

# White Surface Mount LED Lamp

## OVSRWAC1R6

- Side-view white LED
- Surface mount lead frame package with two pins
- Wide viewing angles

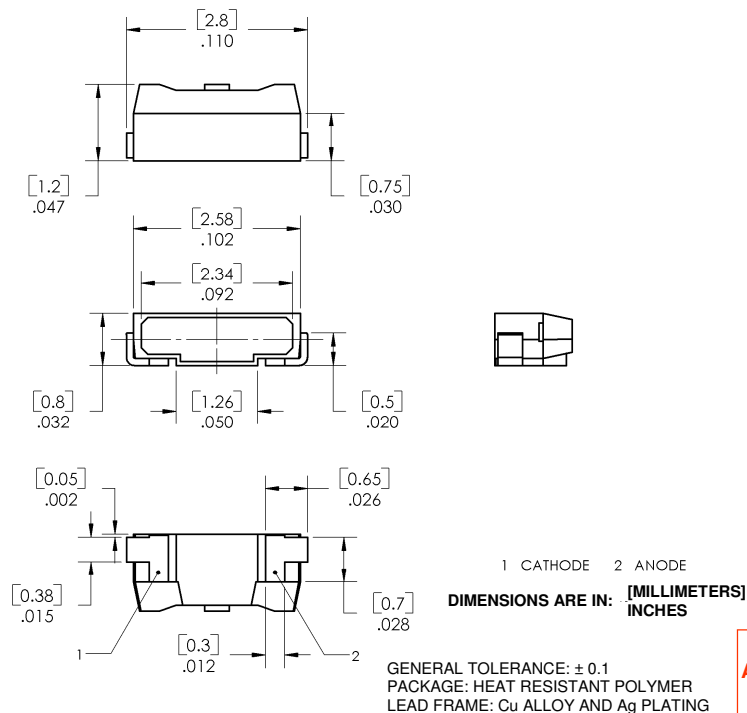


The **OVSRWAC1R6** is ideal for backlighting LCD screens and for coupling with light guides. This design combines high optical efficiency with wide viewing angles ( $x = 120^\circ$ ,  $y = 110^\circ$ ) and low power consumption.

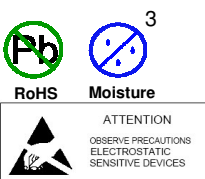
### Applications

- LCD backlight
- Hand-held appliances
- Indicators
- Switch and message illumination

Part Number	Material	Emitted Color	Intensity Typ. mcd	Lens Color
OVSRWAC1R6	GaN	White	2000	Water Clear



**DO NOT LOOK DIRECTLY AT LED WITH UNSHIELDED EYES OR DAMAGE TO RETINA MAY OCCUR.**



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### Absolute Maximum Ratings

$T_A = 25^\circ\text{C}$  (on metal core PCB) unless otherwise noted

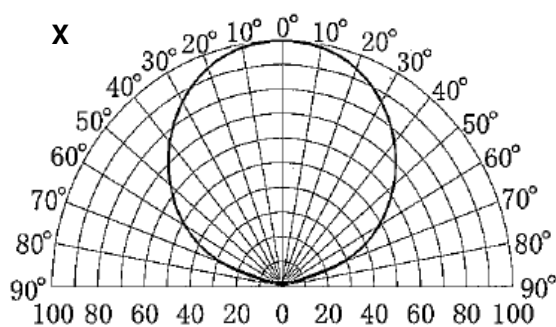
Storage Temperature Range	-40 ~ +100° C
Operating Temperature Range	-30 ~ +85° C
Reverse Voltage	5 V
Continuous Forward Current	30 mA
Forward Current Reduction	-0.50 mA/° C
Peak Forward Current (10% Duty Cycle, Pulse Width 10msec)	80 mA
Power Dissipation	120 mW
ESD Threshold (HBM)	2000V

### Electrical Characteristics

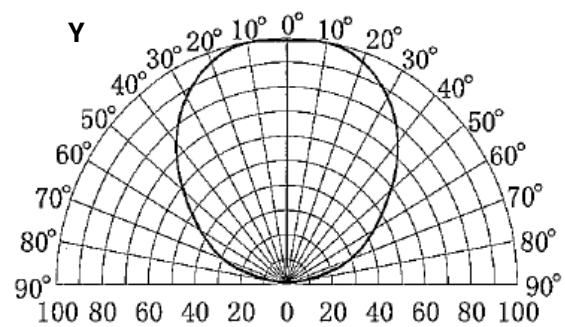
$T_A = 25^\circ\text{C}$  (on metal core PCB) unless otherwise noted

SYMBOL	PARAMETER	MIN	TYP	MAX	UNITS	CONDITIONS
$I_V$	Luminous Intensity	1860	2000	2210	mcd	$I_F = 20\text{ mA}$
$V_F$	Forward Voltage	3.0	3.2	3.4	V	$I_F = 20\text{ mA}$
$I_R$	Reverse Current	----	----	2.0	$\mu\text{A}$	$V_R = 5\text{ V}$
$2\Theta_{1/2}$	50% Power Angle	----	$x=120^\circ$ $y=110^\circ$	----	deg	$I_F = 20\text{ mA}$
x	Chromaticity Coordinates	Ranking Table Applies (see Pages 3 and 5)			----	$I_F = 20\text{ mA}$
y					----	$I_F = 20\text{ mA}$

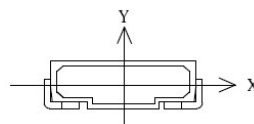
### Radiation Pattern



Relative Luminous Intensity



Relative Luminous Intensity



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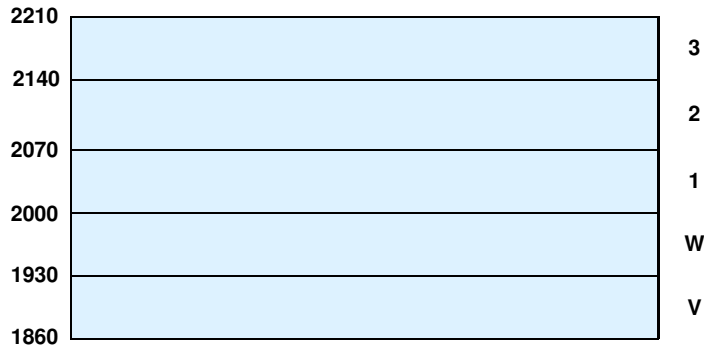
## OVSRWAC1R6



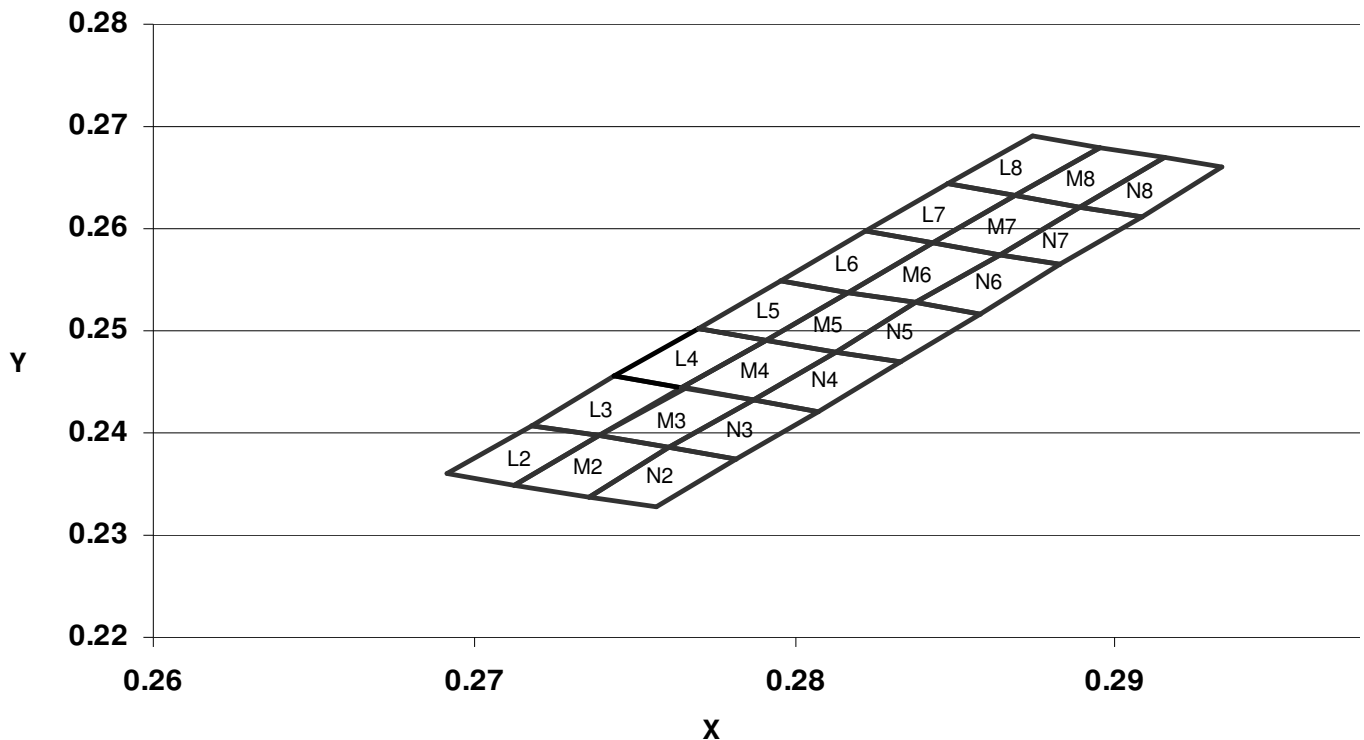
### Standard Bins ( $I_F = 20 \text{ mA}$ )

Lamps are sorted to luminous intensity ( $I_V$ ) and chromaticity coordinates (x, y) bins shown. Orders for OVSWAC1R6 may be filled with any or all bins contained as below.

### Luminous Intensity



### CIE Chromaticity Diagram



Notes:

1. All ranks will be included per delivery, rank ratio will be based on the chip distribution.
2. Pb content <1000 PPM.
3. Luminous intensity measurement allowance  $\pm 5\%$ .
4. Chromaticity coordinates measurement allowance  $\pm 0.005$ .
5. To designate luminous intensity ranks or chromaticity bins, please contact OPTEK.

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## OVSRWAC1R6



### Standard Bins ( $I_F = 20 \text{ mA}$ )

Lamps are sorted to luminous intensity ( $I_v$ ) and chromaticity coordinates (x, y) bins shown.

Orders for OVSRWAC1R6 may be filled with any or all bins contained as below.

### Chromaticity Coordinates

Rank		L2				L3				L4			
Chromaticity Coordinates	x	0.2692	0.2713	0.2739	0.2718	0.2718	0.2739	0.2765	0.2744	0.2744	0.2765	0.2791	0.2770
	y	0.2361	0.2350	0.2397	0.2408	0.2408	0.2397	0.2444	0.2455	0.2455	0.2444	0.2491	0.2502
Rank		L5				L6				L7			
Chromaticity Coordinates	x	0.2770	0.2791	0.2817	0.2796	0.2796	0.2817	0.2843	0.2822	0.2822	0.2843	0.2869	0.2848
	y	0.2502	0.2491	0.2538	0.2550	0.2550	0.2538	0.2586	0.2597	0.2597	0.2586	0.2633	0.2644

Rank		L8			
Chromaticity Coordinates	x	0.2848	0.2869	0.2895	0.2874
	y	0.2644	0.2633	0.2680	0.2691

Rank		M2				M3				M4			
Chromaticity Coordinates	x	0.2713	0.2736	0.2761	0.2739	0.2739	0.2761	0.2787	0.2766	0.2765	0.2787	0.2813	0.2791
	y	0.2350	0.2338	0.2385	0.2397	0.2397	0.2385	0.2433	0.2444	0.2444	0.2433	0.2480	0.2491
Rank		M5				M6				M7			
Chromaticity Coordinates	x	0.2791	0.2813	0.2838	0.2817	0.2817	0.2838	0.2864	0.2843	0.2843	0.2864	0.2889	0.2869
	y	0.2491	0.2480	0.2527	0.2538	0.2538	0.2527	0.2575	0.2586	0.2586	0.2575	0.2622	0.2633

Rank		M8			
Chromaticity Coordinates	x	0.2869	0.2889	0.2915	0.2895
	y	0.2633	0.2622	0.2670	0.2680

Rank		N2				N3				N4			
Chromaticity Coordinates	x	0.2736	0.2757	0.2782	0.2761	0.2761	0.2782	0.2807	0.2787	0.2787	0.2807	0.2833	0.2813
	y	0.2338	0.2327	0.2374	0.2385	0.2385	0.2374	0.2422	0.2433	0.2433	0.2422	0.2470	0.2480
Rank		N5				N6				N7			
Chromaticity Coordinates	x	0.2813	0.2833	0.2858	0.2838	0.2838	0.2858	0.2883	0.2864	0.2864	0.2883	0.2908	0.2889
	y	0.2480	0.2470	0.2517	0.2527	0.2527	0.2517	0.2565	0.2575	0.2575	0.2565	0.2612	0.2622

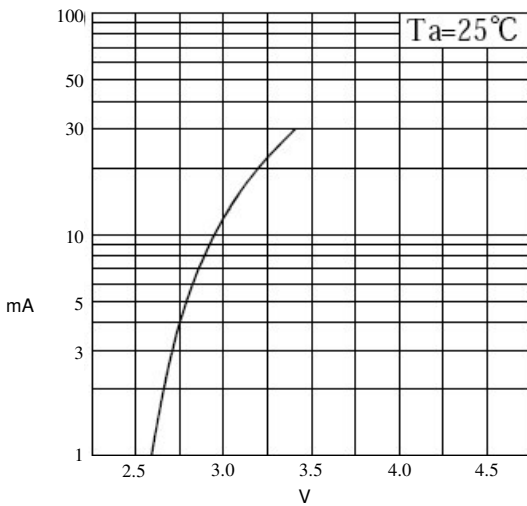
Rank		N8			
Chromaticity Coordinates	x	0.2889	0.2908	0.2933	0.2915
	y	0.2622	0.2612	0.2660	0.2670

#### Notes:

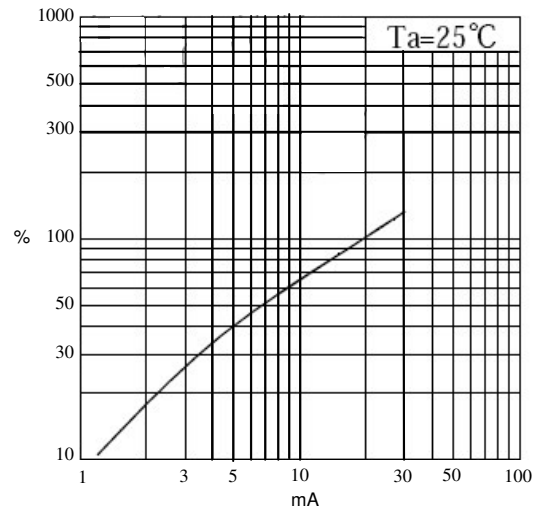
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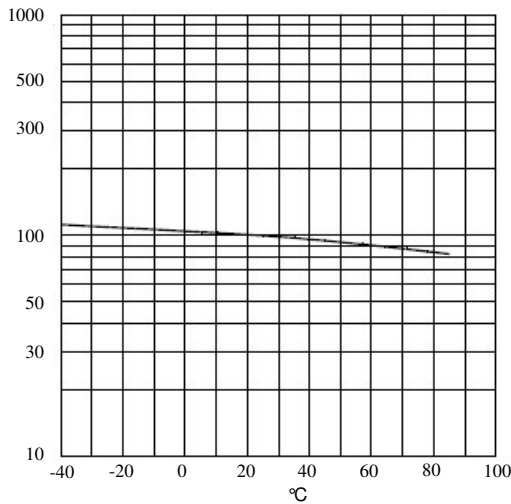
### Typical Electro-Optical Characteristics Curves



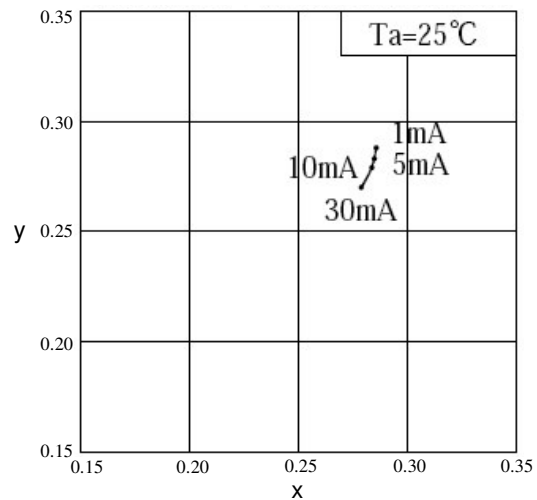
Forward Current vs Forward Voltage



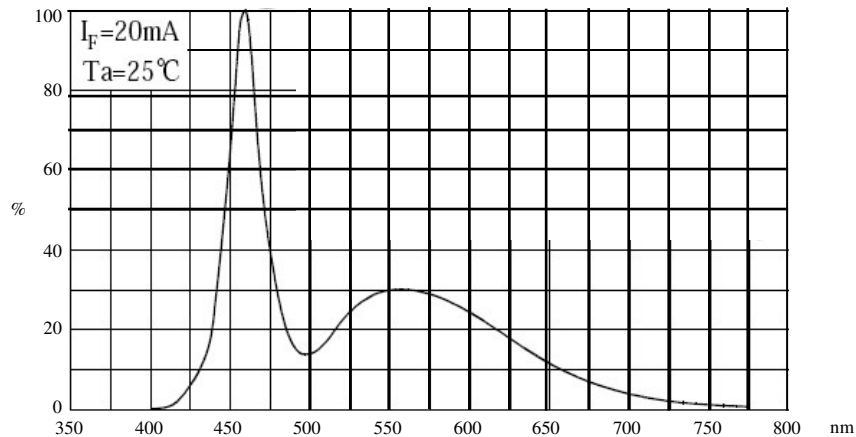
Relative Luminous Intensity vs Forward Current



Relative Luminous Intensity vs Ambient Temperature



Chromaticity vs Forward Current



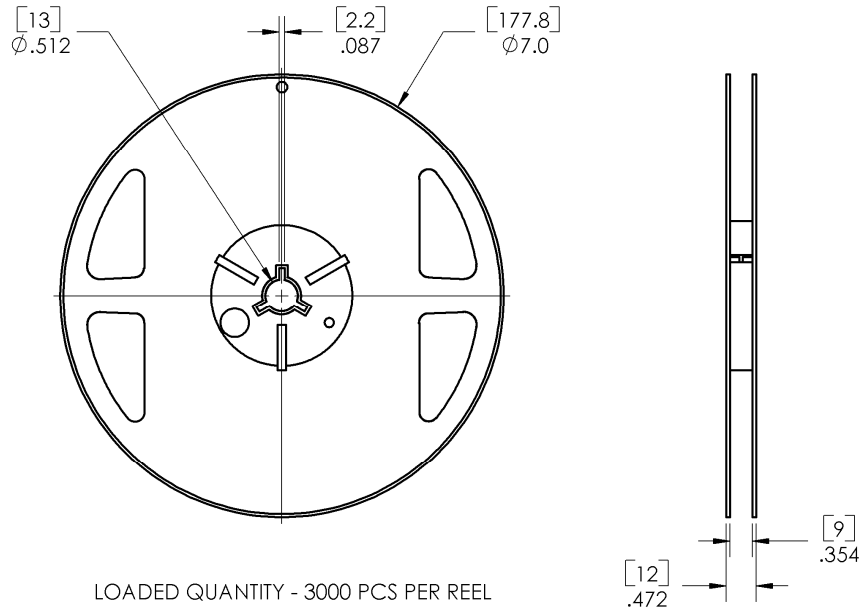
Relative Emission Intensity

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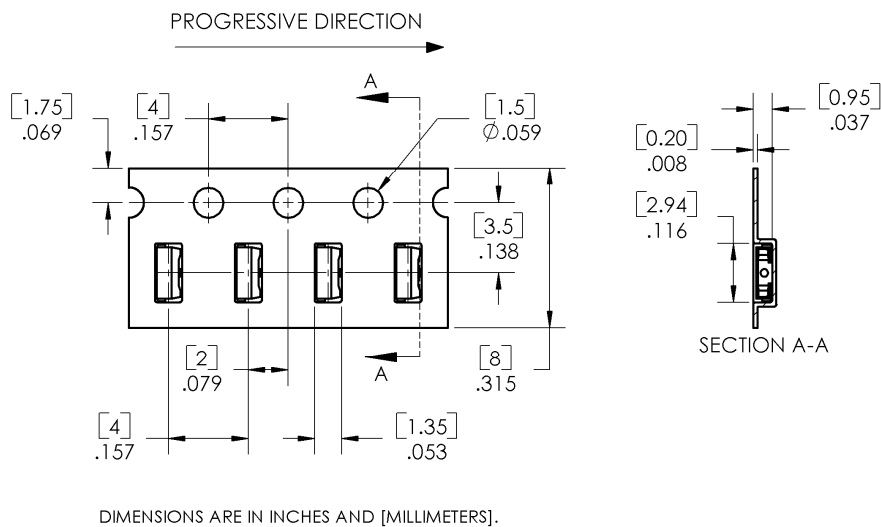
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Packing Information: 7-inch reel

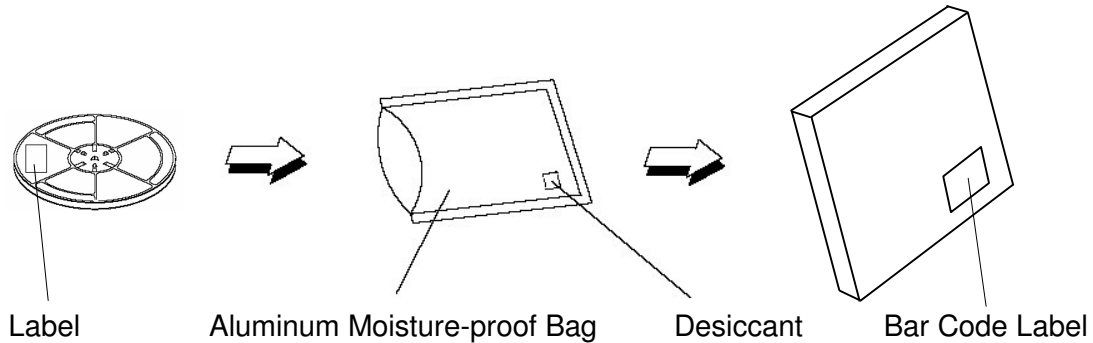


Carrier Tape Dimensions: Loaded quantity 3000 pieces per reel

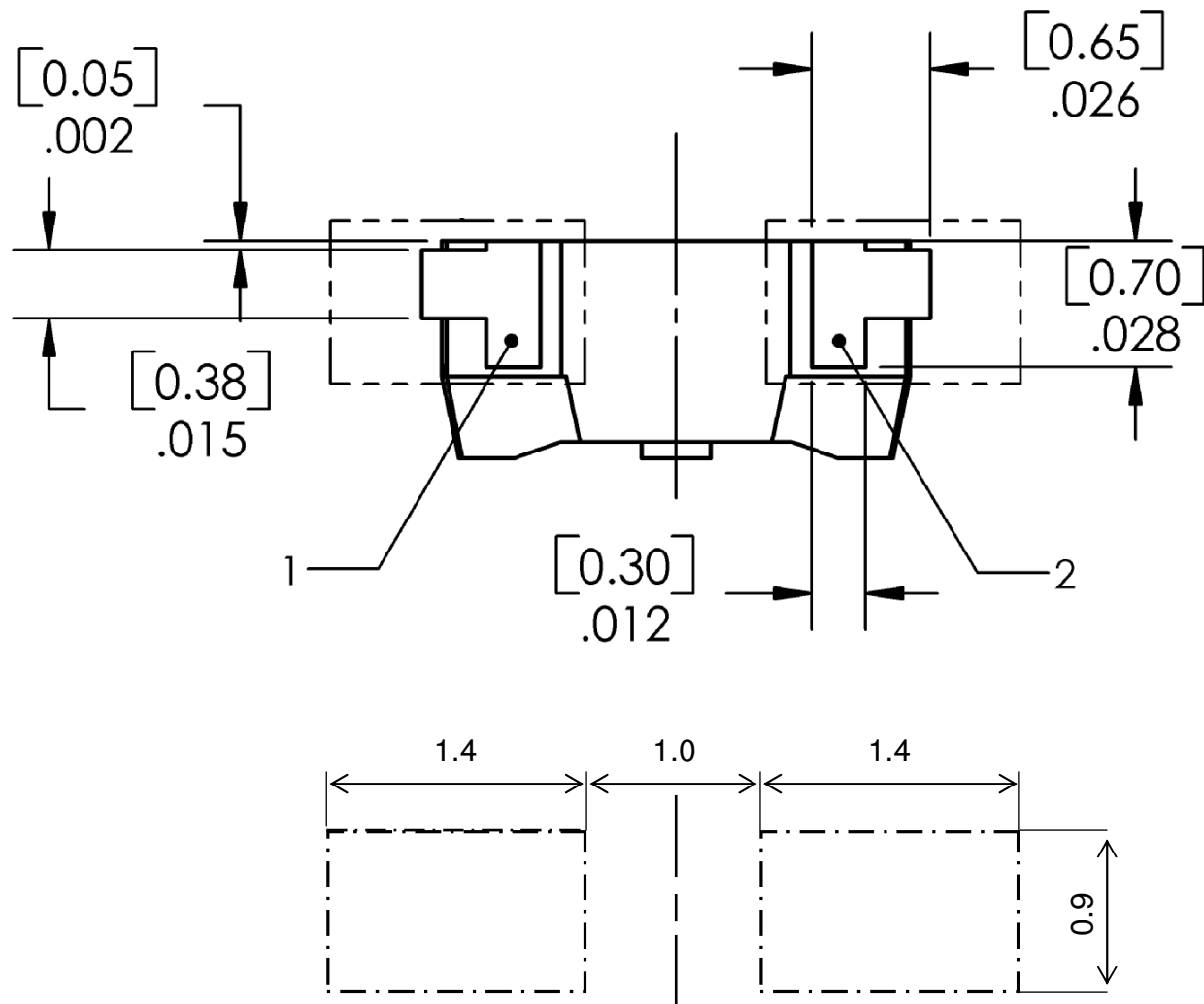


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Moisture Resistant Reel Packaging

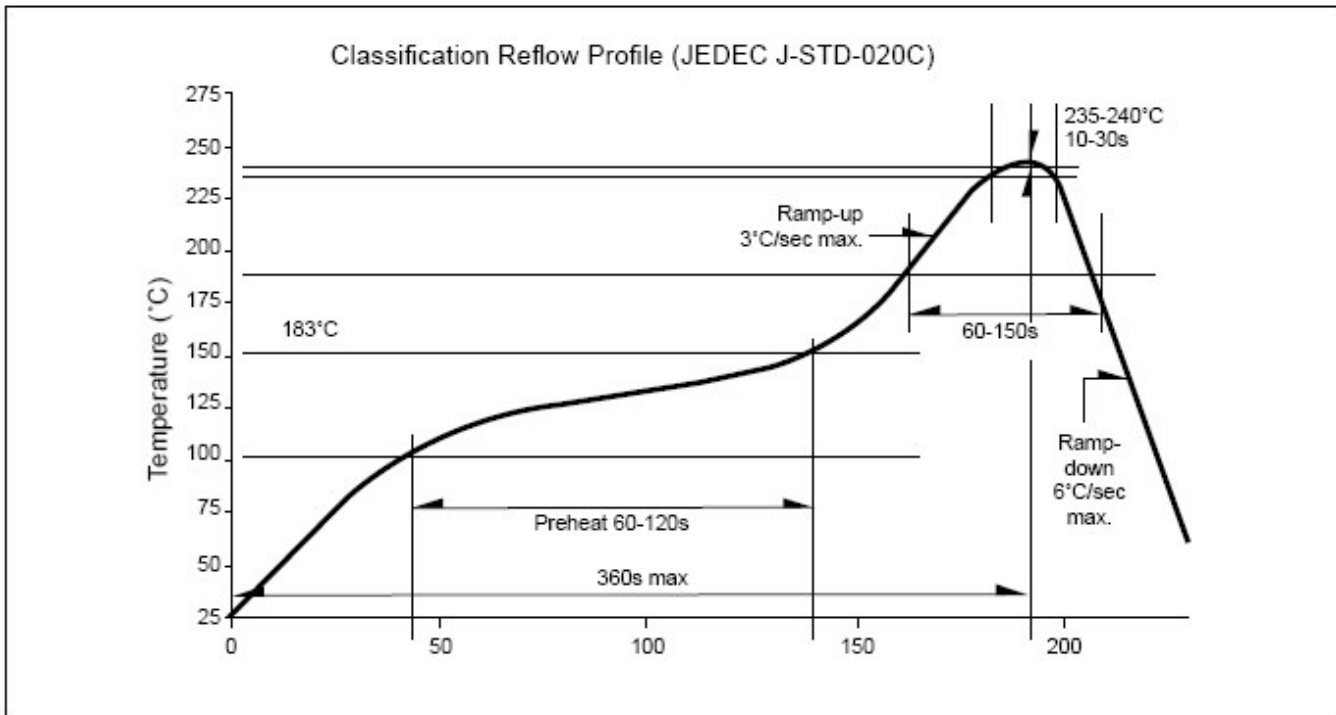


Recommended Soldering Pattern (Unit: mm)

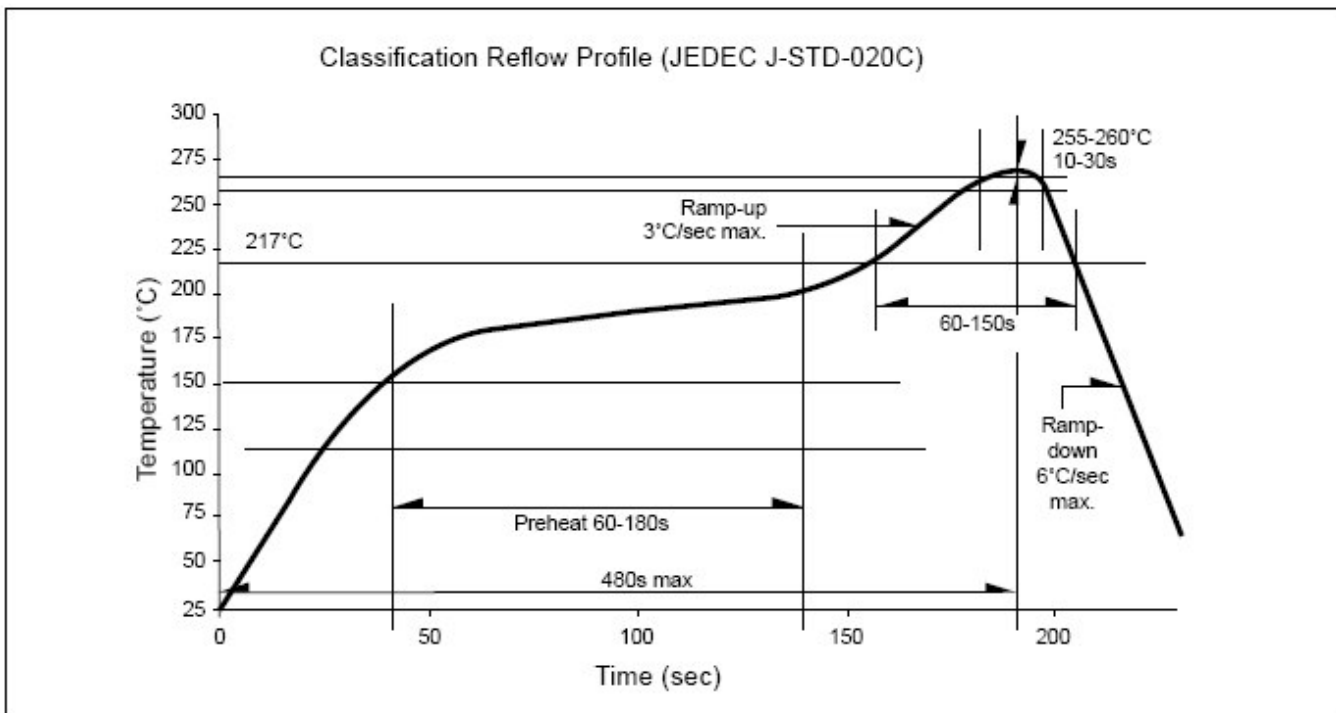


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**Recommended Sn-Pb IR-Reflow Soldering Profile**



**Recommended Pb-free Soldering Profile**



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