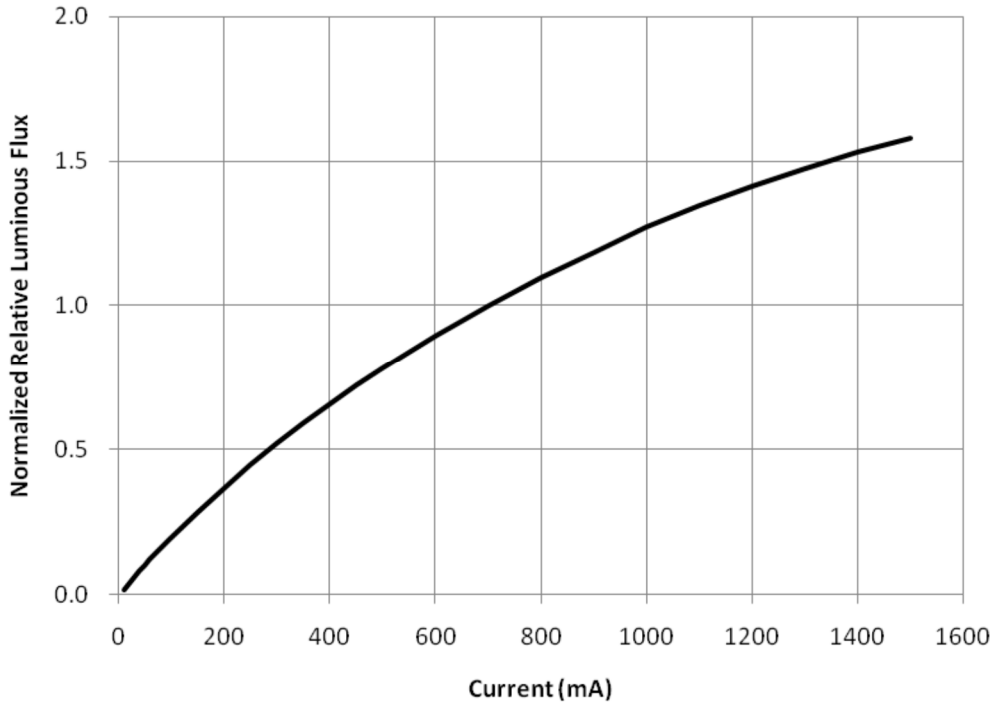


Fig.4 Normalized Relative Luminous Flux versus Forward Current

Forward Current Characteristics

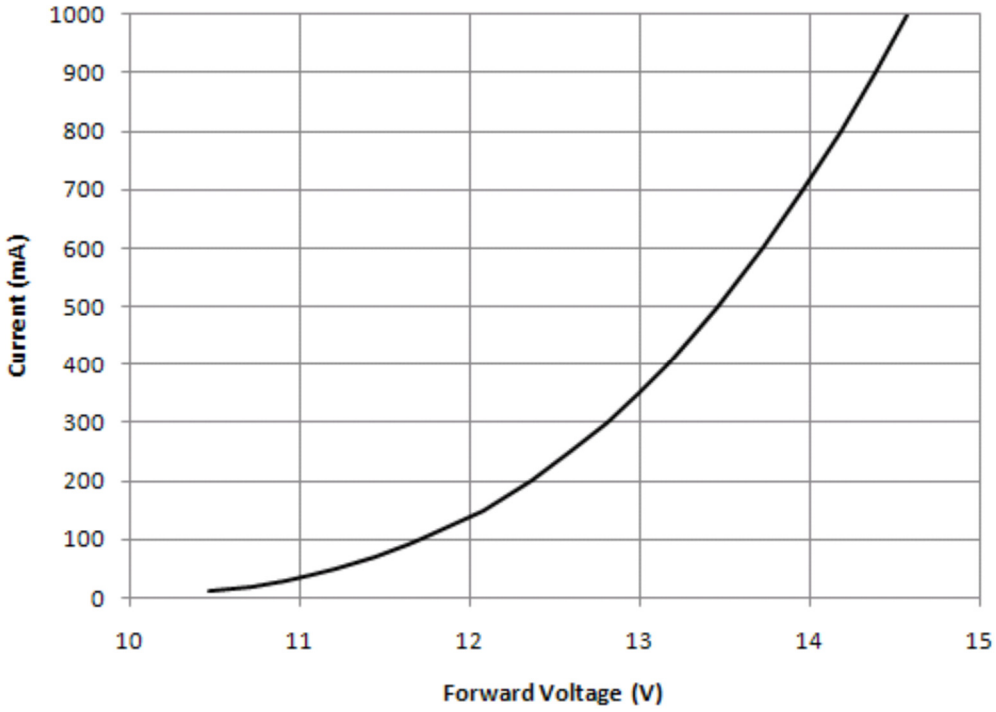


Fig.5 Typical Forward Voltage vs Forward Current

Temperature Characteristics

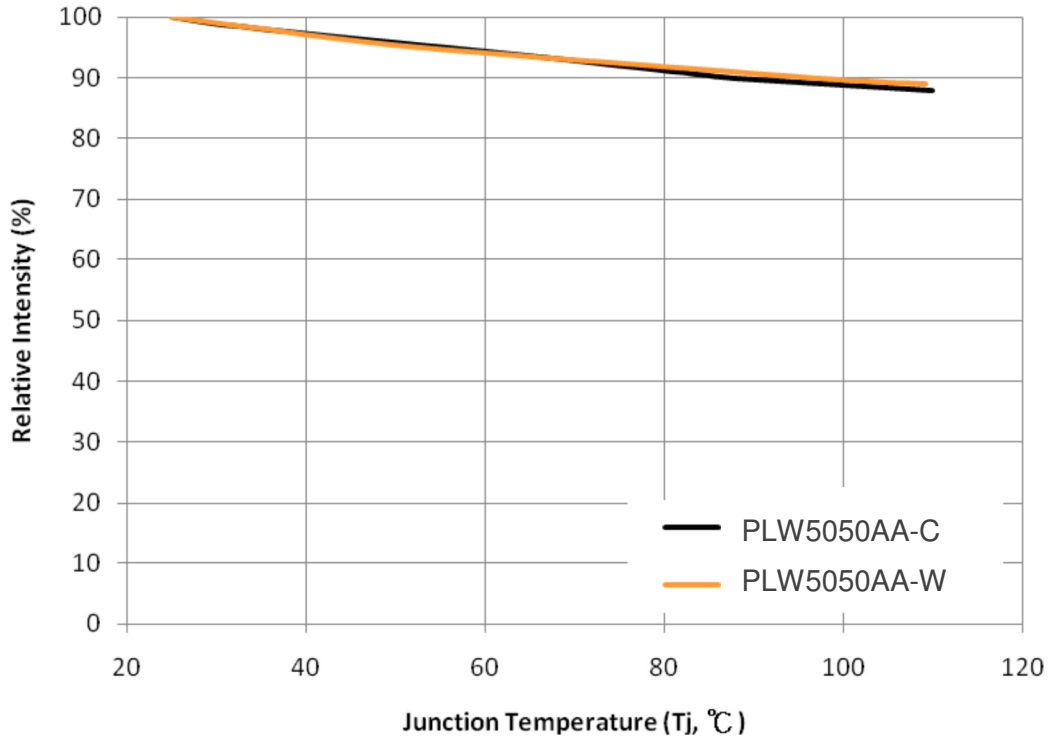


Fig.6 Relative luminous flux vs junction temperature

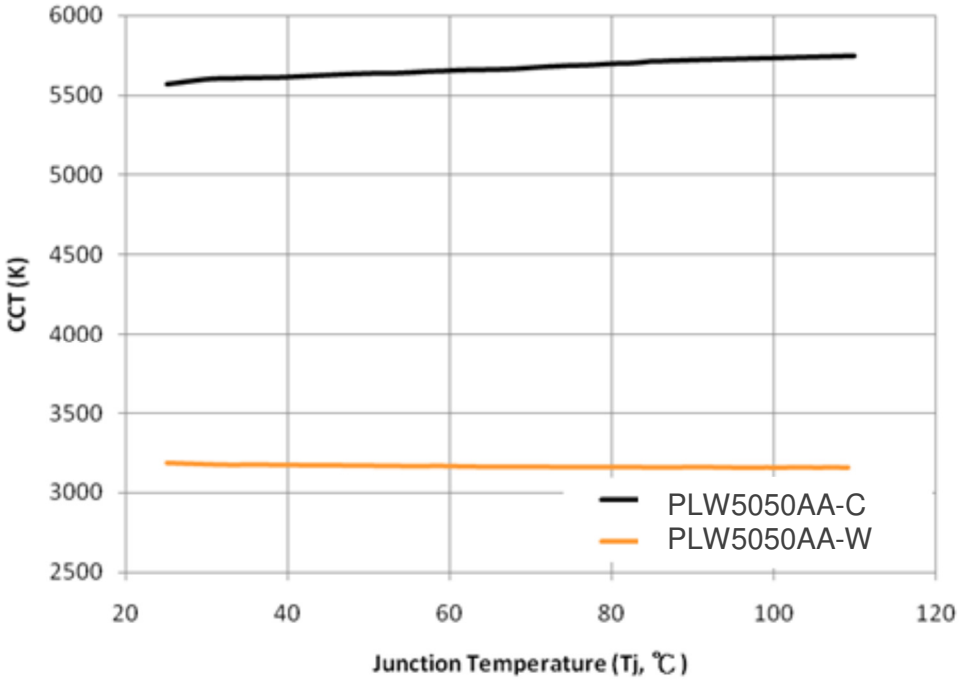


Fig.7 CCT vs junction temperature

Derating Curves

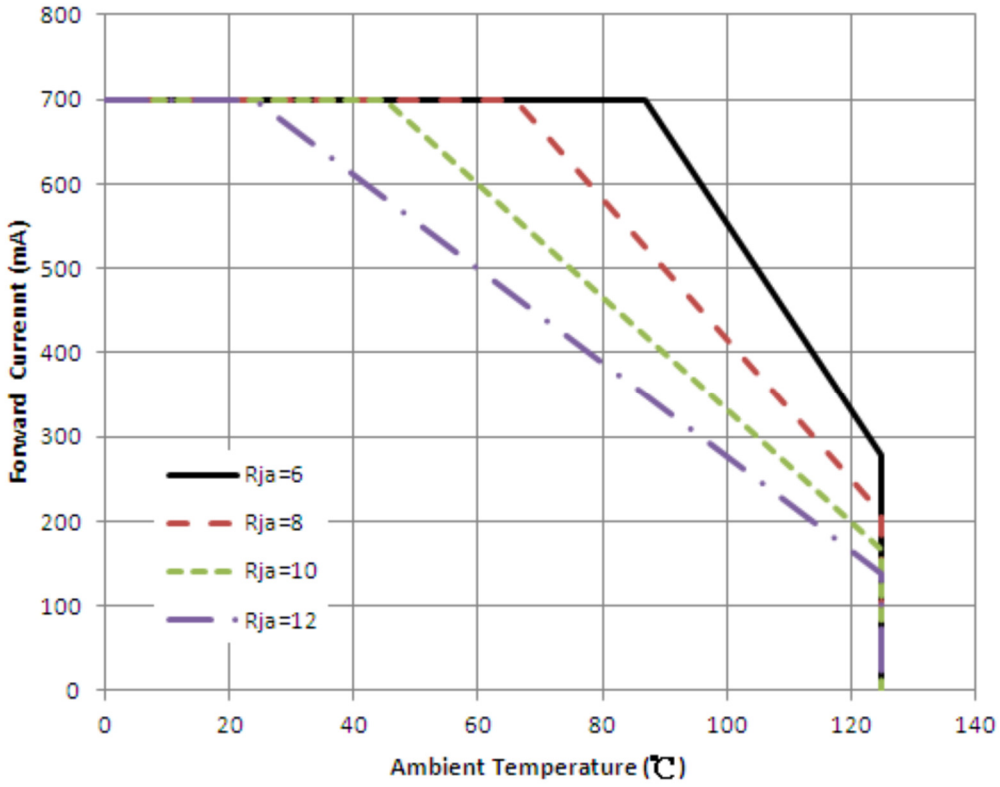


Fig.8 Ambient Temperature Derating Curve for varying heatsink values

Package Outline Dimensions

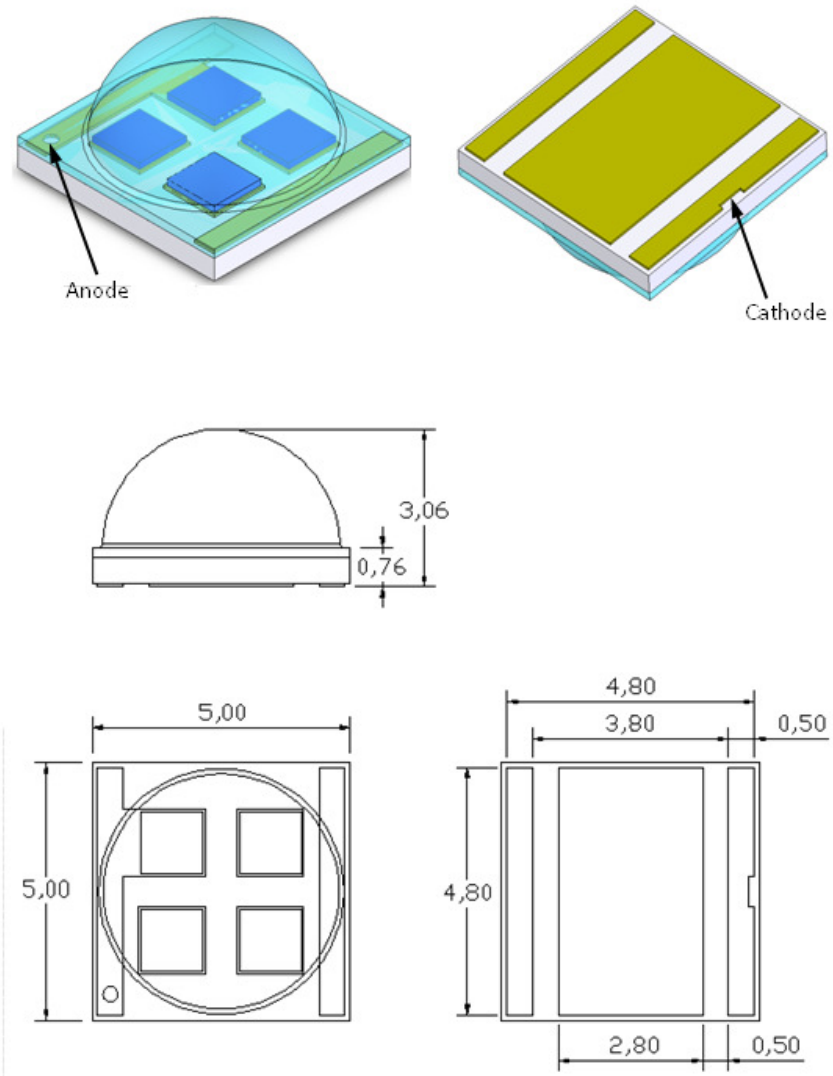


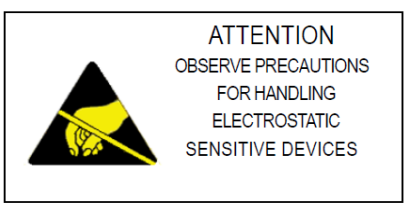
Fig.9 Mechanical drawings of the 5050 package

Notes:
1. All dimensions are in mm
2. All dimensions are to a tolerance of ±0.13mm

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
1	unlimited	≤+30°C / 85% RH	Not required	-

Soldering Information

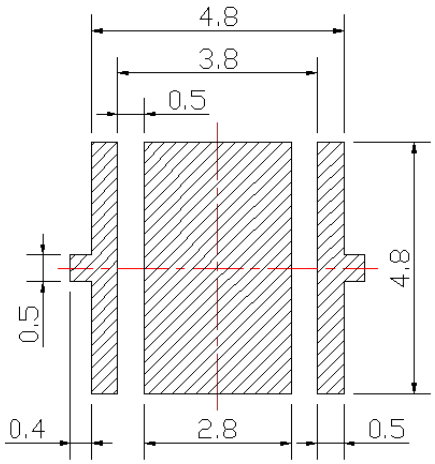


Fig.10 Recommended Solder Pad Design

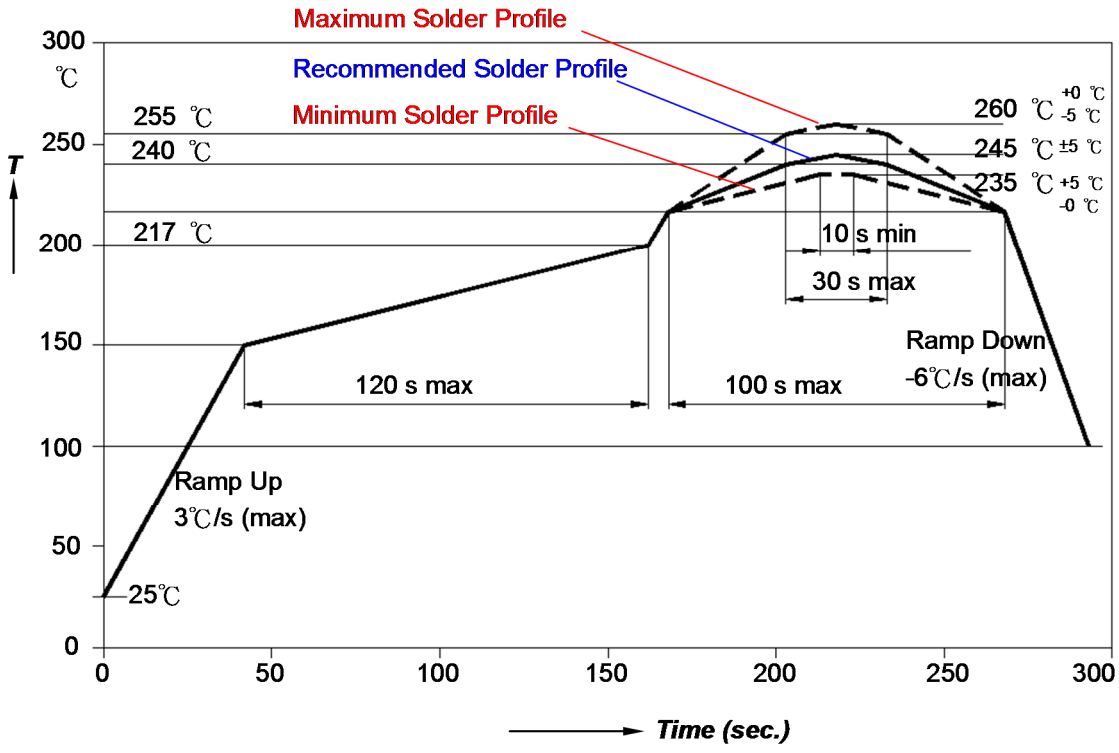
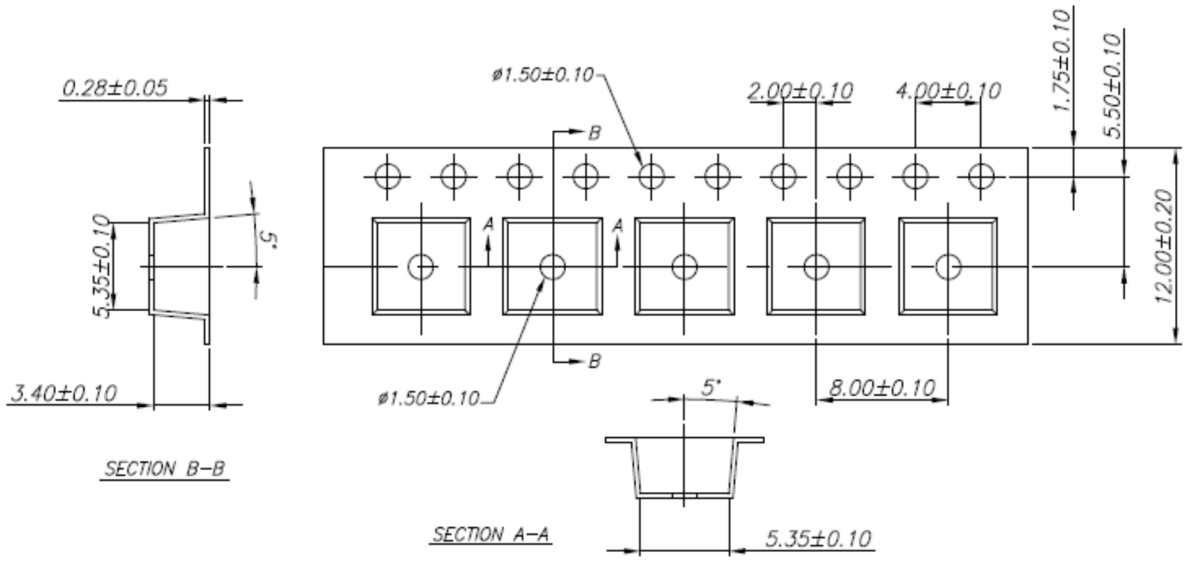
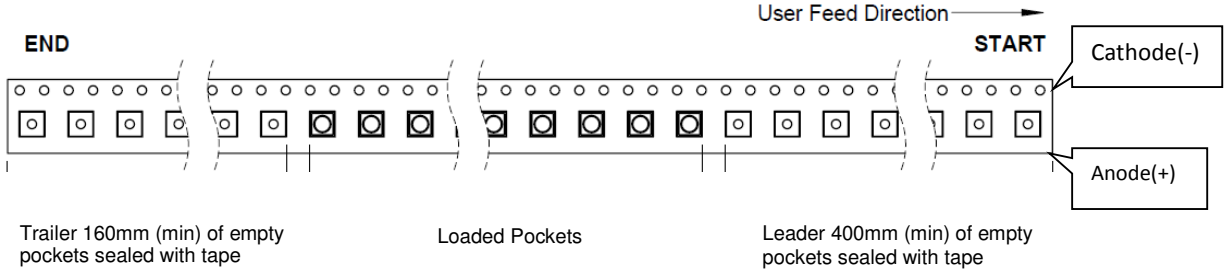


Fig.11 Recommended Solder Profile

Packing Information





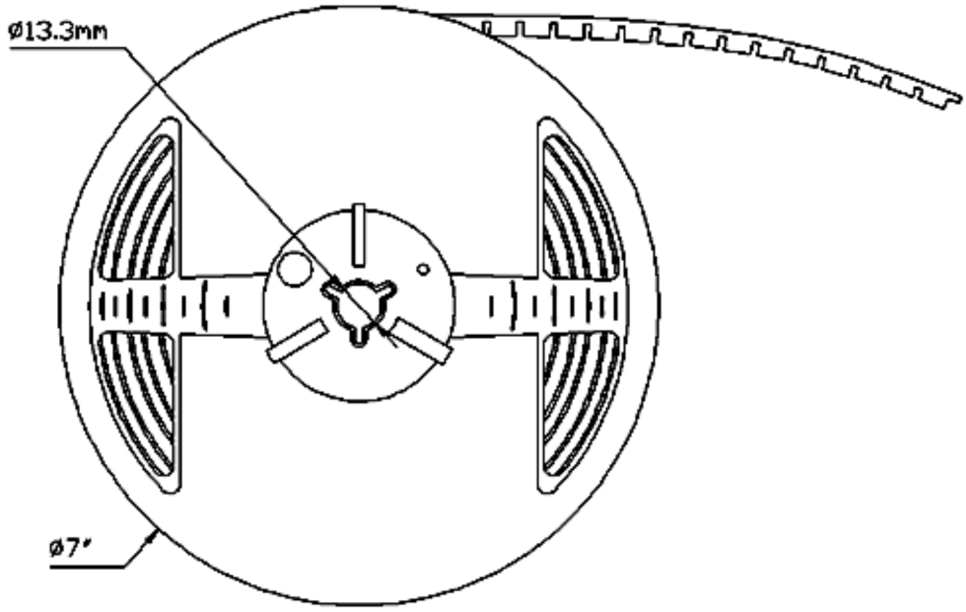


Fig.12 Tape & Reel Packing Details

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