

Mini Half-Watt SMD 3.25 mm x 3.2 mm (115° Viewing Angle)

OVS5MxBCR4x Series



Features:

- Compact Package Outline of 3.25 mm x 3.2 mm
- Robust energy-efficient design with long operating life
- Low thermal resistance
- Exceptional spatial uniformity
- Compatible to IR reflow soldering
- High Lumens output

Description:

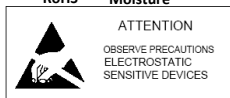
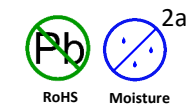
The mini-half watt is an energy-efficient packaged LED source that offers high luminance, and a long operating lifespan. This device offers a 115° viewing angle and an ultra-low profile (1.9 mm) making it highly suitable for conventional lighting and specialized applications.

Applications:

- Automotive exterior and interior lighting
- Architectural indoor and outdoor lighting
- General lighting
- Display Backlighting
- Electronic signs and signals

Optical Characteristics (T_A = 25° C unless otherwise noted)

PART NUMBER	VIEWING ANGLE	EMITTED COLOR	TYP LUMINOUS FLUX (lm)	FORWARD VOLTAGE V _F @ 140 mA	POWER DISSIPATION @ 150 mA	LENS COLOR
OVS5MRBCR4A	115°	Super Red (632 nm)	13.9	2.3	0.35 W	Clear
OVS5MABCR4A		Amber (624 nm)	23.5	2.3	0.35 W	
OVS5MABCR4B		Amber (615 nm)	26.8	2.3	0.35 W	
OVS5MYBCR4A		Yellow (589 nm)	23.5	2.3	0.35 W	



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

General Note

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Electrical Specifications

Absolute Maximum Ratings ($T_A = 25^\circ\text{C}$ unless otherwise noted)

	Red, Amber, Yellow
DC Forward Current	200 mA
Peak Pulsed Forward Current ¹	300 mA
Reverse Voltage	12 V @ 10 μA
Junction Temperature ²	125 $^\circ\text{C}$
Power Dissipation	750 mW
Operating Temperature	-40° ~ +115° C
Storage Temperature	-40° ~ +125° C
ESD (JEDEC-JESD22-A114F)	Class 2
MSL (IPC / JEDEC J-STD-020C)	2a / 672 Hrs
Thermal Resistance *	
Junction / Ambient, $R_{th\ JA\ real}$	110 K/W
Junction / Solder point $R_{th\ JS\ real}$	60 K/W
Electrical Thermal Resistance *	
Junction / Ambient, $R_{th\ JA\ el}$	100 K/W
Junction / Solder point $R_{th\ JS\ el}$	60 K/W

* Mounted on FR4 PCB pad size $\geq 16\text{ mm}^2$ per pad

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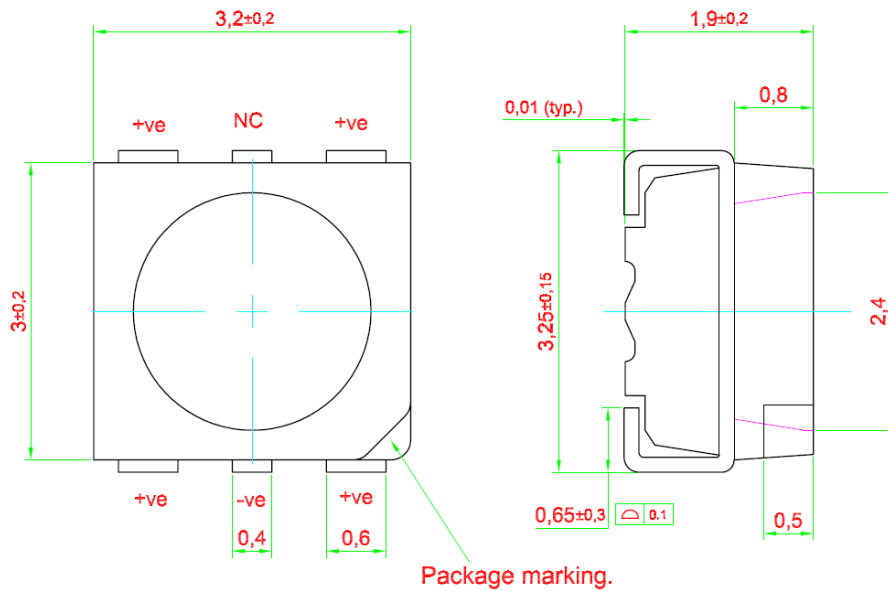


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Electrical Specifications

Optical and Electrical Characteristics—Red, Amber, Yellow ($I_F = 140 \text{ mA}$, $T_A = 25^\circ \text{ C}$)

SYMBOL	PARAMETER	MIN	TYP	MAX	UNITS	
V_F	Forward Voltage	1.9	2.6	2.5	V	
Φ	Luminous Flux	Super Red (632nm)	9.35	13.9	20.6	lm
		Amber (624nm)	18.1	23.5	30.6	
		Amber (615nm)	20.6	26.6	34.8	
		Yellow (589nm)	18.1	23.5	30.6	
λ	Dominant Wavelength	Red	627	633	639	nm
		Amber	612	619	627	
		Yellow	586	590	595	
I_R	Reverse Current @ 12 V	----	10	----	μA	
$2 \Theta_{\frac{1}{2}}$	50% Power Angle	----	115	----	deg	



General Tolerances
± 0.1

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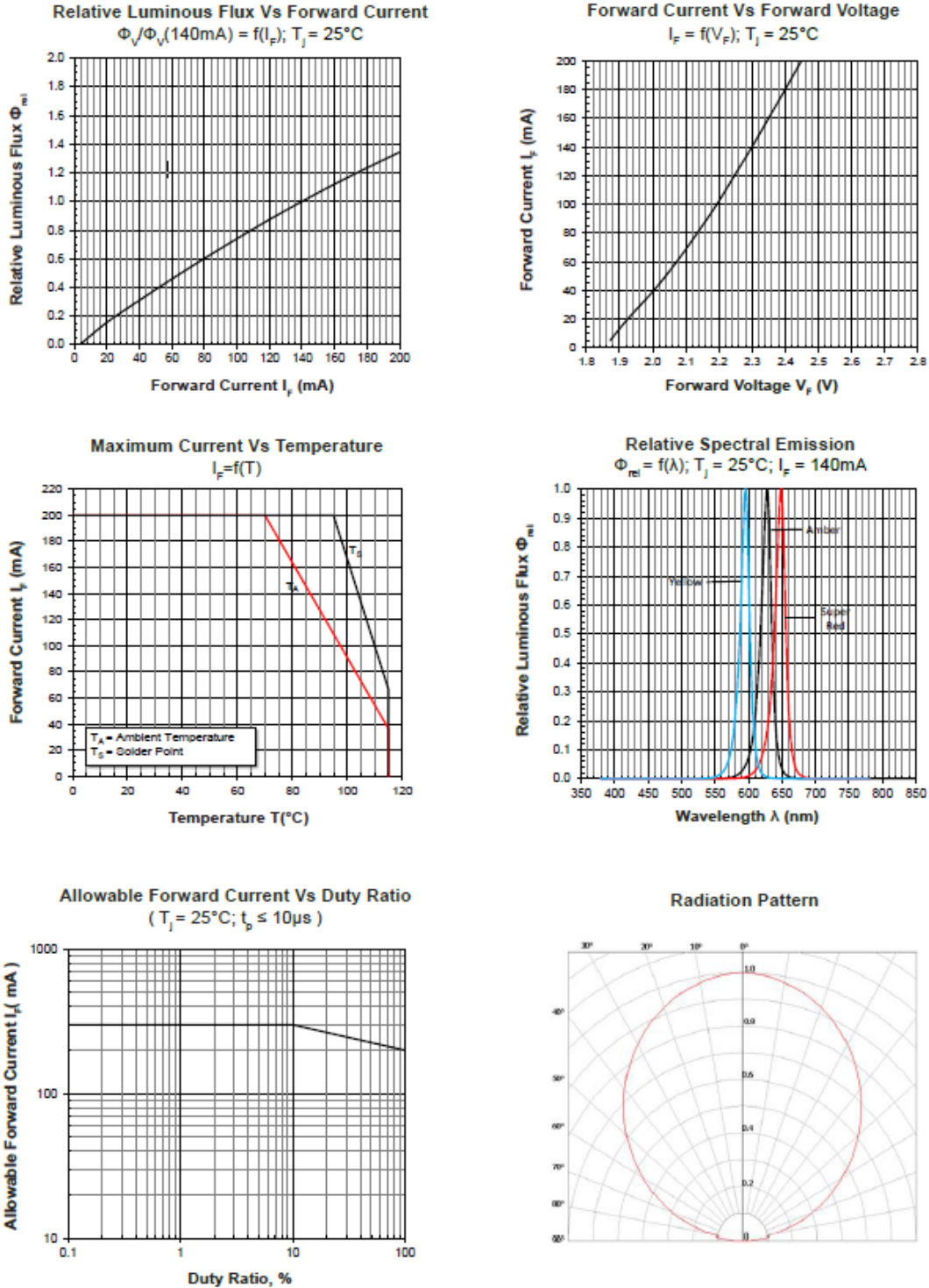
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Performance



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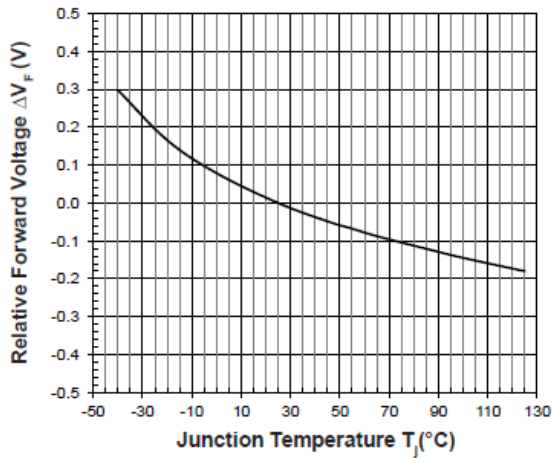
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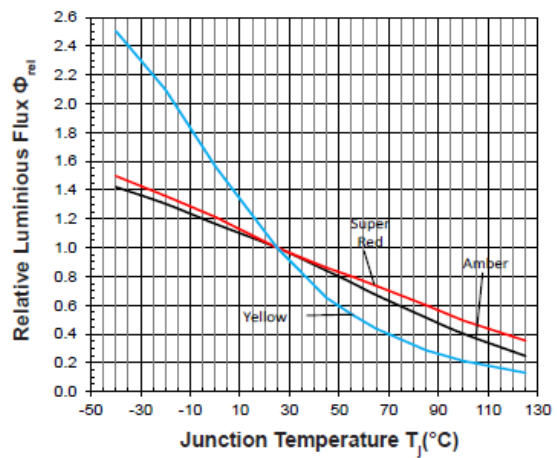


Performance

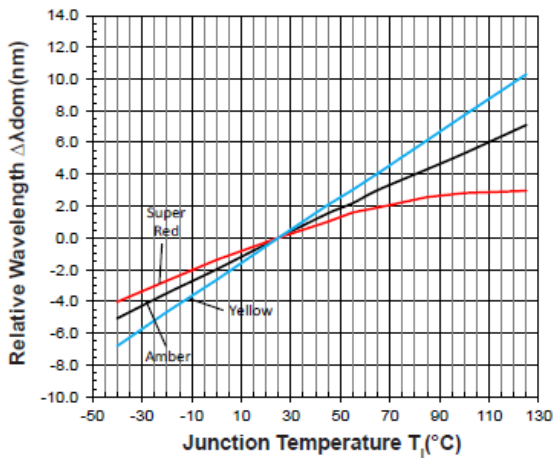
Relative Forward Voltage Vs Junction Temperature
 $\Delta V_F = V_F - V_F(25^\circ\text{C}) = f(T_j); I_F = 140\text{mA}$



Relative Luminous Flux Vs Junction Temperature
 $\Phi_V/\Phi_V(25^\circ\text{C}) = f(T_j); I_F = 140\text{mA}$



Relative Wavelength Vs Junction Temperature
 $\Delta \lambda_{dom} = \lambda_{dom} - \lambda_{dom}(25^\circ\text{C}) = f(T_j); I_F = 140\text{mA}$



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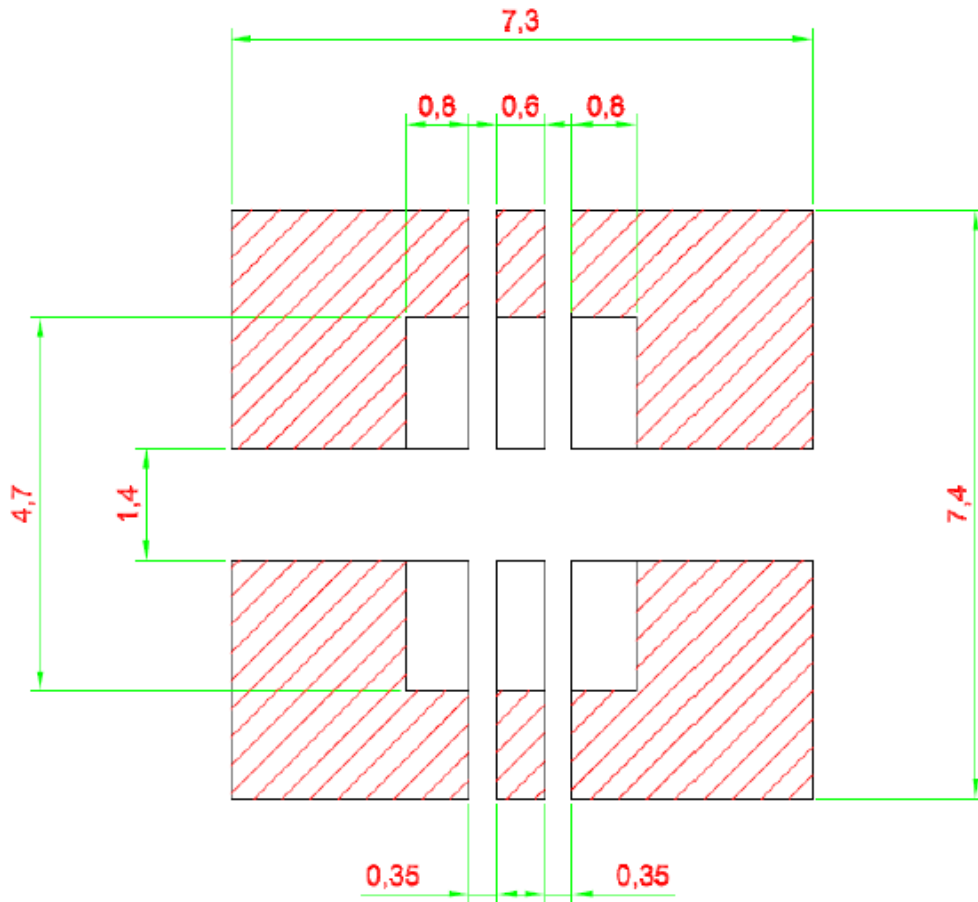
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Solder Pad Design

Note: Metal core circuit board (MCPCB) is highly recommended for high density applications. FR-4 board is recommended for other applications



Exposed Cu for soldering



Cu area with solder mask for heat dissipation.

General Note

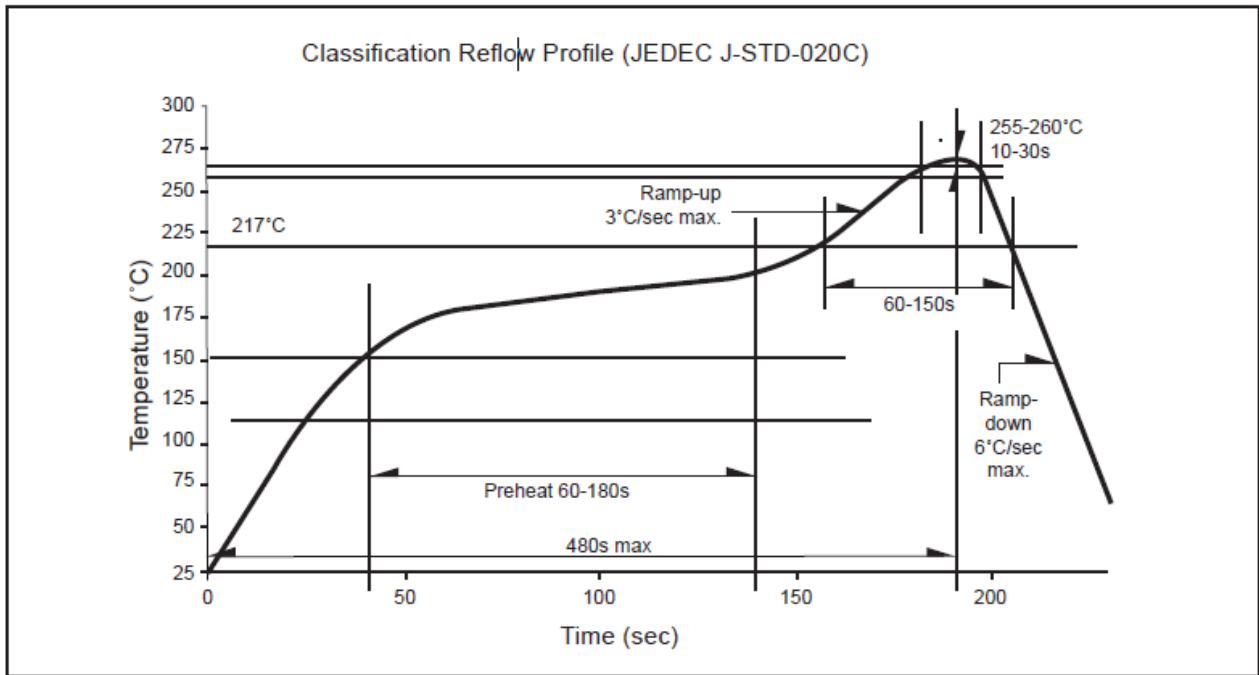
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Recommended Pb-free Soldering Profile



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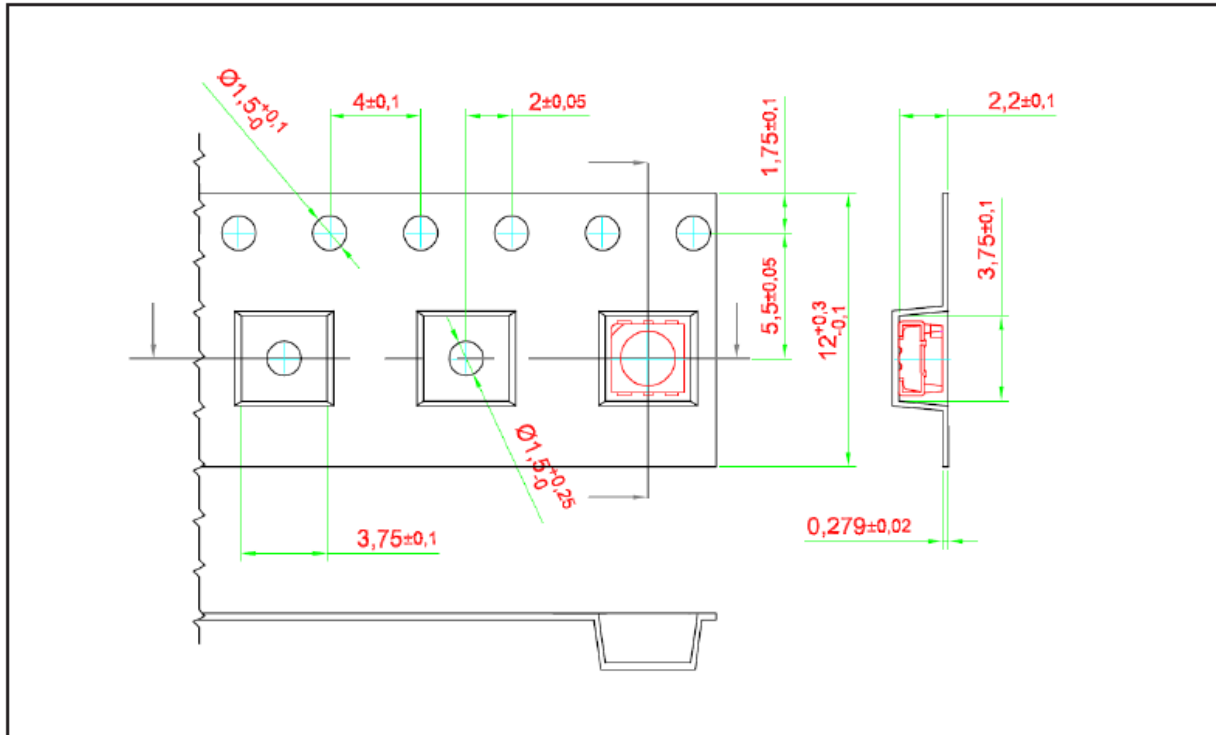
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Taping and orientation

- Reels come in quantity of 1000 units.
- Reel diameter is 180 mm.



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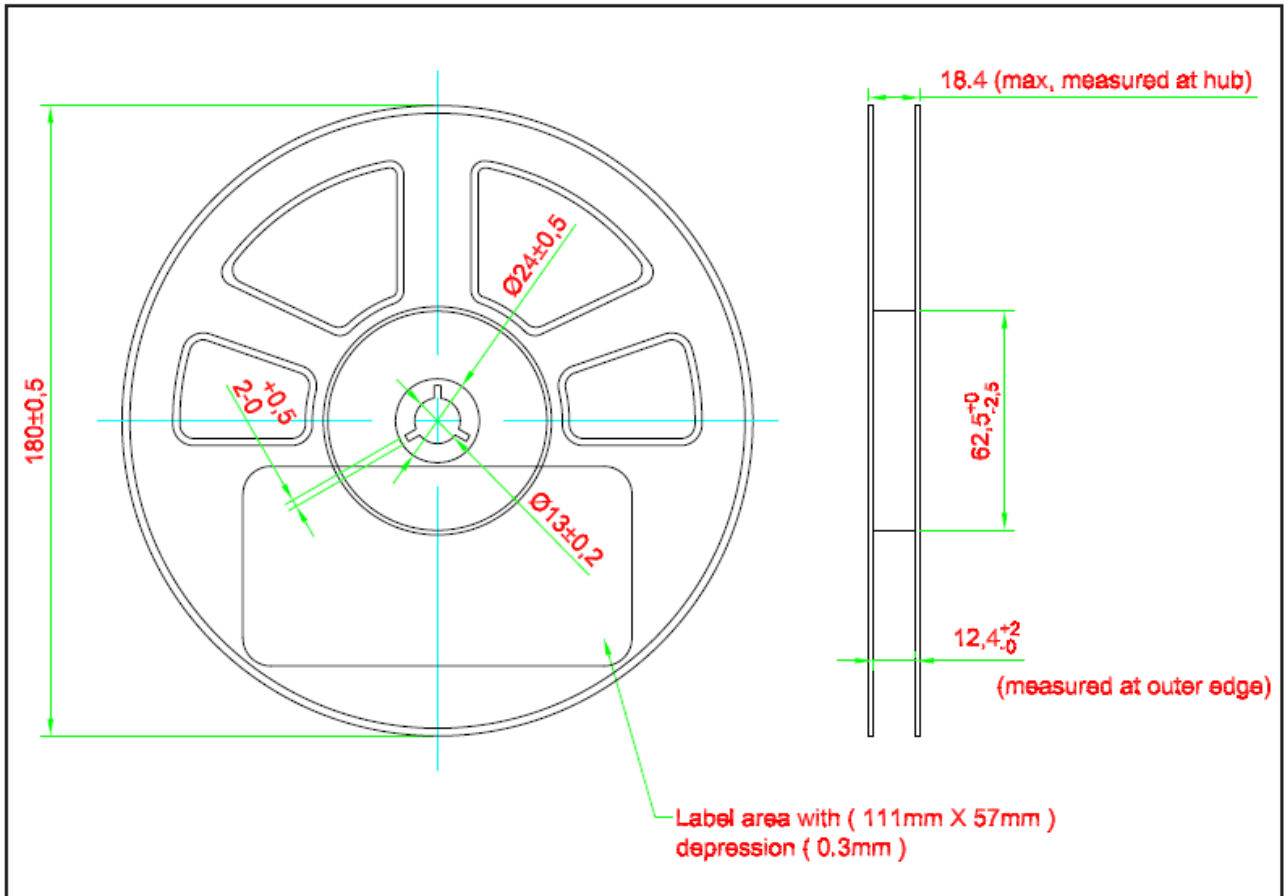
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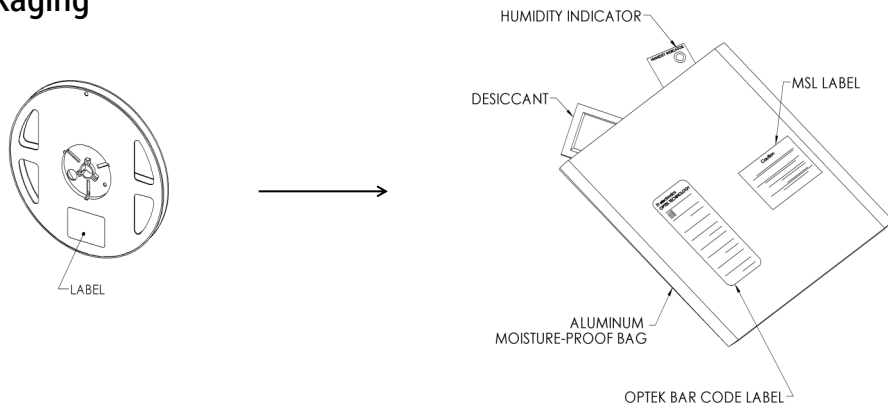


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Packaging Specification



Moisture Resistant Packaging



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