Round Through-Hole LED Lamp (3 mm)

OVLBx4C7 Series

Features:

- High brightness with well-defined spatial radiation patterns
- UV-resistant epoxy lens
- Lead-frame material is iron alloy with tin plated leads
- No stand-offs

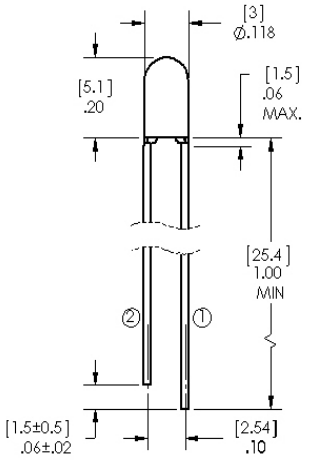
Description:

Each OVLBx4C7 series device is a high-intensity LED mounted in a clear plastic T-1 package. The LED provides a well-defined and even emission pattern. Its UV-resistant epoxy lens makes this device an optimal solution for outdoor applications.

Applications:

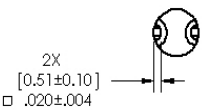
- Pedestrian signals
- Signage and architectural lighting
- Backlighting
- Automotive
- Outdoor/indoor displays

Part Number	Material	Emitted Color	Intensity Typ. mcd	Lens Color
OVLBB4C7	InGaN	Blue	1800	Clear
OVLBG4C7		Green	8400	Clear
OVLBR4C7	AlInGaP	Red	3700	Clear
OVLBY4C7		Yellow	3700	Clear



RoHS

ATTENTION
OBSERVE PRECAUTIONS
ELECTROSTATIC
SENSITIVE DEVICES



General tolerance +/- .25mm unless specified

① ANODE
② CATHODE

Dimensions are in Inches [MM]

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)

Storage Temperature Range		-40 ~ +100 °C
Operating Temperature Range		-40 ~ +100 °C
Reverse Voltage (Device not designed for reverse voltage applications)		5 V Max
Continuous Forward Current (Design of heat dissipation should be considered)	Blue, Green	25 mA
Continuous Forward Current (Design of heat dissipation should be considered)	Red, Yellow	50 mA
Peak Forward Current (10% Duty Cycle, 1 kHz)	Blue, Green	100 mA
Peak Forward Current (10% Duty Cycle, 1 kHz)	Red, Yellow	100 mA
Power Dissipation	Blue, Green	100 mW
Power Dissipation	Red, Yellow	120 mW
Current Linearity vs Ambient Temperature	Blue, Green	-0.29 mA/° C
Current Linearity vs Ambient Temperature	Red, Yellow	-0.72 mA/° C
LED Junction Temperature		125° C
Electrostatic Discharge Classification (JEDEC-JESD22-A114F)		Class 1C
Lead Soldering Temperature (4 mm away from the base of the epoxy bulb)		260° C / 3 seconds

Electrical Characteristics (TA = 25o C unless otherwise noted)

SYMBOL	PARAMETER	COLOR	MIN	TYP	MAX	UNITS	CONDITIONS
I_V	Luminous Intensity	Blue	1135	1800	----	mcd	I_F = 20 mA
		Green	4360	8400	----		
		Red	2225	3700	----		
		Yellow	2225	3700	----		
V_F	Forward Voltage	Blue	2.6	3.2	4.0	V	I_F = 20 mA
		Green					
		Red	1.8	2.0	2.4		
		Yellow					
I_R	Reverse Current	Blue	----	----	10	µA	V_R = 5 V
		Green	----	----			
		Red	----	----			
		Yellow	----	----			
λ_D	Dominant Wavelength	Blue	460	470	475	nm	I_F = 20 mA
		Green	519	525	531		
		Red	620	623	630		
		Yellow	585	589	595		
2Θ½H-H	50% Power Angle		----	45	----	deg	I_F = 20 mA

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Typical Electro-Optical Characteristics Curves (BLUE)

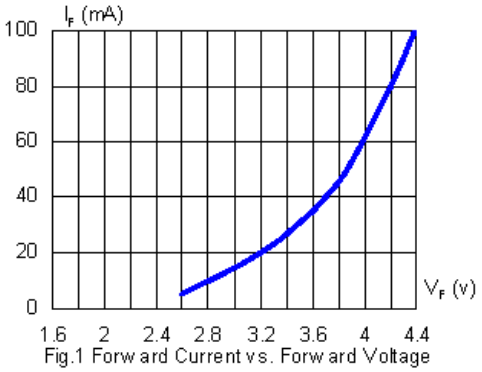

Fig.1 Forward Current vs. Forward Voltage

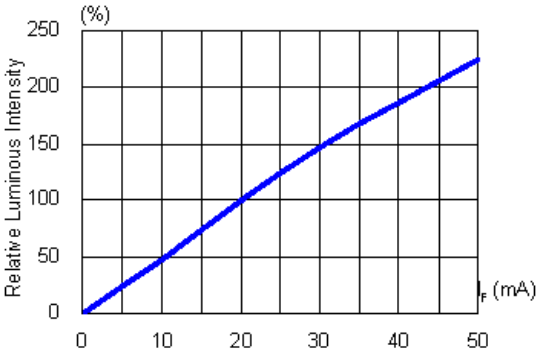

Fig.2 Luminous Intensity vs. Forward Current

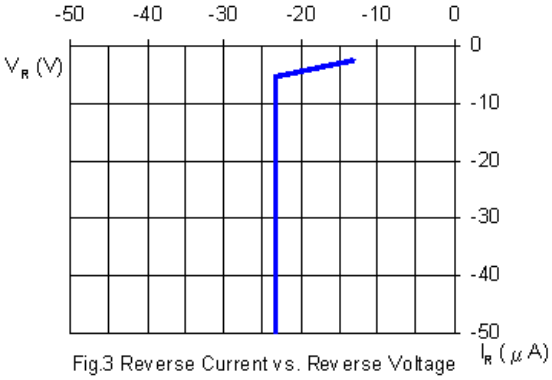

Fig.3 Reverse Current vs. Reverse Voltage

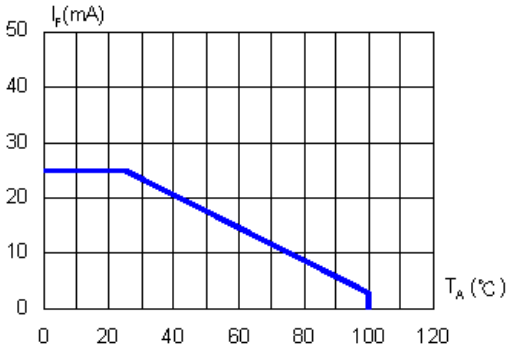

Fig.4 Allowable Forward Current vs. Ambient Temperature

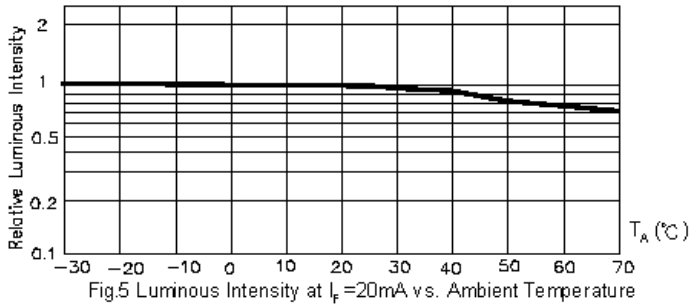

Fig.5 Luminous Intensity at I_F =20mA vs. Ambient Temperature

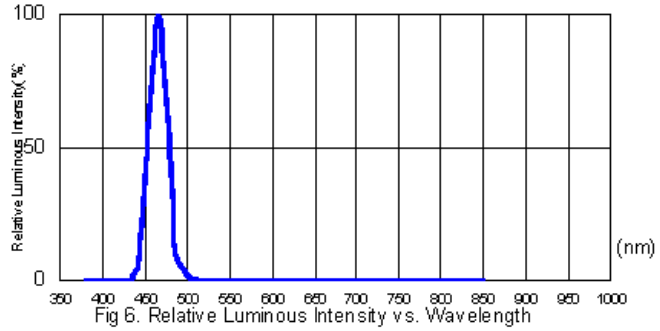

Fig 6. Relative Luminous Intensity vs. Wavelength

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Typical Electro-Optical Characteristics Curves (GREEN)

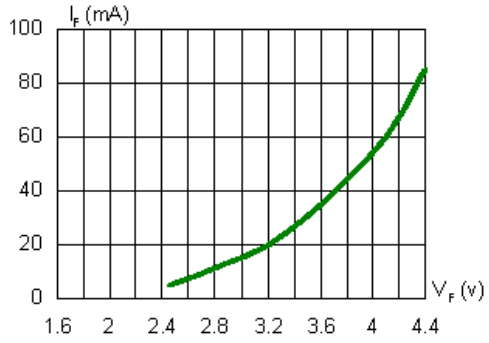

Fig.1 Forward Current vs. Forward Voltage

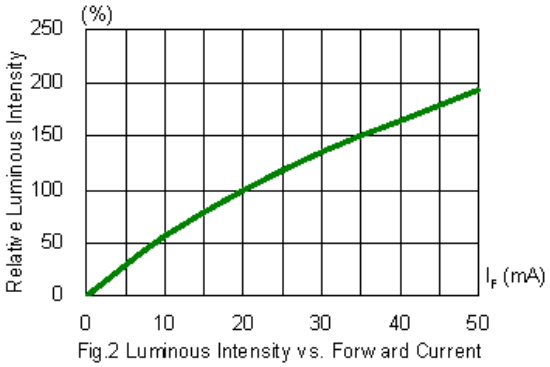

Fig.2 Luminous Intensity vs. Forward Current

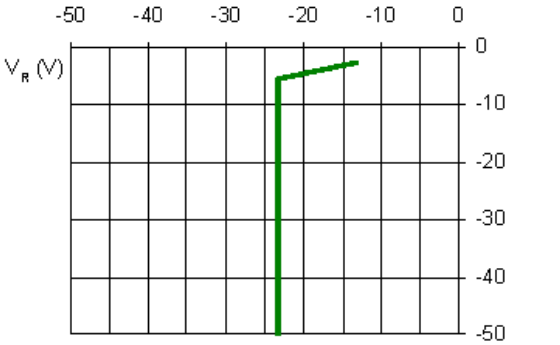

Fig.3 Reverse Current vs. Reverse Voltage

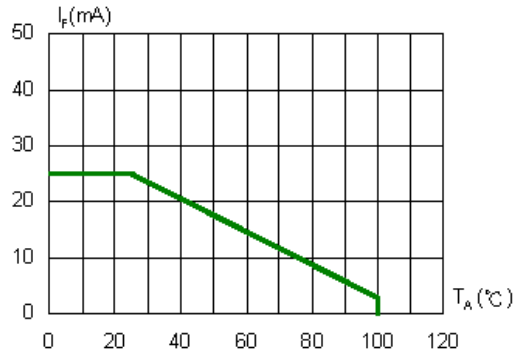

Fig.4 Allowable Forward Current vs. Ambient Temperature

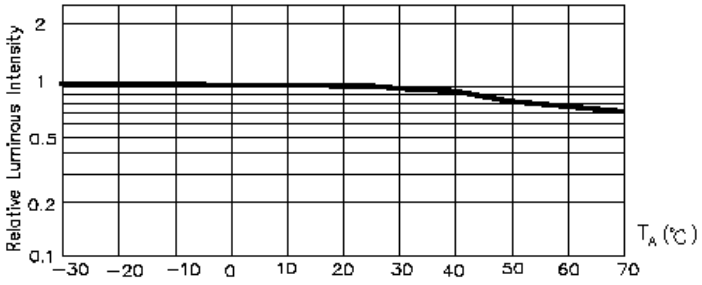

Fig.5 Luminous Intensity at I_F=20mA vs. Ambient Temperature

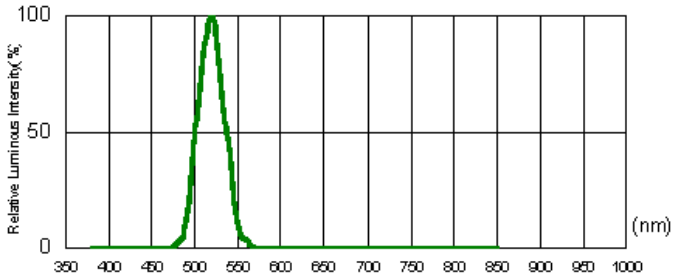

Fig 6. Relative Luminous Intensity vs. Wavelength

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Typical Electro-Optical Characteristics Curves (RED)

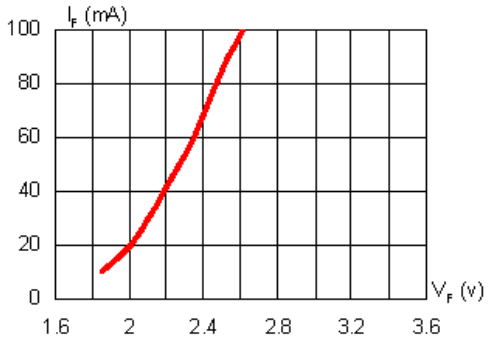

Fig.1 Forw ard Current v s. Forw ard Voltage

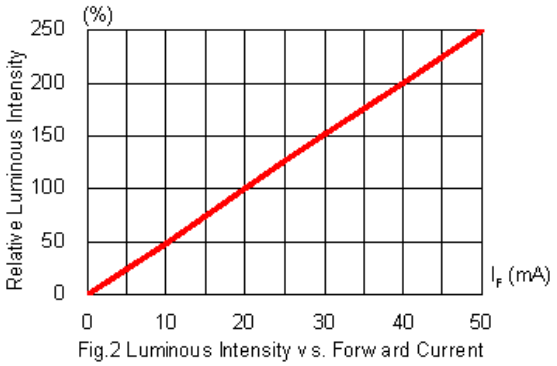

Fig.2 Luminous Intensity v s. Forw ard Current

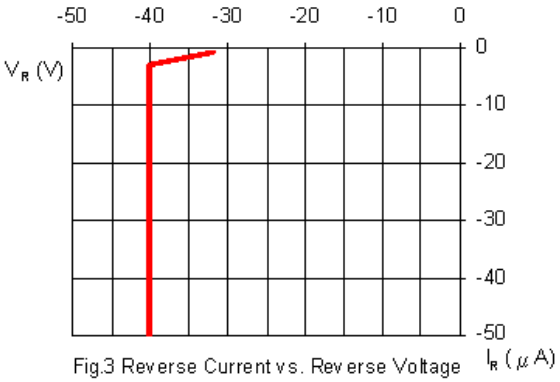

Fig.3 Reverse Current v s. Rev erse Voltage

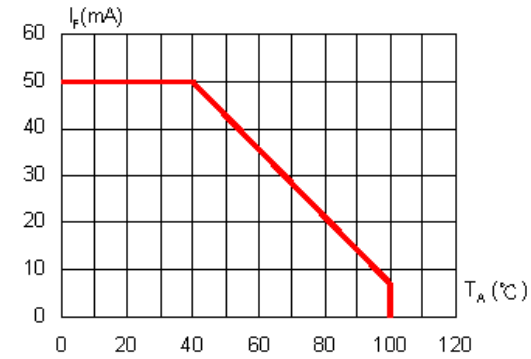

Fig.4 Allow able Forw ard Current v s. Ambient Temperature

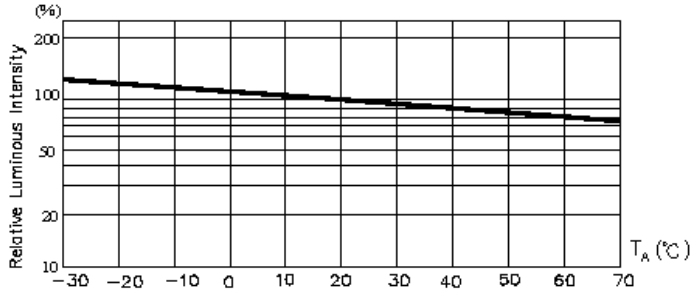

Fig.5 Luminous Intensity at I_F =20mA v s. Ambient Temperature

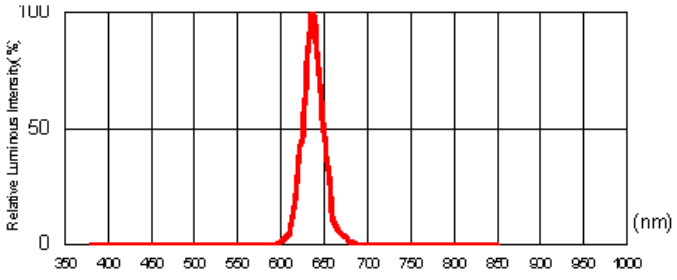

Fig 6. Relative Luminous Intensity v s. Wav elength

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Typical Electro-Optical Characteristics Curves (YELLOW)

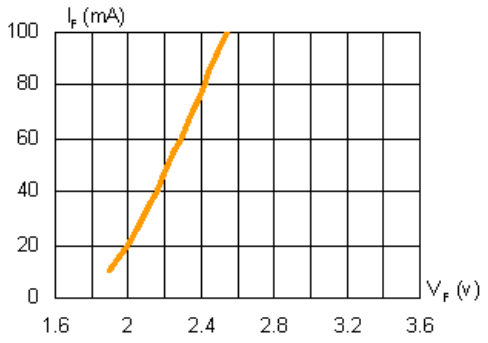

Fig.1 Forward Current vs. Forward Voltage

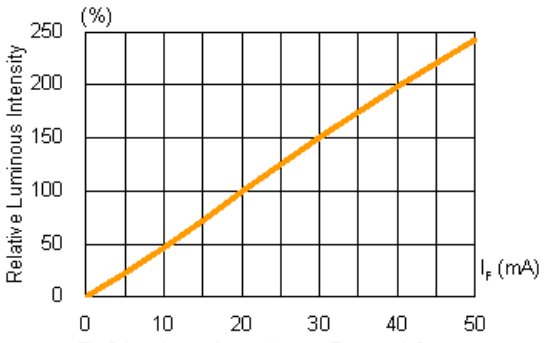

Fig.2 Luminous Intensity vs. Forward Current

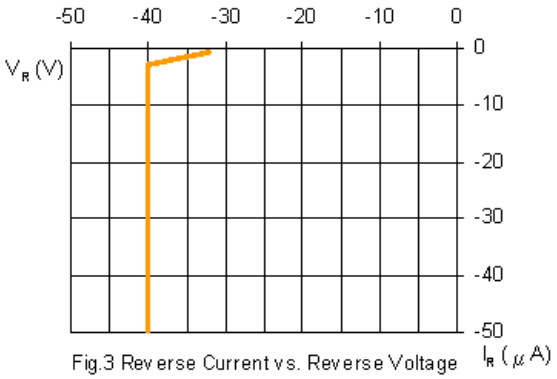

Fig.3 Reverse Current vs. Reverse Voltage

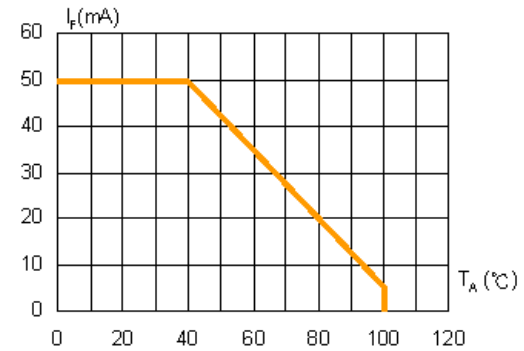

Fig.4 Allowable Forward Current vs. Ambient Temperature

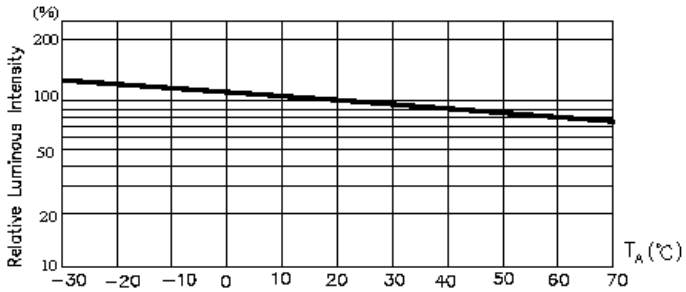

Fig.5 Luminous Intensity at I_F =20mA vs. Ambient Temperature

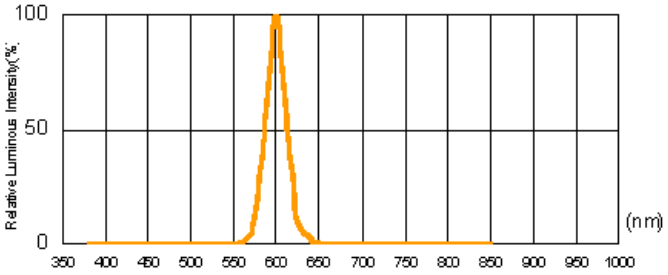

Fig.6. Relative Luminous Intensity vs. Wavelength

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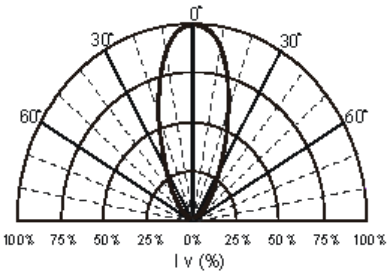
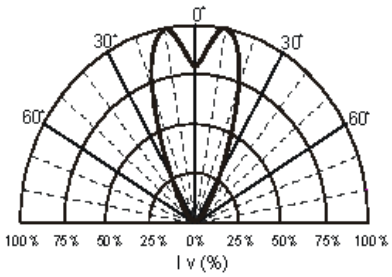
Beam Pattern:

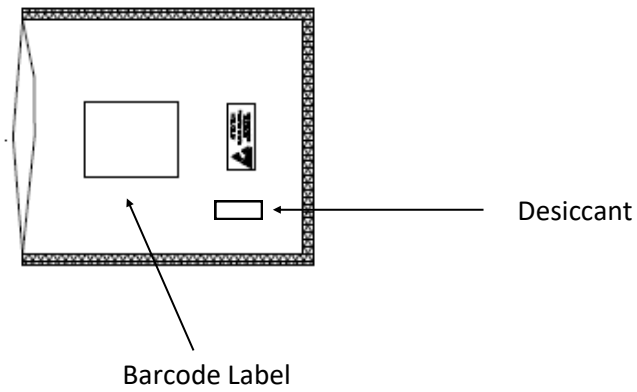
(Blue) and (Green)



(Red) and (Yellow)



Packaging: 500 pcs per bulk bag with desiccant



Reliability Test

LED lamps are checked by reliability tests based on MIL standards.

Classi-fication	Test Item	Standard Test Method	Test Conditions	Duration	Unit	Acc / Rej Criteria	Result
Life Test	Operation Life Test (OLT)	MIL-STD-750D Method 1026.3	T_A=25℃ , I_F =30mA *	1000 Hrs	100	0 / 1	Pass
Environment Test	High Temperature Storage (HTS)	MIL-STD-750D Method 1032.1	T_A=100℃	1000 Hrs	100	0 / 1	Pass
	Low Temperature Storage (LTS)	MIL-STD-750D Method 1032.1	T_A=−40℃	1000 Hrs	100	0 / 1	Pass
	Temp. & Humidity with Bias (THB)	MIL-STD-750D Method 103B	T_A=85℃ , Rh=85% I_F =20mA **	500 Hrs	100	0 / 1	Pass
	Thermal Shock Test (TST)	MIL-STD-750D Method 1056.1	0℃ ~ 100℃ 2min 2min	100 cycles	100	0 / 1	Pass
	Temperature Cycling Test (TCT)	MIL-STD-750D Method 1051.5	-40℃ ~25℃~ 100℃ ~25℃ 30min 5min 30min 5min	100 cycles	100	0 / 1	Pass
Mechanical Test	Solderability	MIL-STD-750D Method 2026.4	235±5℃ , 5 sec	1 time	20	0 / 1	Pass
	Resistance to Soldering Heat	MIL-STD-750D Method 2031.1	260±5℃ , 10 sec	1 time	20	0 / 1	Pass
	Lead Integrity	MIL-STD-750D Method 2036.3	Load 2.5N (0.25kgf) 0°~ 90°~ 0° , bend	3 times	20	0 / 1	Pass

(*) USL : Upper Standard Level , (**) LSL : Lower Standard Level

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