Mini Half-Watt SMD 3.5mm (120° Viewing Angle)

OVS5MxBCR4 Series

Features:

- Compact Package Outline of 3.5 x 3.5 x 1.2 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 120° viewing angle and an ultra-low profile (1.2 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

Part Number	Viewing Angle	Emitted Color	Typ. Luminous Flux (lm)	Forward Voltage V_F	Power Dissipation @ 150 mA	Lens Color
OVS5MWBCR4 Obsolete per EOL1043	120	White	50	3.4	0.51 W	Clear
OVS5MWWBCR4 Obsolete per EOL1043		Warm White	30	3.6	0.54 W	
OVS5MBBCR4 Obsolete per EOL1043		Blue	8.2	3.4	0.51 W	
OVS5MGBCR4 Obsolete per EOL1021		Green	22	3.4	0.51 W	

Part Number	Viewing Angle	Emitted Color	Typ. Luminous Intensity (mcd)	Forward Voltage V_F	Power Dissipation @ 150 mA	Lens Color
OVS5MRBCR4 Obsolete per EOL1042 (Replacement OVS5MRBCR4A)	120	Red	7150	2.2	0.33 W00.33	Clear
OVS5MABCR4 Obsolete per EOL1043 (Replacement OVS5MABCR4A)		Amber	7150	2.2	0.33 W	
OVS5MYBCR4 Obsolete per EOL1024		Yellow	7150	2.2	0.33 W	

RoHS Moisture 2a

ATTENTION
OBSERVE PRECAUTIONS ELECTROSTATIC SENSITIVE DEVICES

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

General Note
TT Electronics reserves the right to make changes in product specification without notice or liability. All information is subject to TT Electronics' own data and is considered accurate at time of going to print.

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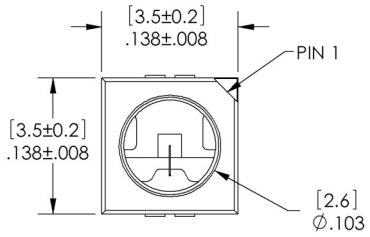
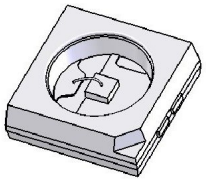
Electrical Specifications

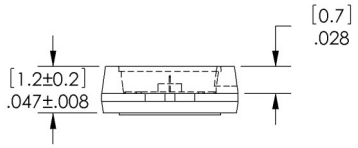
Absolute Maximum Ratings (T_A = 25° C unless otherwise noted)

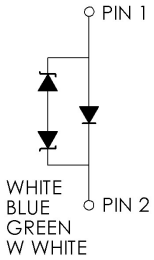
	Red, Amber, Yellow	Green, Blue	White	Warm White
DC Forward Current	200 mA	180 mA	180 mA	180 mA
Peak Pulsed Forward Current[1]	1000 mA	350 mA	350 mA	350 mA
Reverse Voltage	12V @ 10 uA	Not designed for reverse bias	Not designed for reverse bias	Not designed for reverse bias
Junction Temperature[2]	125°C	125°C	125°C	125°C
Power Dissipation	750mW	750mW	750mW	750mW
Storage and Operating Temperature	-40° ~ +100 ° C	-40° ~ +100 ° C	-40° ~ +100 ° C	-40° ~ +100 ° C
ESD (JEDEC-JESD22-A114F)	Class 2	Class 2	Class 2	Class 2
MSL (IPC / JEDEC J-STD-020C)	2a / 672 Hrs	2a / 672 Hrs	2a / 672 Hrs	2a / 672 Hrs

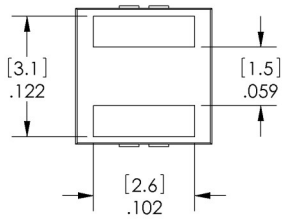
Notes:
1. Pulse width tp ≤ 10µs, Duty cycle = 0.1
2. Thermal Resistance = 5 C/W

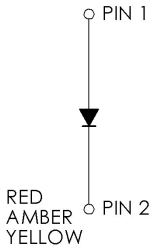












PIN 1	ANODE
PIN 2	CATHODE

DIMENSIONS ARE IN INCHES [MM].

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Optical and Electrical Characteristics - Red, Amber, Yellow (I_F = 140 mA, T_A = 25° C)

SYMBOL	PARAMETER		MIN	TYP	MAX	UNITS
V_F	Forward Voltage		1.9	2.2	2.65	V
Φ	Luminous Intensity	Red	4500	7150	9000	mcd
		Amber				
		Yellow				
λ_D	Dominant Wavelength	Red	620	625	630	nm
		Amber	610	615	621	
		Yellow	585	590	594	
I_R	Reverse Current @ 12 V		----	10	----	µA
2 Θ½	50% Power Angle		----	120	----	deg

Optical and Electrical Characteristics - Blue, Green (I_F = 150 mA, T_A = 25° C)

SYMBOL	PARAMETER		MIN	TYP	MAX	UNITS
V_F	Forward Voltage		3.0	3.4	3.9	V
Φ	Luminous Flux	Blue	6.3	8.2	10.7	lm
		Green	18.1	22.0	30.6	
λ_D	Dominant Wavelength	Blue	460	465	470	nm
		Green	520	525	535	
2 Θ½	50% Power Angle		----	120	----	deg

Optical and Electrical Characteristics - White, Warm White (I_F = 150 mA, T_A = 25° C)

SYMBOL	PARAMETER		MIN	TYP	MAX	UNITS
V_F	Forward Voltage	White	3.0	3.4	4.1	V
		Warm White		3.6		
Φ	Luminous Flux	White	30.6	50	67.2	lm
		Warm White	23.5	30	39.8	
2 Θ½	50% Power Angle		----	120	----	deg

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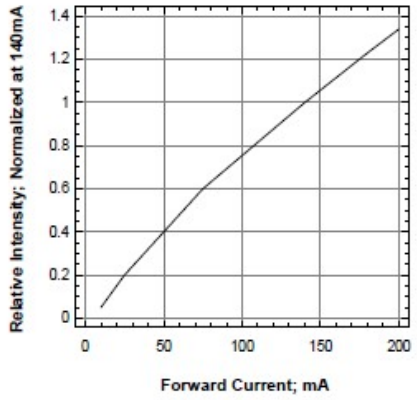
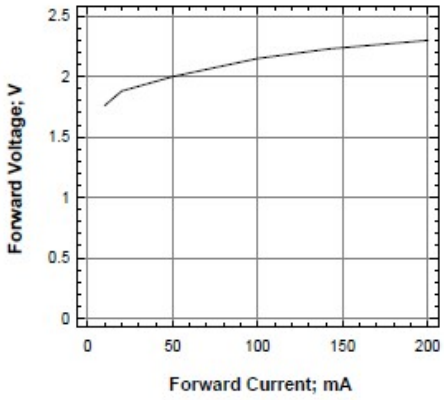
OVS5MABCR4 (Amber), OVS5MRBCR4 (Red) and OVS5MYBCR4 (Yellow)

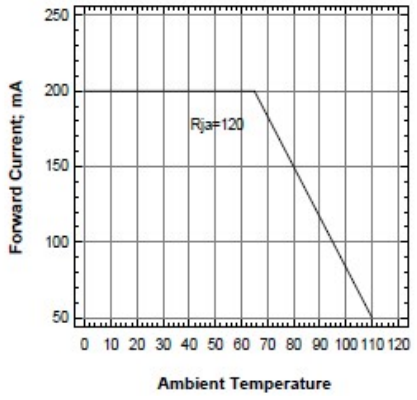
Relative Intensity Vs Forward Current



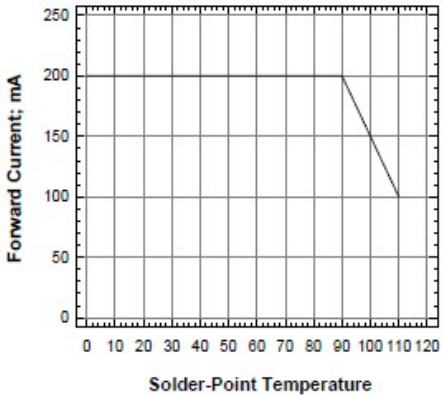
Forward Voltage Vs Forward Current



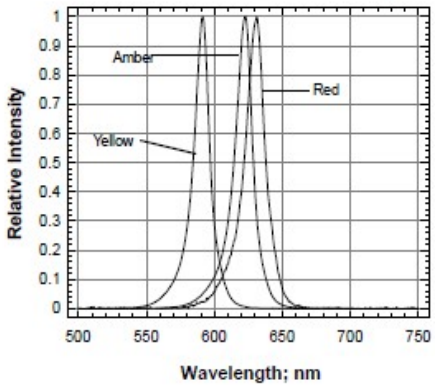
Maximum Current Vs Ambient Temperature



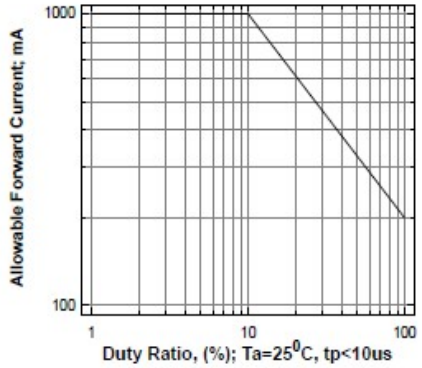
Maximum Current vs Solder-Point Temperature



Relative Intensity Vs Wavelength

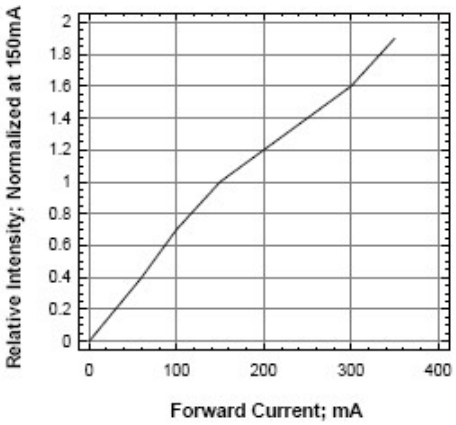


Allowable Forward Current Vs Duty Ratio

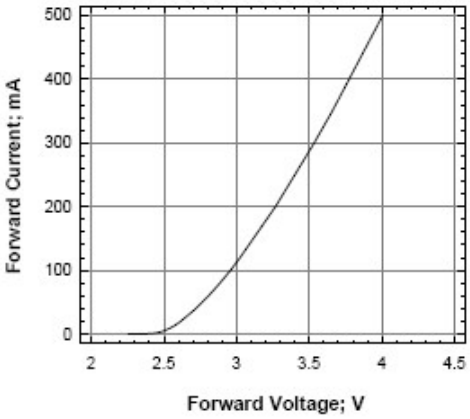


OVS5MBBCR4 (Blue), OVS5MGBCR4 (Green), OVS5MWBCR4 (White) and OVS5MWWBCR4 (Warm White)

Relative Intensity Vs Forward Current

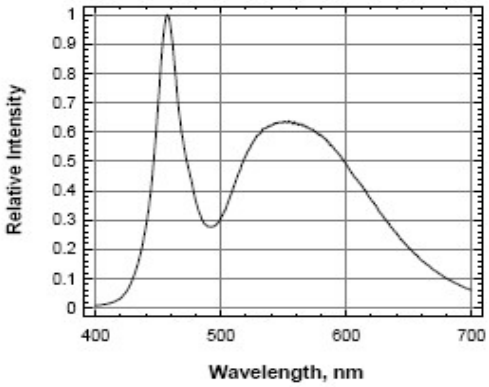


Forward Current vs Forward Voltage



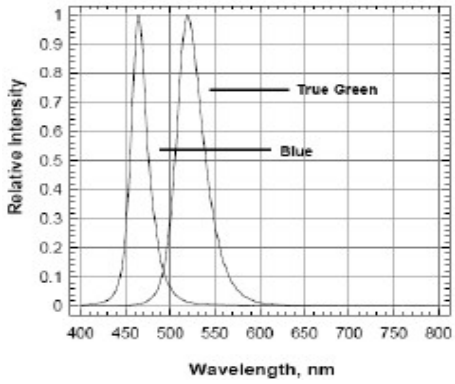
White & Warm White

Relative Intensity Vs Wavelength

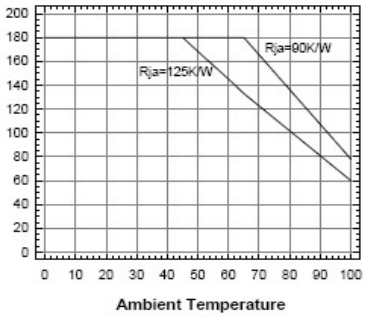


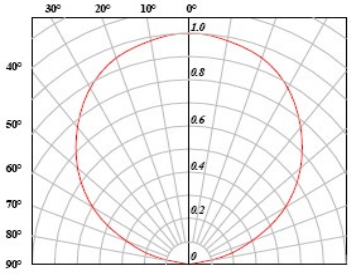
Blue & Green

Relative Intensity Vs Wavelength



Forward Current Vs Ambient Temperature





Beam Angle: All Colors

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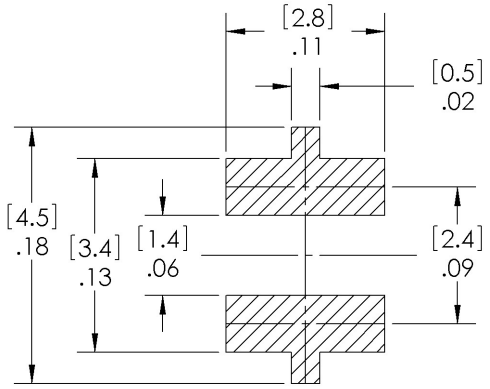
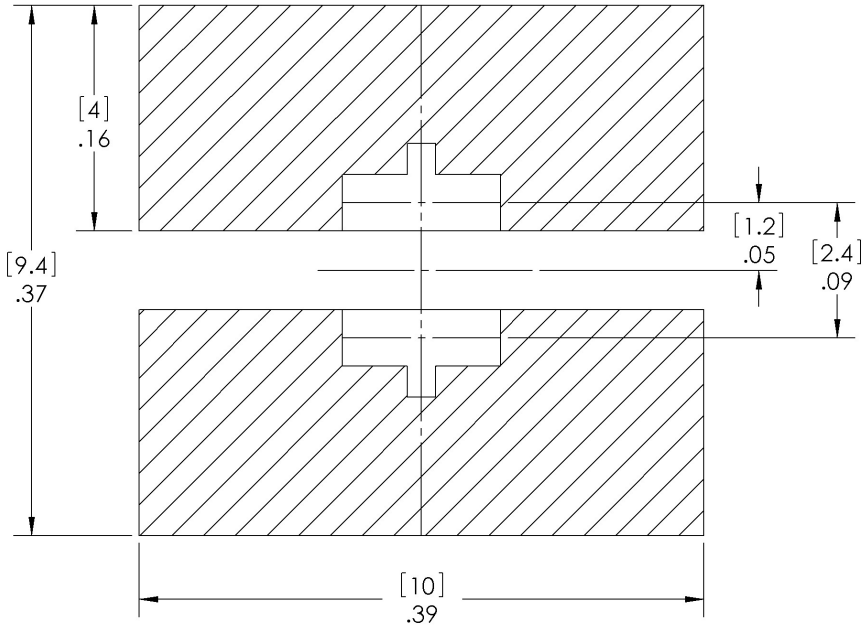
Solder Pad Design

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



Solder Paste Pattern



Copper Pattern

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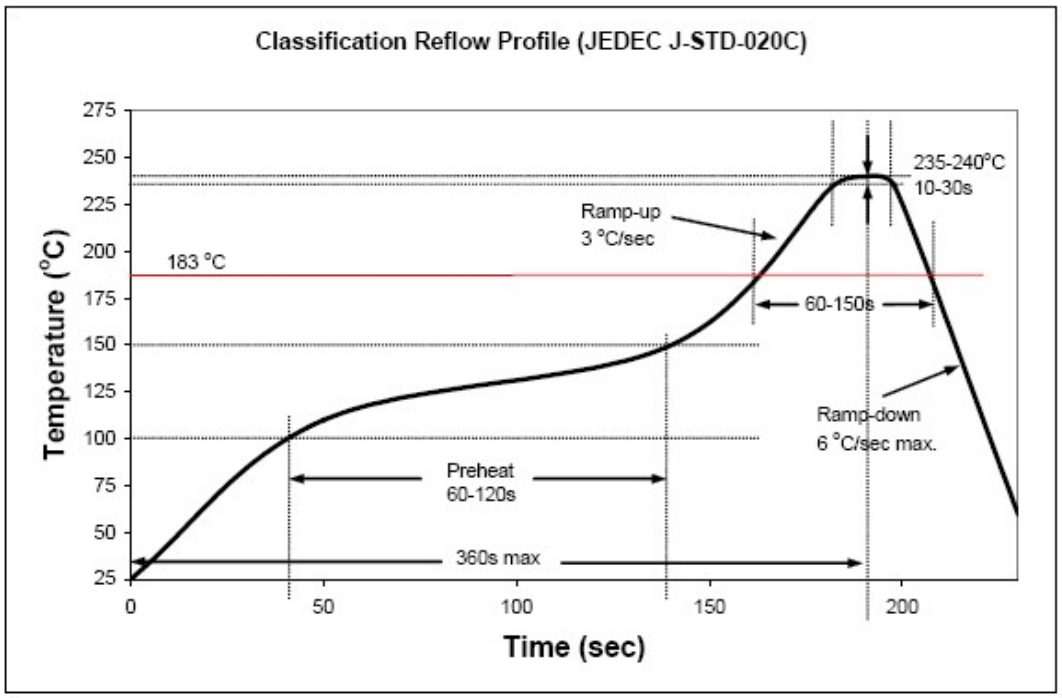
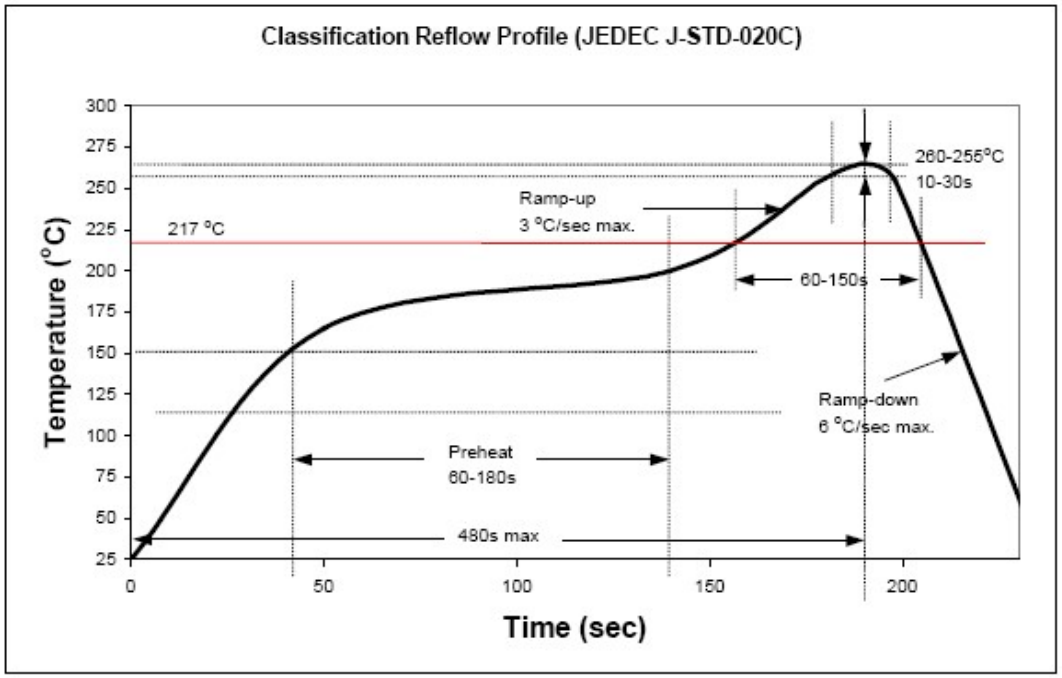
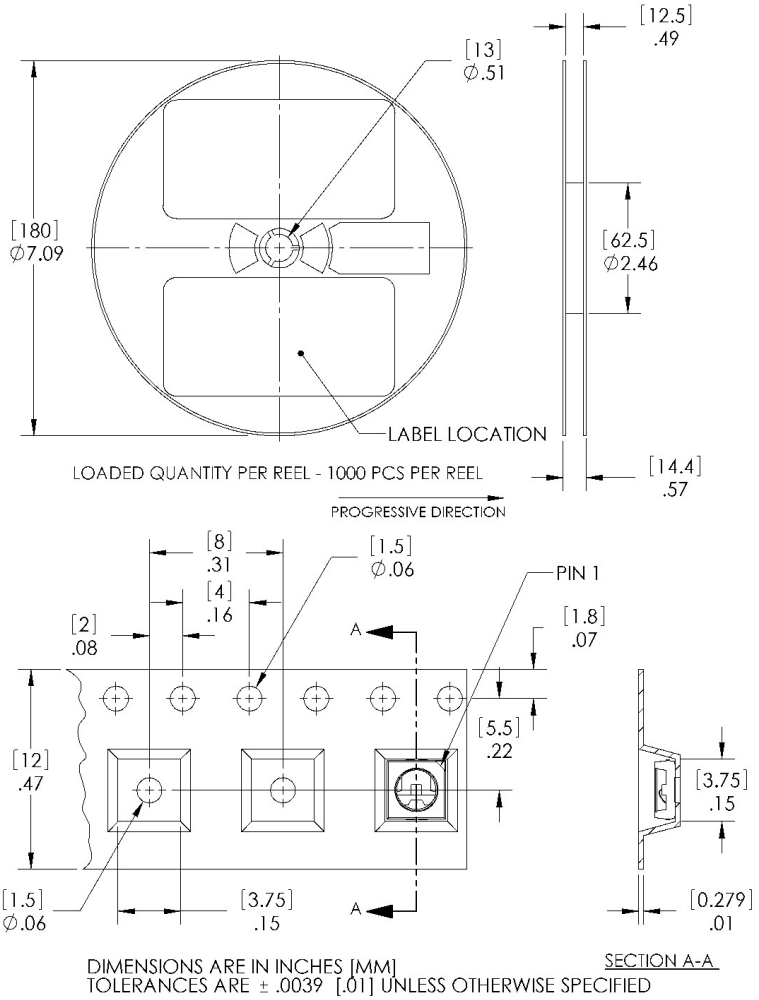
Recommended Sn-Pb IR-Reflow Soldering Profile.



Recommended Pb Free IR-Reflow Soldering Profile.

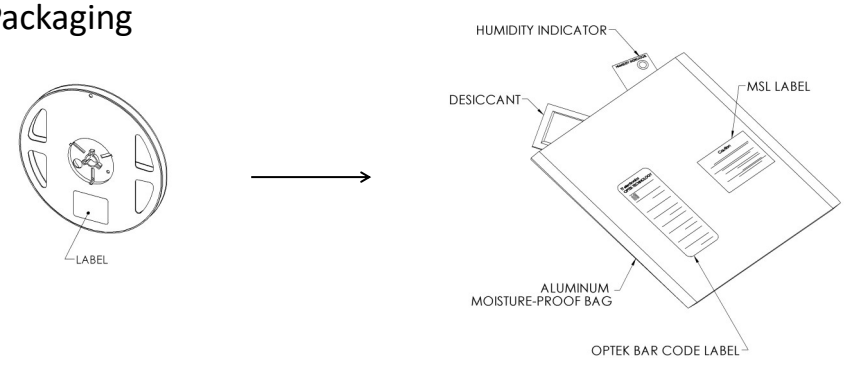


Reel Dimensions: 7-inch reel



Carrier Tape Dimensions: Loaded quantity 1000 pieces per reel

Moisture Resistant Packaging



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