

White Surface Mount LED Lamp

OVSRWAC1R6

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

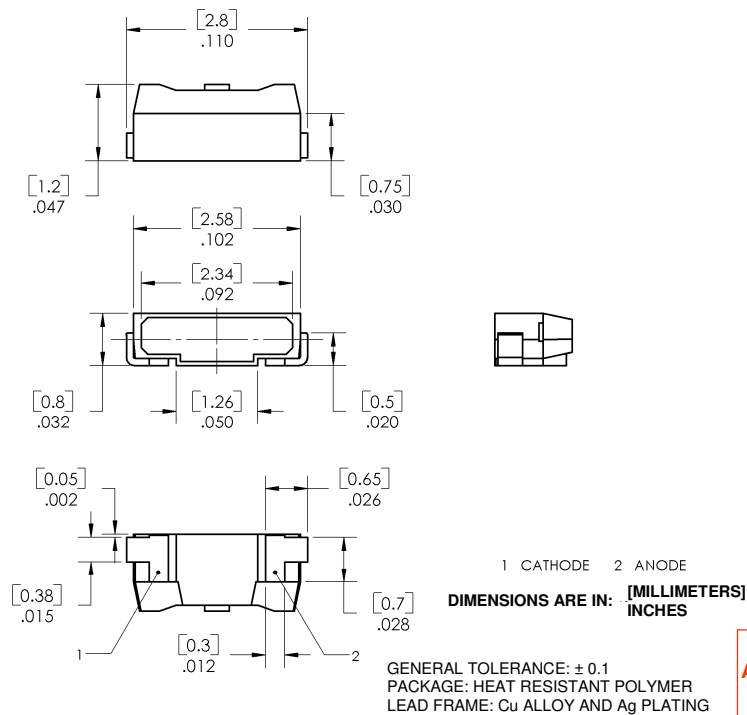


The **OVSRWAC1R6** is ideal for backlighting LCD screens and for coupling with light guides. This design combines high optical efficiency with wide viewing angles ($x = 120^\circ$, $y = 110^\circ$) and low power consumption.

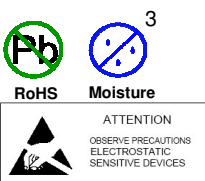
Applications

- 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° C (on metal core PCB) unless otherwise noted

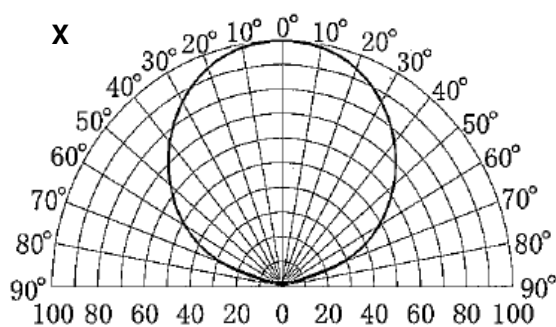
| | |
|---|---------------|
| Storage Temperature Range | -40 ~ +100° C |
| Operating Temperature Range | -30 ~ +85° C |
| Reverse Voltage | 5 V |
| Continuous Forward Current | 30 mA |
| Forward Current Reduction | -0.50 mA/° C |
| Peak Forward Current (10% Duty Cycle, Pulse Width 10msec) | 80 mA |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

Electrical Characteristics

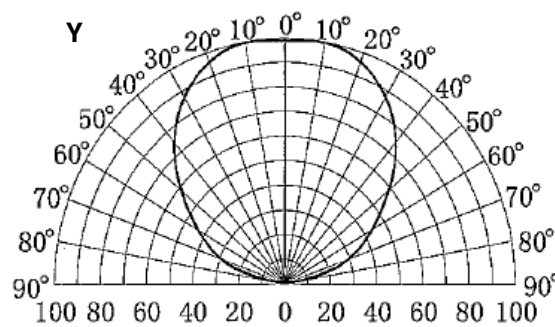
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| SYMBOL | PARAMETER | MIN | TYP | MAX | UNITS | CONDITIONS |
|--------------------|--------------------------|--|------------------|------|-------|------------------------|
| I _V | Luminous Intensity | 1860 | 2000 | 2210 | mcd | I _F = 20 mA |
| V _F | Forward Voltage | 3.0 | 3.2 | 3.4 | V | I _F = 20 mA |
| I _R | Reverse Current | ---- | ---- | 2.0 | μA | V _R = 5 V |
| 2 Θ _{1/2} | 50% Power Angle | ---- | x=120° y=110° | ---- | deg | I _F = 20 mA |
| x | Chromaticity Coordinates | Ranking Table Applies (see Pages 3 and 5) | | | ---- | I _F = 20 mA |
| y | | | | | ---- | I _F = 20 mA |

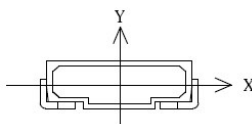
Radiation Pattern



Relative Luminous Intensity



Relative Luminous Intensity



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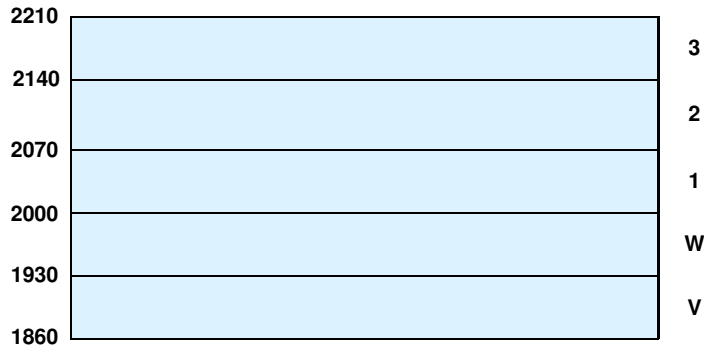
OVSRWAC1R6



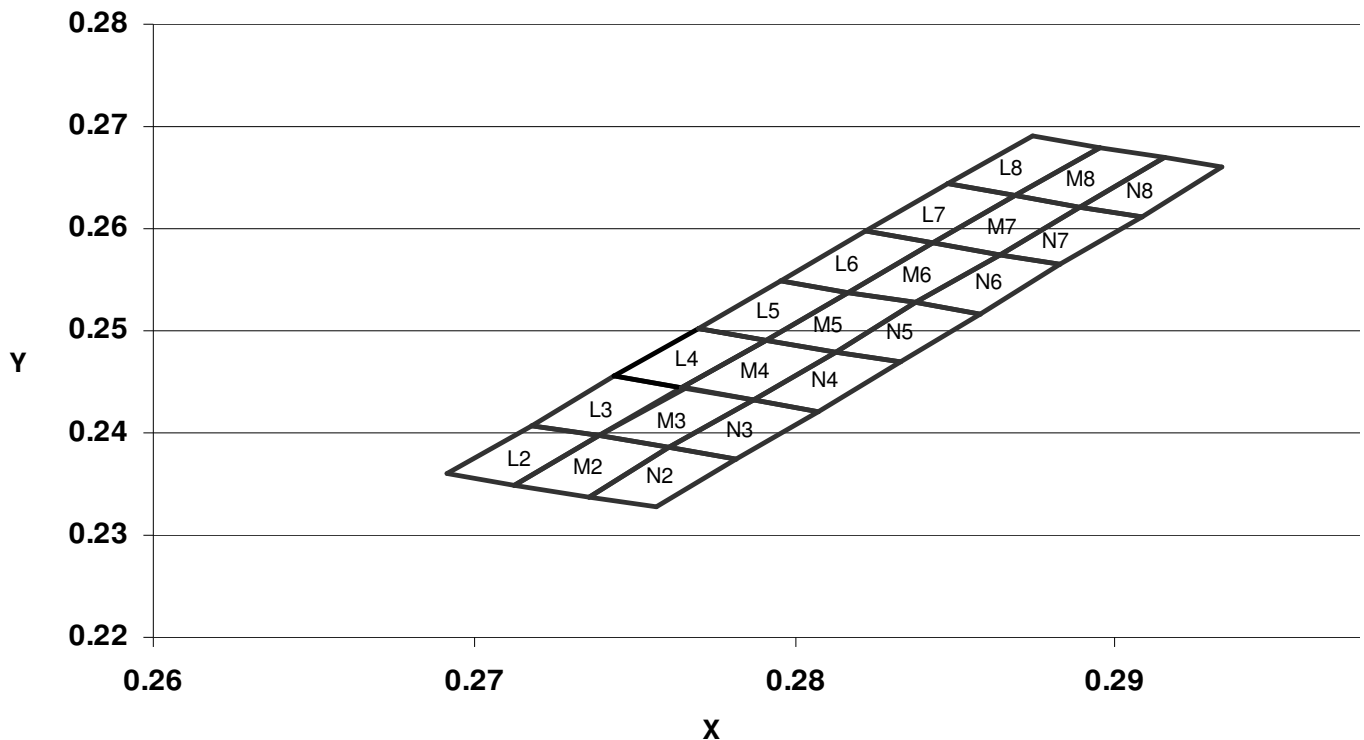
Standard Bins ($I_F = 20 \text{ mA}$)

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 ± 0.005 .
5. To designate luminous intensity ranks or chromaticity bins, please contact OPTEK.

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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.

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 |

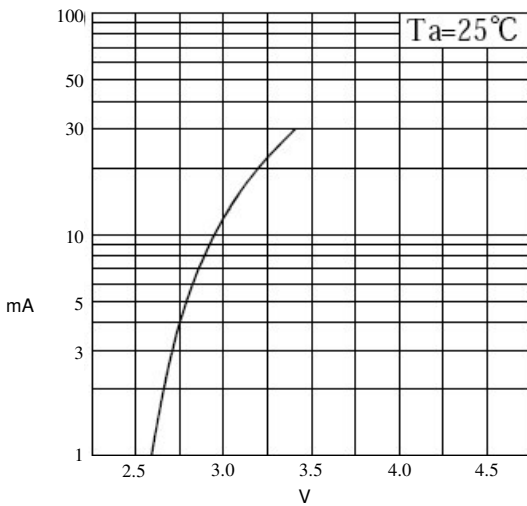
| Rank | | N8 | | | |
|--------------------------|---|--------|--------|--------|--------|
| Chromaticity Coordinates | x | 0.2889 | 0.2908 | 0.2933 | 0.2915 |
| | y | 0.2622 | 0.2612 | 0.2660 | 0.2670 |

Notes:

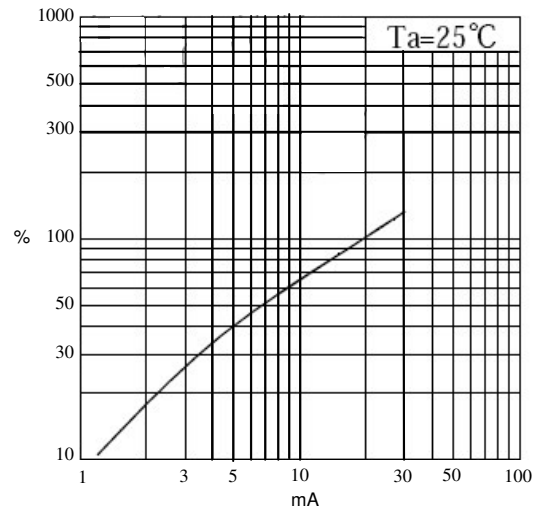
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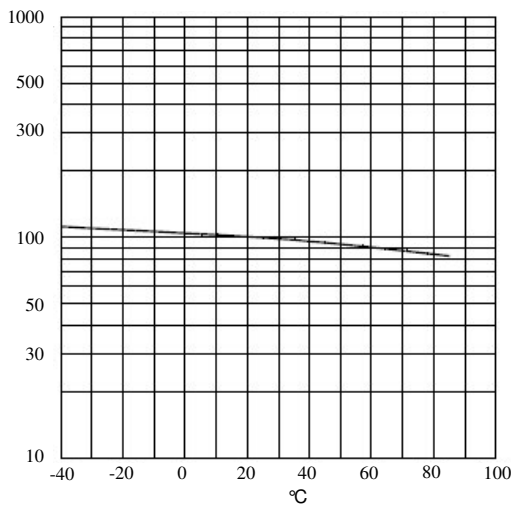
Typical Electro-Optical Characteristics Curves



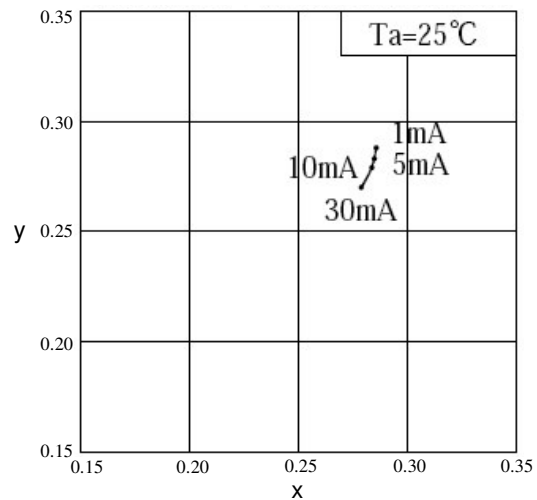
Forward Current vs Forward Voltage



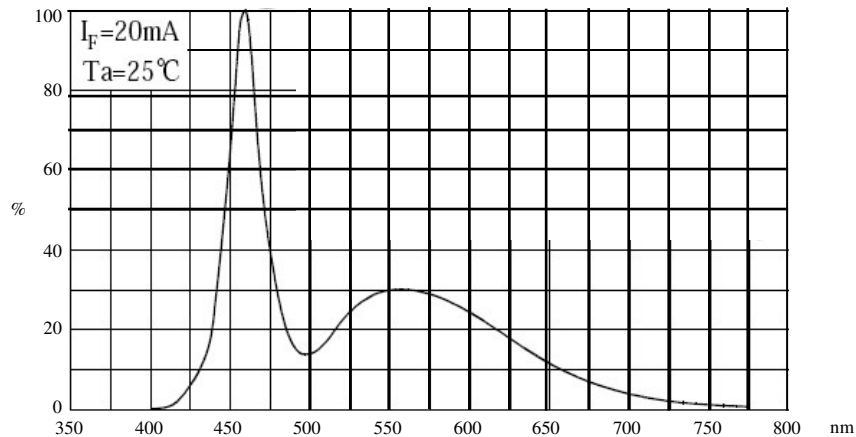
Relative Luminous Intensity vs Forward Current



Relative Luminous Intensity vs Ambient Temperature



Chromaticity vs Forward Current



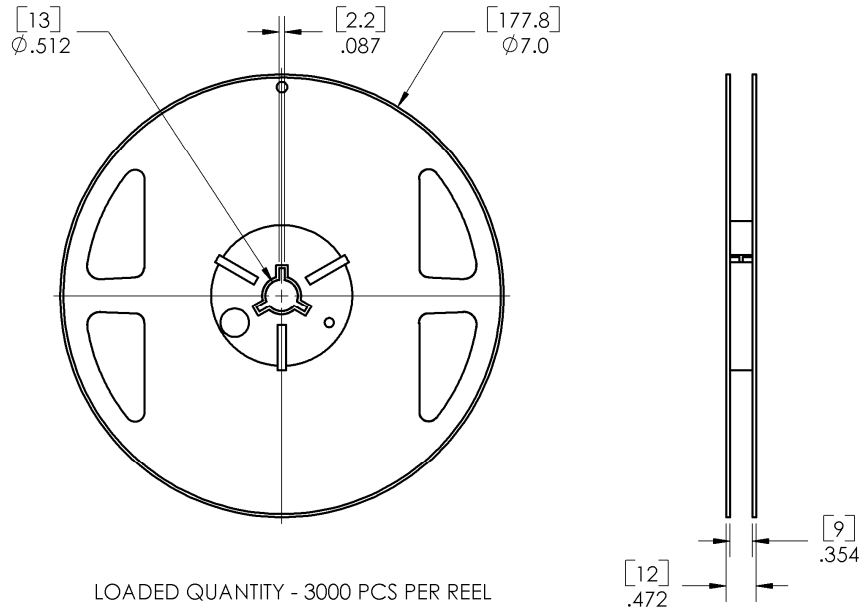
Relative Emission Intensity

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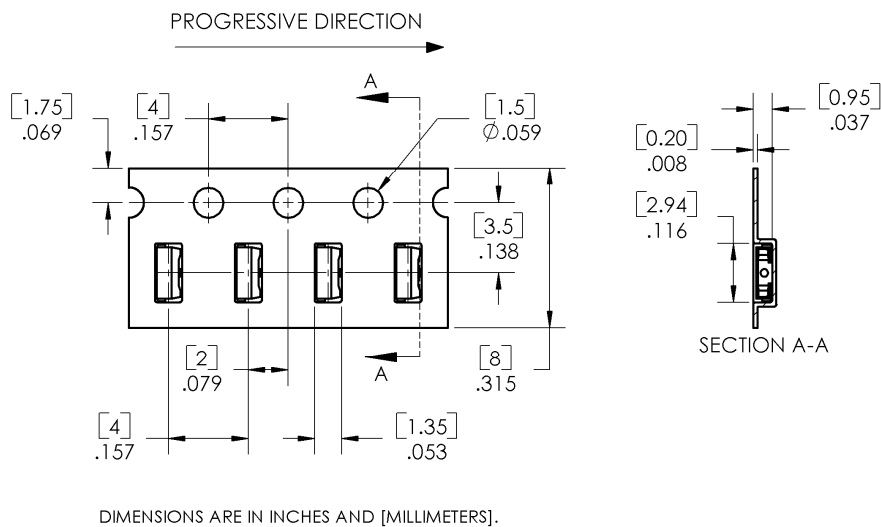
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Packing Information: 7-inch reel

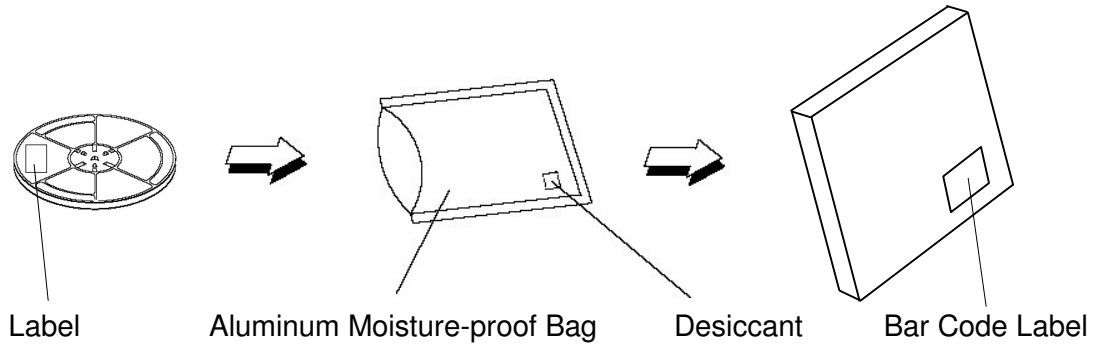


Carrier Tape Dimensions: Loaded quantity 3000 pieces per reel

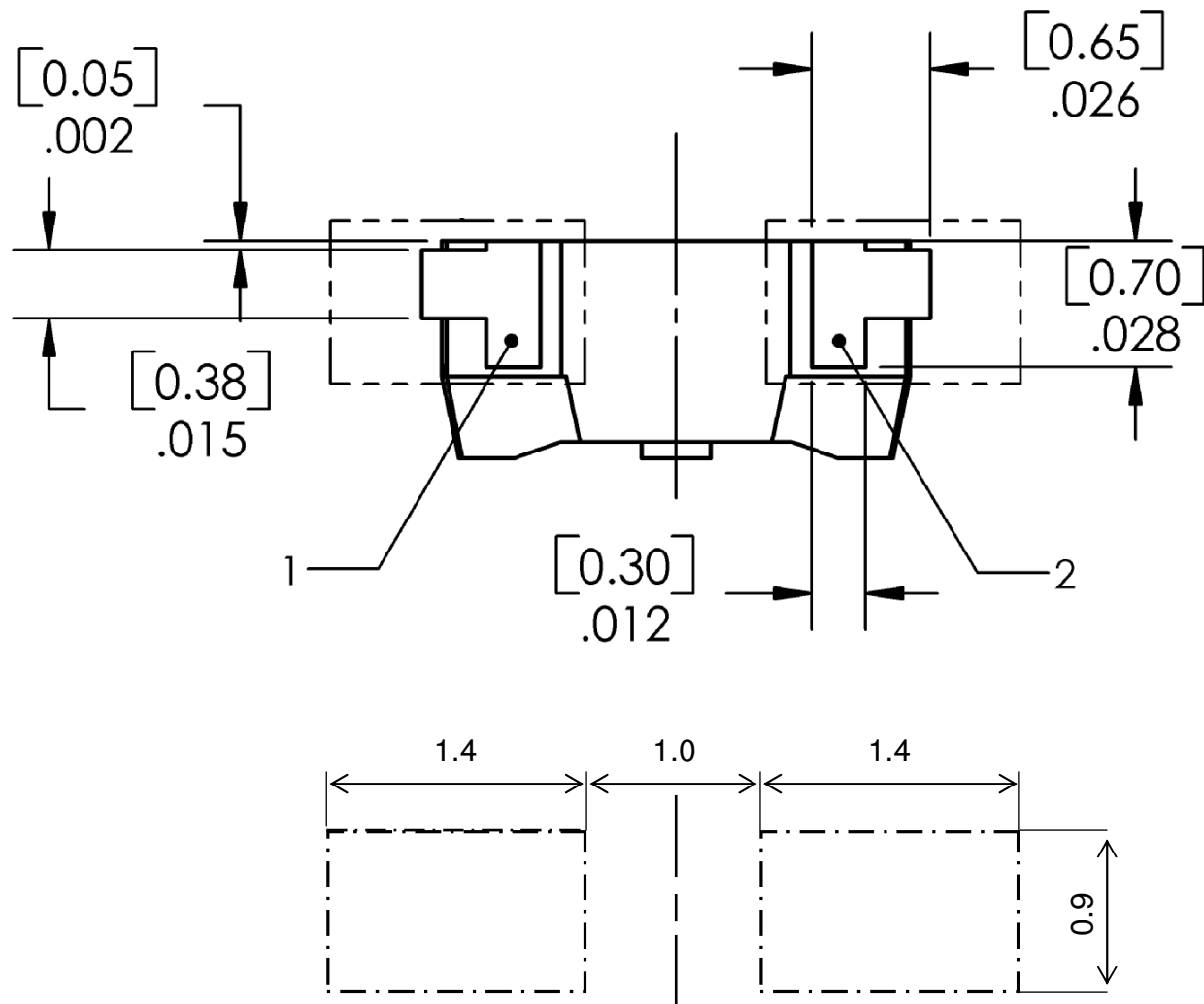


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Moisture Resistant Reel Packaging

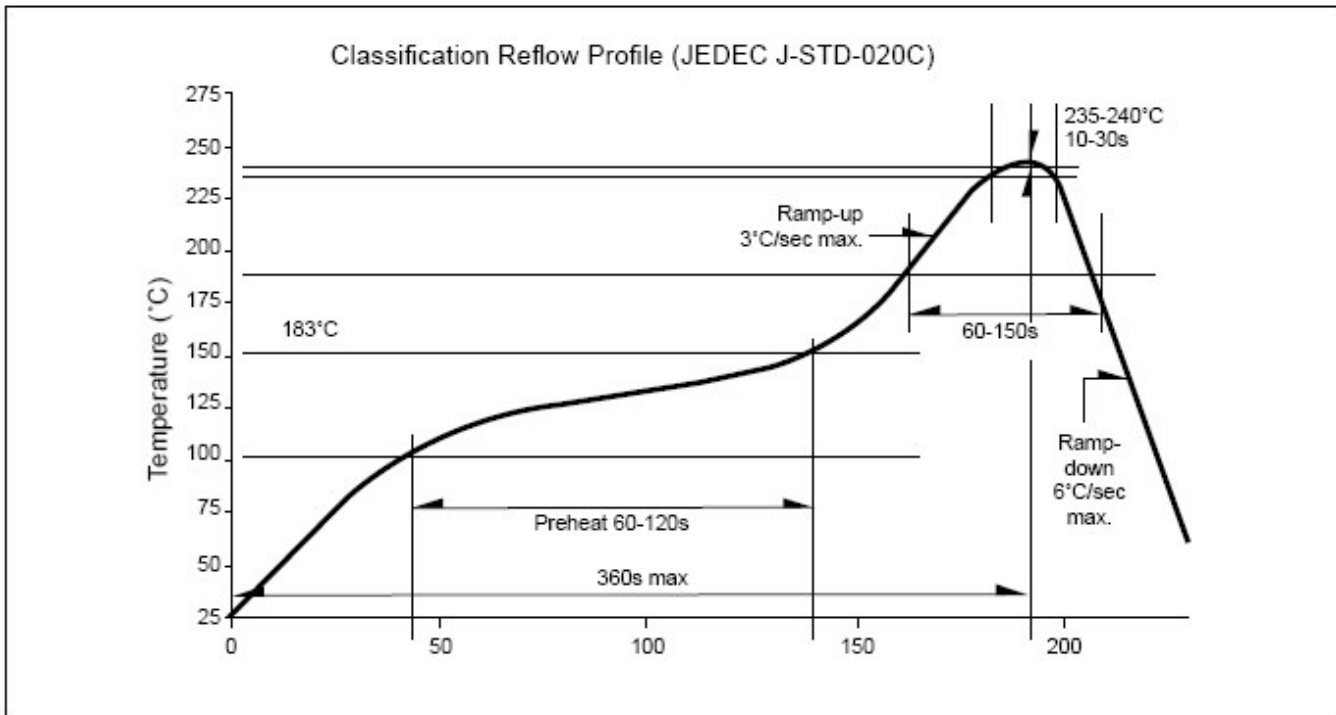


Recommended Soldering Pattern (Unit: mm)

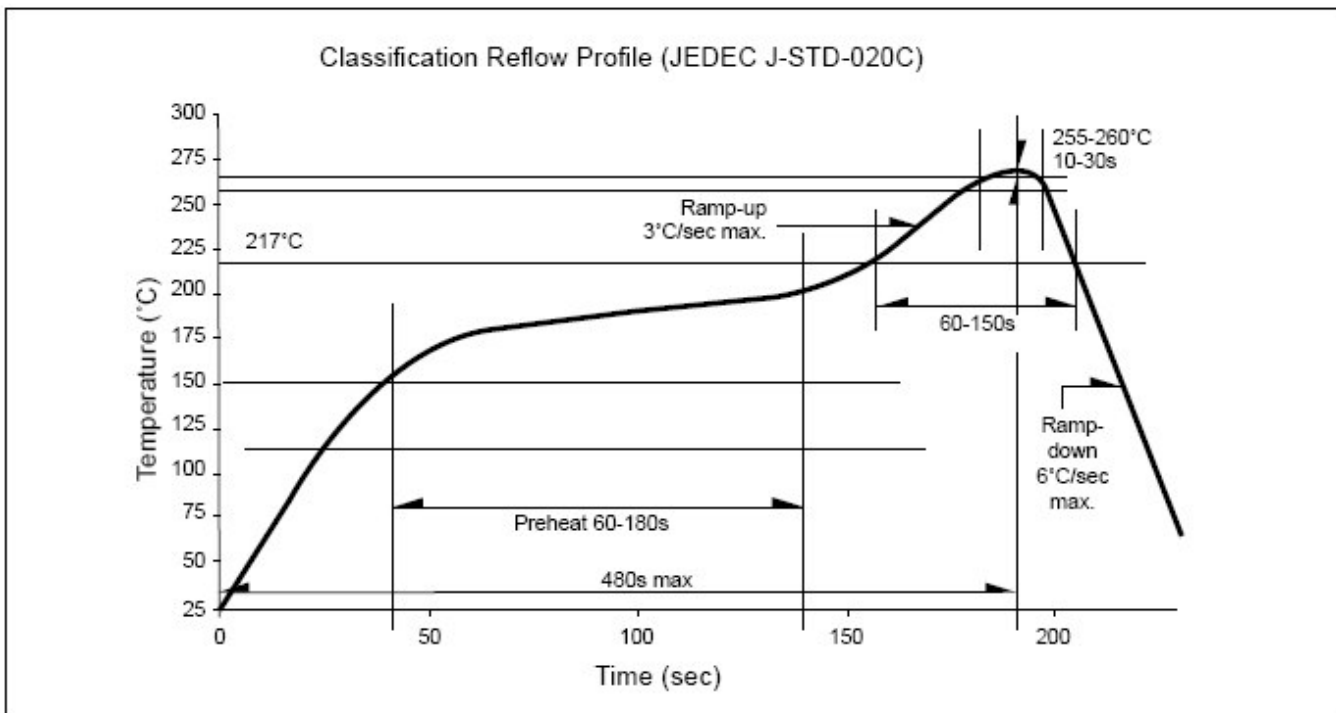


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Recommended Sn-Pb IR-Reflow Soldering Profile



Recommended Pb-free Soldering Profile



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