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SURFACE MOUNT LED TAPE AND REEL

LSRFVG9553/TR1

DATA SHEET

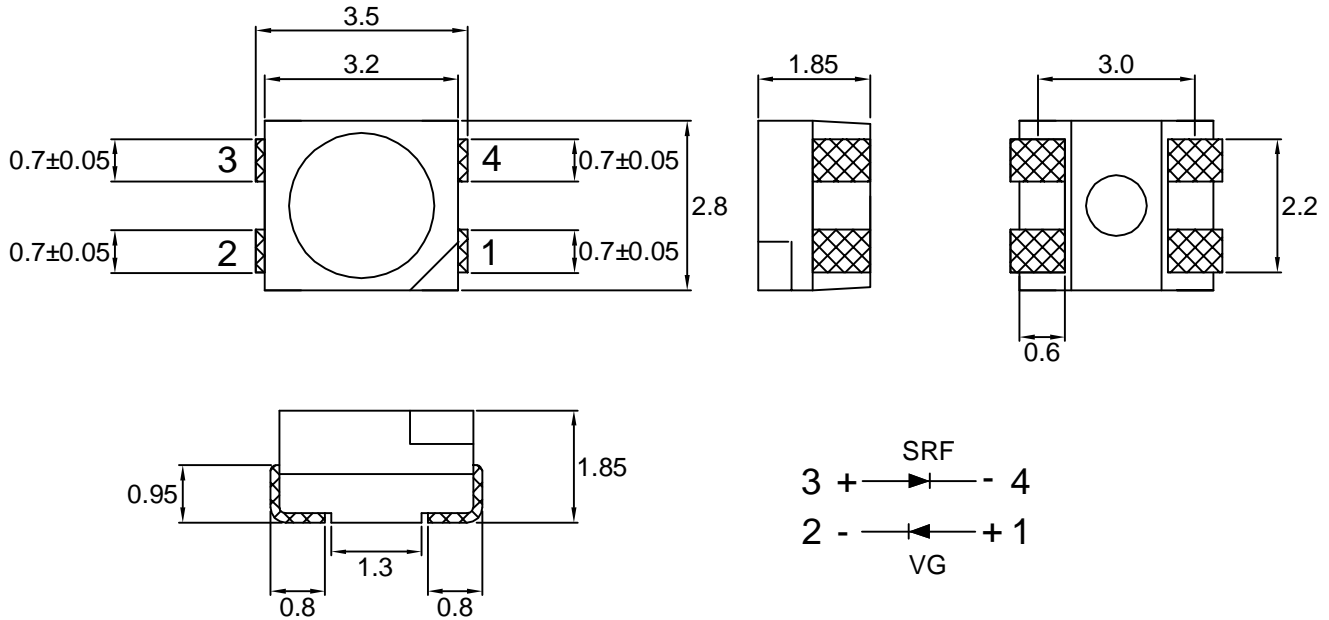
DOC. NO : QW0905-L SRFVG9553/TR1

REV : A

DATE : 31 - Oct. - 2005

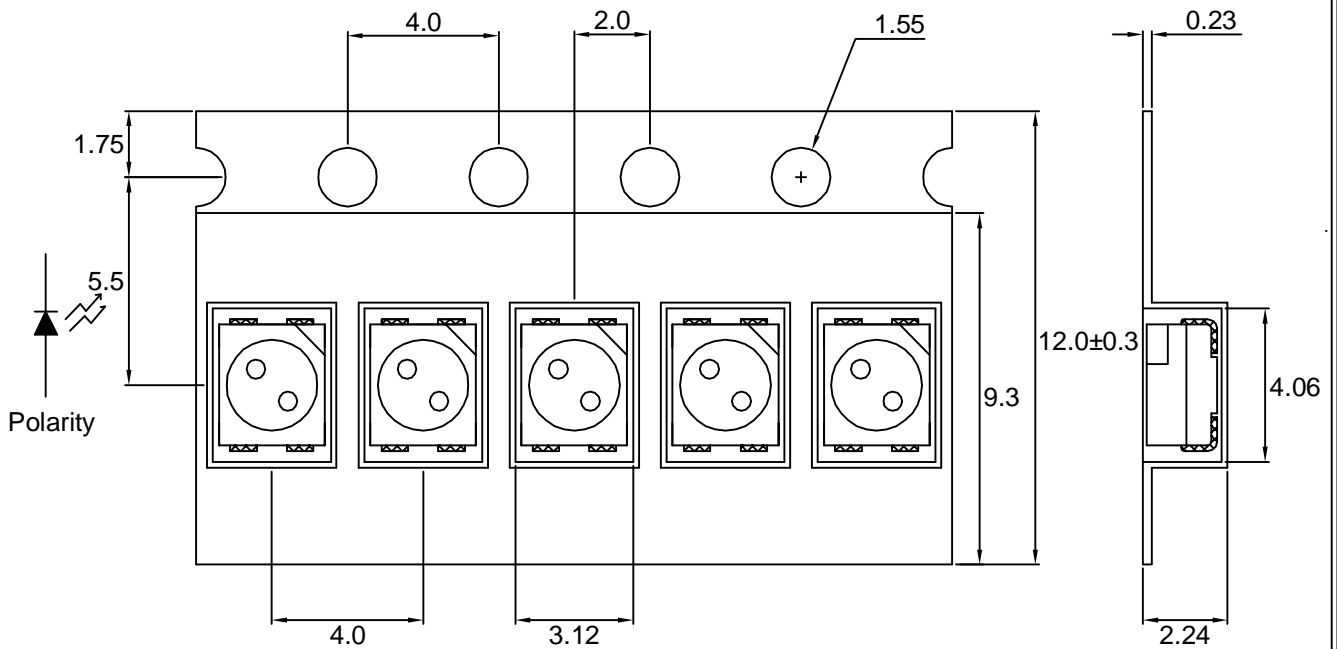


Package Dimensions



Note : 1.All dimension are in millimeter tolerance is ±0.2mm unless otherwise noted.
2.Specifications are subject to change without notice.

Carrier Type Dimensions



Note : The tolerances unless mentioned is ±0.2mm, Angle ± 0.5. Unit=mm.



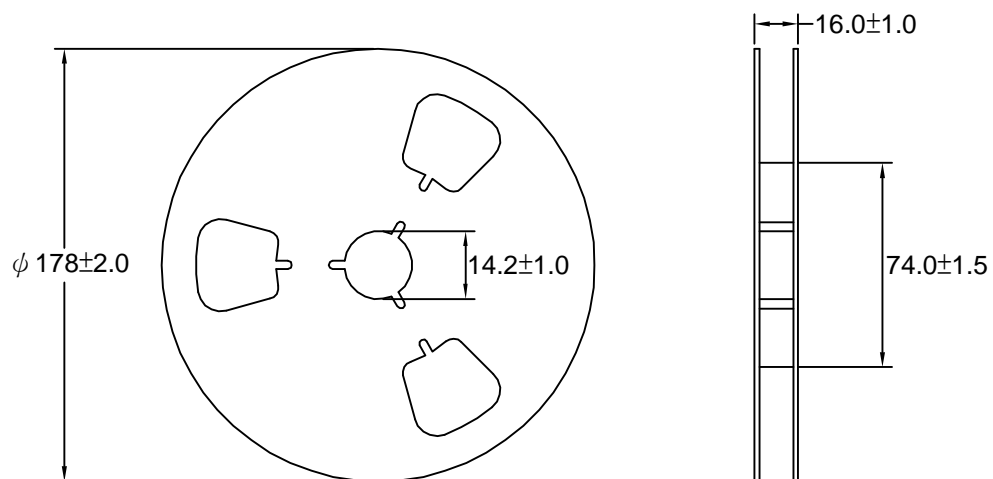
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PART NO. LSRFVG9553/TR1

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Reel Dimensions



Part No.	Description	Quantity/Reel
LSRFVG9553/TR1	12.0mm tape, 7" reel	1500 devices



Absolute Maximum Ratings at Ta=25 °C

Parameter	Symbol	Ratings		UNIT
		SRF	VG	
Forward Current	I _F	30	30	mA
Peak Forward Current Duty 1/10@10KHz	I _{FP}	90	120	mA
Power Dissipation	PD	75	100	mW
Reverse Current @5V	I _r	10		μA
Electrostatic Discharge	ESD	2000	---	V
Operating Temperature	T _{opr}	-40 ~ +85		°C
Storage Temperature	T _{stg}	-40 ~ +100		°C
Soldering Temperature	T _{sol}	Max 260°C for 5 sec Max		

Typical Electrical & Optical Characteristics (Ta=25 °C)

PART NO	MATERIAL	COLOR		Peak wave length λ Pnm	Dominant wave length λ Dnm	Spectral halfwidth Δ λ nm	Forward voltage @20mA(V)		Luminous intensity @20mA(mcd)		Viewing angle 2θ 1/2 (deg)
		Emitted	Lens				Min.	Max.	Min.	Typ.	
LSRFVG9553/TR1	AlGaInP	Red	Water Clear	----	630	20	1.5	2.4	80	190	120
	GaP	Green		565	----	30	1.7	2.6	20	44	120

Note : 1.The forward voltage data did not including ±0.1V testing tolerance.
2. The luminous intensity data did not including ±15% testing tolerance.



Typical Electro-Optical Characteristics Curve

SRF CHIP

Fig.1 Forward current vs. Forward Voltage

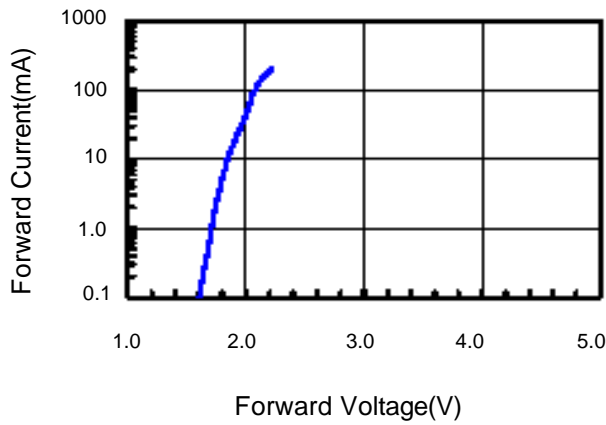


Fig.2 Relative Intensity vs. Forward Current

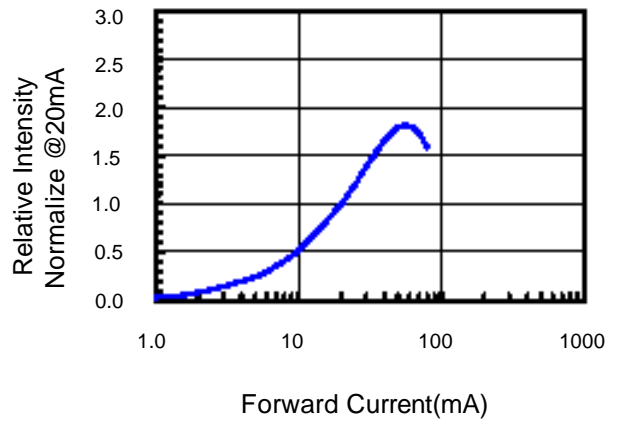


Fig.3 Forward Voltage vs. Temperature

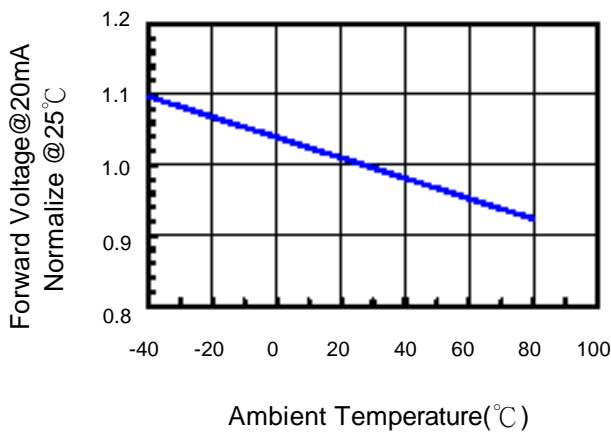


Fig.4 Relative Intensity vs. Temperature

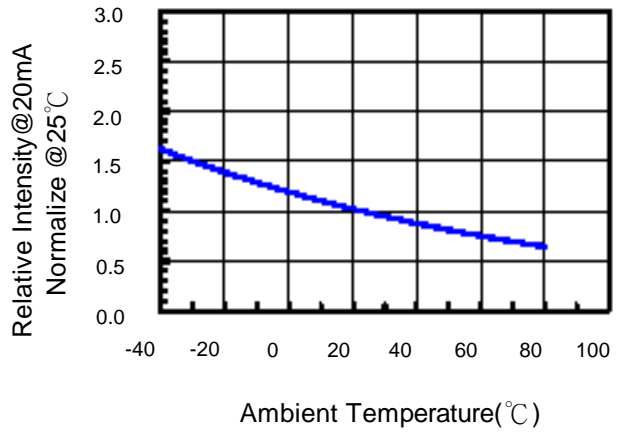
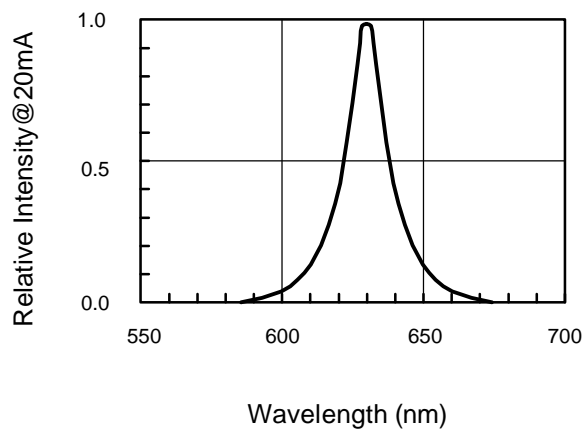


Fig.5 Relative Intensity vs. Wavelength





Typical Electro-Optical Characteristics Curve

VG CHIP

Fig.1 Forward current vs. Forward Voltage

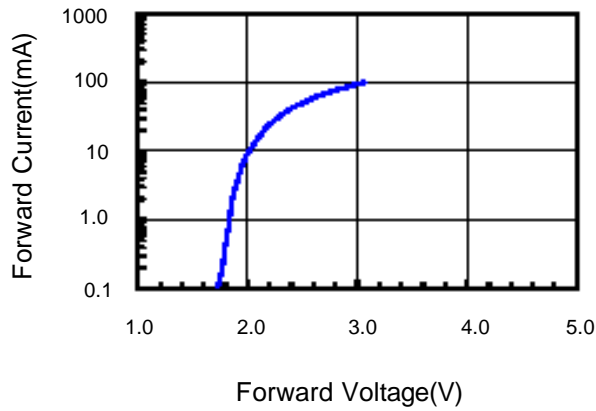


Fig.2 Relative Intensity vs. Forward Current

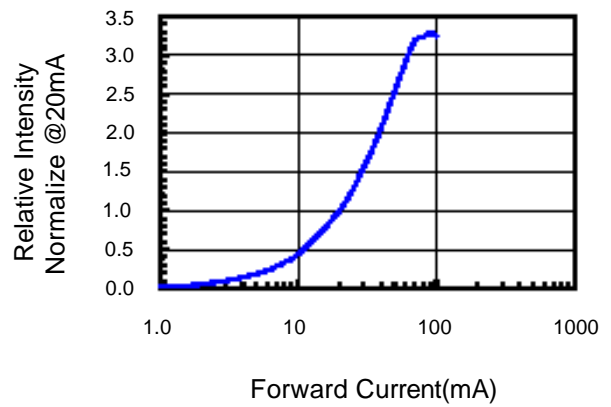


Fig.3 Forward Voltage vs. Temperature

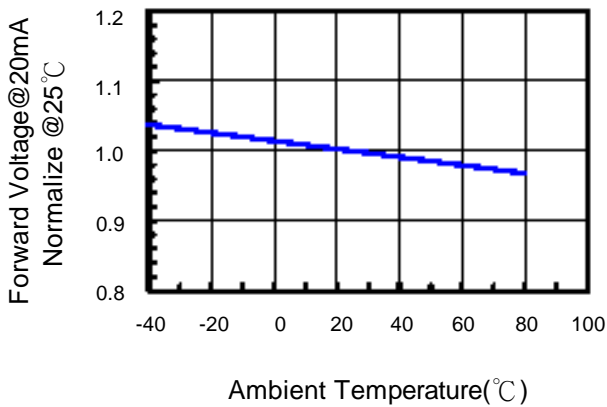


Fig.4 Relative Intensity vs. Temperature

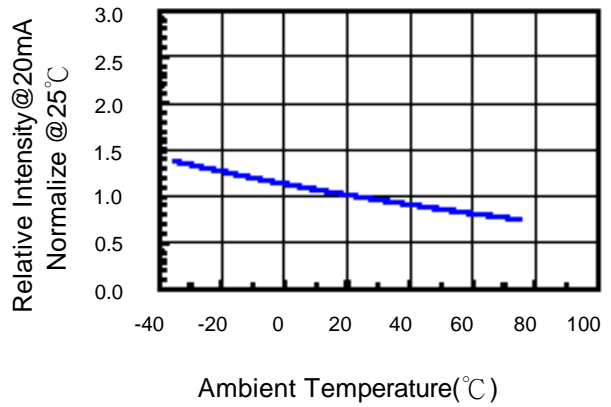
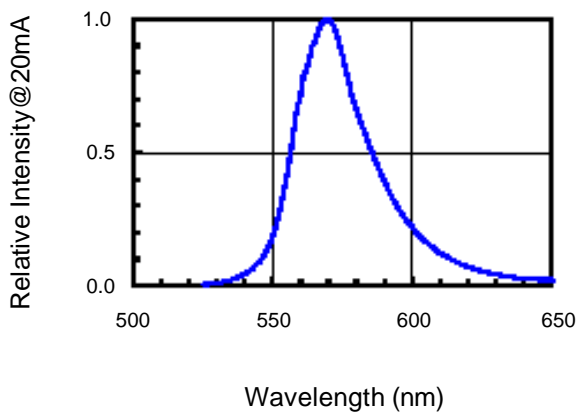


Fig.5 Relative Intensity vs. Wavelength





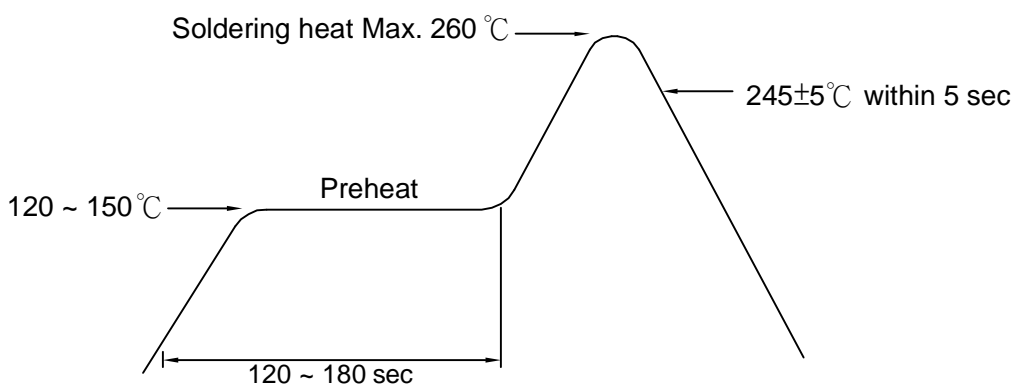
Soldering Iron:

Basic spec is ≤ 5 sec when 260°C . If temperature is higher, time should be shorter($+10^{\circ}\text{C} \rightarrow -1\text{sec}$).

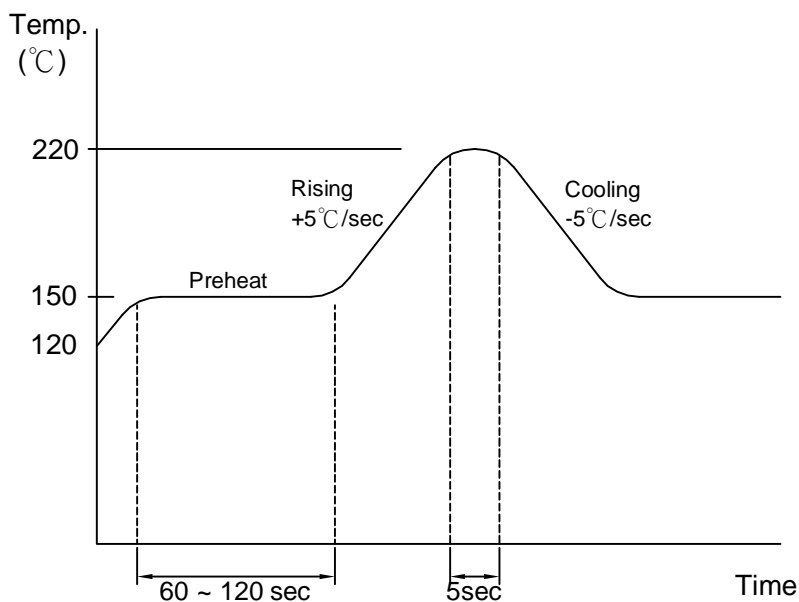
Power dissipation of iron should be smaller than 15W, and temperature should be controllable.

Surface temperature of the device should be under 230°C .

Soldering heat



Reflow Temp/Time





Precautions For Use:

Storage time:

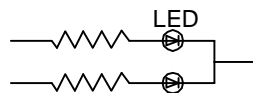
- 1.The operation of Temperatures and RH are : $5^{\circ}\text{C} \sim 35^{\circ}\text{C}$,RH<60%.
- 2.Once the package is opened, the products should be used within a week. Otherwise, they should be kept in a damp proof box with desiccating agent. Considering the tape life, we suggest our customers to use our products within a year(from production date).
- 3.If opened more than one week in an atmosphere $5^{\circ}\text{C} \sim 35^{\circ}\text{C}$,RH<60%, they should be treated at $60^{\circ}\text{C} \pm 5^{\circ}\text{C}$ fo r 15hrs.

Drive Method:

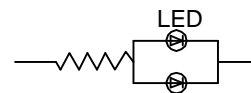
LED is a current operated device, and therefore, requirer some kind of current limiting incorporated into the driver circuit. This current limiting typically takes the form of a current limiting resistor placed in series with the LED.

Consider worst case voltage variations than could occur across the current limiting resistor. The forwr d current should not be allowed to change by more than 40 % of its desired value.

Circuit model A



Circuit model B



(A) Recommended circuit.

(B) The difference of brightness between LED could be found due to the VF-IF characteristics of LED.

Cleaning:

Use alcohol-based cleaning solvents such as isopropyl alcohol to clean the LED.

ESD(Electrostatic Discharge):

Static Electricity or power surge will damage the LED. Use of a conductive wrist band or anti-electrosatic glove is recommended when handing these LED. All devices, equipment and machinery must be properly grounded.



Reliability Test:

Test Item	Test Condition	Description	Reference Standard
Operating Life Test	1.Under Room Temperature 2.If=20mA 3.t=1000 hrs (-24hrs, +72hrs)	This test is conducted for the purpose of detemining the resiance of a part in electrical and themal stressed.	MIL-STD-750: 1026 MIL-STD-883: 1005 JIS C 7021: B-1
High Temperature Storage Test	1.Ta=105 °C±5°C 2.t=1000 hrs (-24hrs, +72hrs)	The purpose of this is the resistance of the device which is laid under ondition of high temperature for hours.	MIL-STD-883:1008 JIS C 7021: B-10
Low Temperature Storage Test	1.Ta=-40 °C±5°C 2.t=1000 hrs (-24hrs, +72hrs)	The purpose of this is the resistance of the device which is laid under condition of low temperature for hours.	JIS C 7021: B-12
High Temperature High Humidity Test	1.Ta=65 °C±5°C 2.RH=90%~95% 3.t=240hrs ±2hrs	The purpose of this test is the resistance of the device under tropical for hous.	MIL-STD-202:103B JIS C 7021: B-11
Thermal Shock Test	1.Ta=105 °C±5°C & -40°C±5°C (10min) (10min) 2.total 10 cycles	The purpose of this is the resistance of the device to sudden extreme changes in high and low temperature.	MIL-STD-202: 107D MIL-STD-750: 1051 MIL-STD-883: 1011
Solder Resistance Test	1.T.Sol=260 °C±5°C 2.Dwell time= 10 ±1sec.	This test intended to determine the thermal characteristic resistance of the device to sudden exposures at extreme changes in temperature when soldering the lead wire.	MIL-STD-202: 210A MIL-STD-750: 2031 JIS C 7021: A-1
Solderability Test	1.T.Sol=230 °C±5°C 2.Dwell time=5 ±1sec	This test intended to see soldering well performed or not.	MIL-STD-202: 208D MIL-STD-750: 2026 MIL-STD-883: 2003 JIS C 7021: A-2