

SPECIFICATION AND PERFORMANCE

Series	303C-541219-25-XX	File	303C-541219-25-XX_SPEC_2	Date	2025/04/10
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Scope:

This specification covers the requirements for product performance, test methods and quality assurance provisions of 303C-541219-25-XX

Performance and Descriptions:

The product is designed to meet the electrical, mechanical and environmental performance requirements specification. Unless otherwise specified, all tests are performed at ambient environmental conditions.

RoHS:

All material in according with the RoHS environment related substances list controlled.

MATERIAL AND FINISH	
HOUSING	Material PPA, UL94HB, Black
PIN	Material Copper alloy Brass
	Plating 40μ" Gold Min. 120μ" Nickel Min.
BARREL	Material Copper alloy Brass
	Plating 2μ" Gold Min. 80μ" Nickel Min.
SPRING	Material Stainless Steel
O-RING	Material Silicone Rubber
RATING	Current Rating: 3A24V AC/DC Operating Temperature : -40°C to +85°C Durability: 20,000 cycles

ELECTRICAL		
Item	Requirement	Test Condition
Contact Resistance	50mΩ Max. at 0.9mm stroke (at standing still)	Voltage drop system four-wire system with below 300mA

MECHANICAL		
Item	Requirement	Test Condition
Pin Force	1.0N±0.25N at 0.9mm stroke	0.9mm compression
Pin Strength	No appearance damage	Apply 9.8N static load on the plunger in direction for 1 minute.
Pin Pulling Off Force	No appearance damage	Apply 4.9N static load on the pin in axis direction for 1 minute.

ENVIRONMENTAL		
Item	Requirement	Test Condition
Operation durability	No appearance damage Contact Resistance: 100mΩ Max. Pin Force: 1.0N±0.25N No appearance damage	0.9mm pin compression for the nominal stroke at a frequency of 10 to 20 times per minute for 20,000 cycles.
Low Temperature Durability	Contact Resistance: 100mΩ Max. No appearance damage	Store in temp: -40°C±3°C for 96hrs, then leave in the ambient temperature for 1 hour.
High Temperature Durability		Store in temp: +85°C±2°C for 96hrs, then leave in the ambient temperature for 1 hour.
Humidity Durability		Store in temp: 60°C±2°C with humidity of 90% ~ 95% for 96hrs, then leave in the ambient temperature for 1 hour.

Temperature Cycle Test	Contact Resistance: 100mΩ Max. No appearance damage	Cycle 5 times (Table 1 Shows test condition for 1 circle). Leave in the ambient temp for 1 hour.
Temperature And Humidity Cycle Test		Operate cycle test 10 times. (See Fig1) Then leave in the ambient temp for 1 hour. The other issues are in conformity to JIS C60068-2-38.
Salt Spray	No excessive surface corrosion	The electrical performance shall be measured after continuous spray of salt water with 5±1% density and 35°C±2°C temperature for 48 hours, cleaning with lukewarm water and dry, and leaving in ambient temperature for 1 hour.
Vibration	Contact Resistance: 100mΩ Max. No appearance damage Intermittency below 1μ sec	Connect each connector pin in series, conducting current of 0.1A. After that, the vibration described below is added. <ul style="list-style-type: none"> ● Amplitude: 1.5mm ● Sweeping cycle: 10~55~10 Hz/minute ● Duration of test: 2 hours for each of X, Y, Z axis
Shock		Connect each connector pin in series, conducting current of 0.1A. After that, the shock described below is added. <ul style="list-style-type: none"> ● Accelerating rate: 490m/s² ● Operating time of the test: 11ms ● The number of operating times: 3 shocks at X, Y, Z axis both in negative and positive direction.

Heat Resistance	Contact Resistance: 100mΩ Max. No appearance damage	<ul style="list-style-type: none"> ● The electrical performance shall be measured after soldering for 3seconds or less per terminal. (Temperature of soldering iron:350°C) ● The electrical performance shall be measure in ambient temperature after soldering in accordance with the reflow profile. (See Fig2)
Waterproof test (IPV7)	No water leakage found form the test fixture inside	Set a connector with the testing fixture (See Fig3) and submerge it in water at 1m depth for 30 minute.



Table 1 -Temperature Cycle

Step	Temperature (°C)	Time (minutes)
1	-40±3	30~35
2	5~35	10~15
3	85±2	30~35
4	5~35	10~15

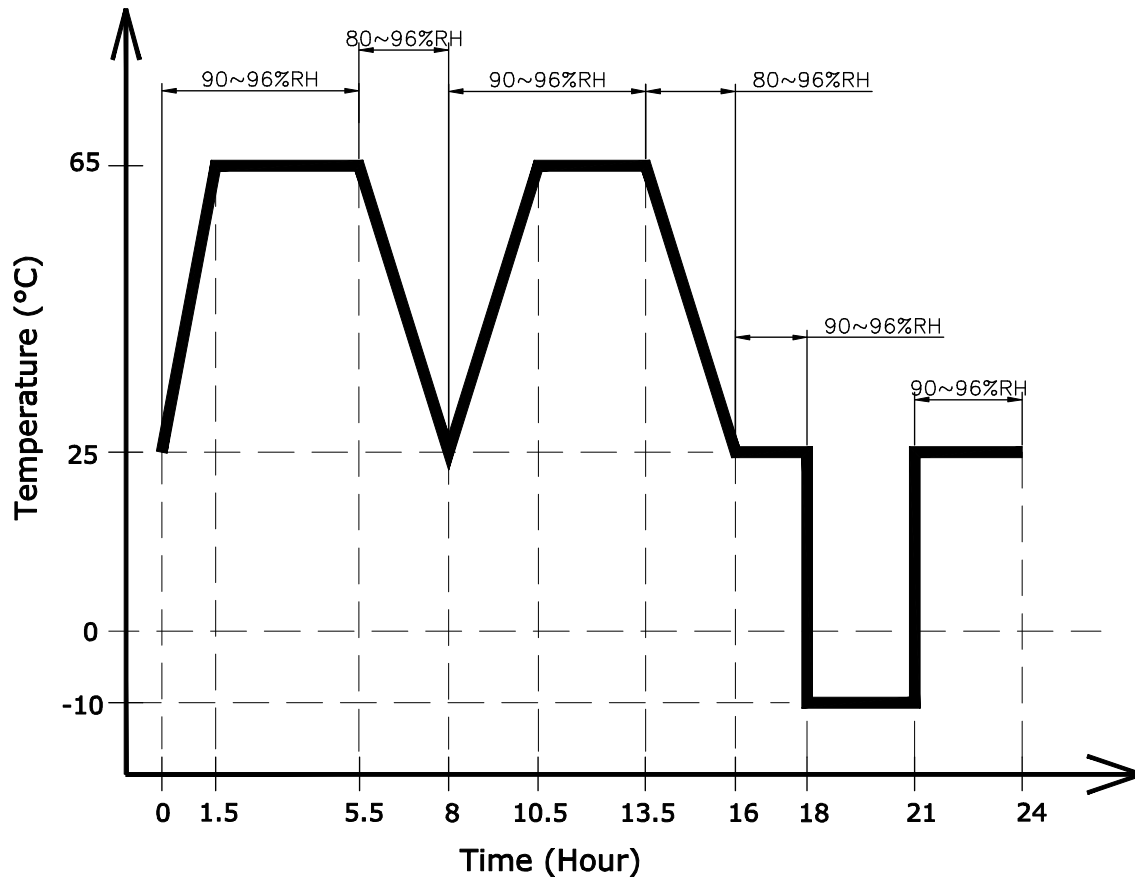


Fig1 Temperature And Humidity Cycle

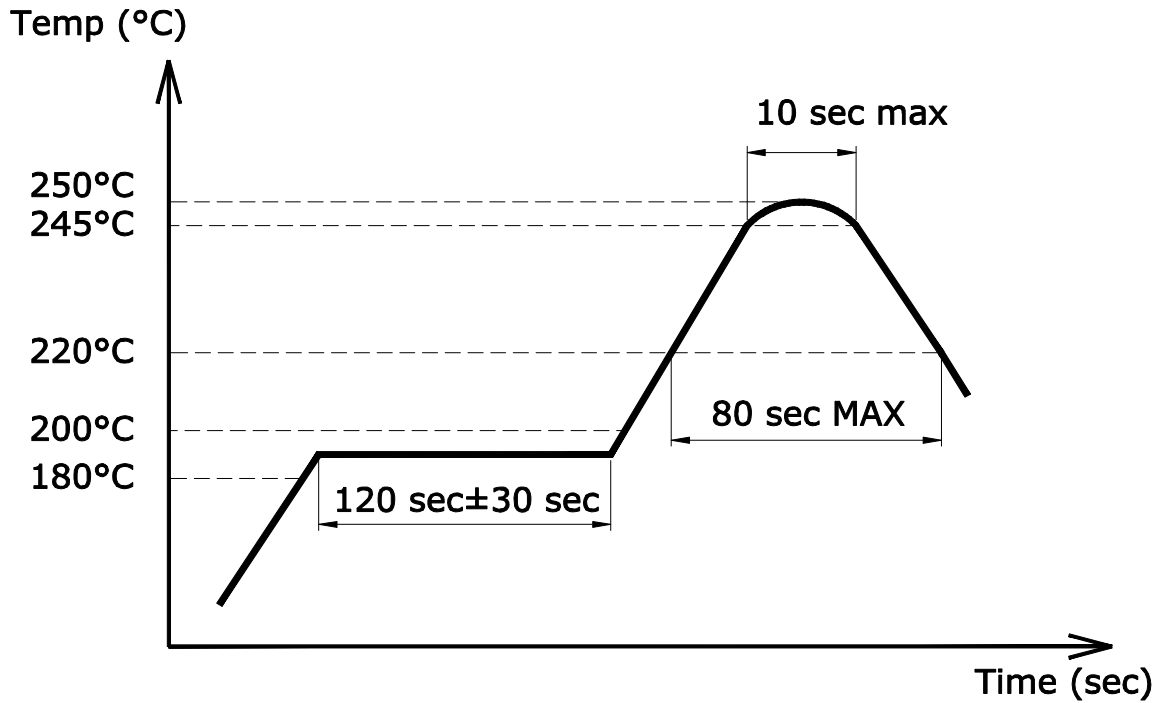


Fig2 Reflow Profile

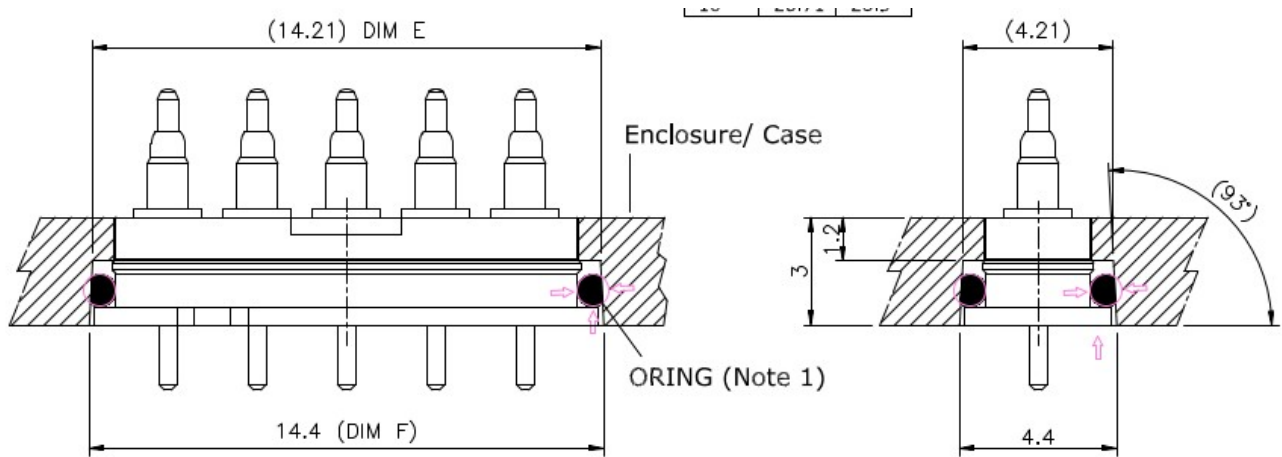


Fig3 Waterproof fixture