

SPECIFICATION AND PERFORMANCE

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|---------------|-------------|-------------|------------------|-------------|-------------------|
| Series | 115V | File | 115V-Spec | Date | 2019/08/13 |
|---------------|-------------|-------------|------------------|-------------|-------------------|

Scope:

This specification covers the requirements for product performance, test methods and quality assurance provisions of below

| P/N | Descriptions |
|-----------|---|
| 115V-AD00 | Nano SIM Socket, Hinge Type, 6Pin 10u" Reel |

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.

MATERIALS

| NO. | PART NAME | DESCRIPTION |
|-----|-----------|--|
| 1 | Insulator | LCP S475, UL94V0, black |
| 2 | Contact | Copper alloy C5210, 0.15t, Gold plating on contact area (see P/N description), Gold flash on solder area, under plating 50u" Min. Nickel |
| 3 | Cover | Stainless Steel SUS304, 0.20t |
| 4 | Ground | Stainless Steel SUS304, 0.20t, Gold flash on solder area, under plating 50u" Min. Nickel |

RATING

| | |
|-----------------------|-----------------|
| Rated Voltage | 10V |
| Rated Current | 0.5A |
| Operating Temperature | -40°C to +105°C |
| Storage Temperature | -40°C to +105°C |
| Durability | 100 cycles |

ELECTRICAL

| Item | Requirement | Test Condition |
|------------------------------|--|---|
| Low Level Contact Resistance | Initial 50mΩ Max. After test 100mΩ Max. | Solder connectors to PCB and insert dummy card into shell, measure by applying closed circuit current of 10mA maximum at open circuit voltage of 20mV (max). (Per EIA-364-23) |

| | | |
|---------------------------------|-------------|---|
| Dielectric Withstanding Voltage | No Broken | 500V AC (rms.) between two adjacent for 1 minute. (Trip current: 1mA) (Per EIA-364-20) |
| Insulation Resistance | 1000MΩ Min. | Apply 500V DC between adjacent contacts, or contact and ground. (EIA-364-21) |

MECHANICAL

| Item | Requirement | Test Condition |
|------------------------|--|---|
| Contact Normal Force | 0.3N Min./Pin | Solder connectors to PCB, unlock the shell and open it to full level, measure contact normal force at the speed rate of 1 mm/min. |
| Terminal Durability | 5000 cycles, Final Contact Normal Force 0.3N min. | Solder connectors to PCB, insert the card into the shell and close the shell, press the shell to 5000 times, press rate 10 times/min. max. |
| Open & Lock Force | 1.5N~20N with card | Solder connectors to PCB, parallel to push on the shell surface for open & lock |
| Open & Lock Durability | 100 Cycles, Final Lock Force: 1.5N Min. with card | Solder connectors to PCB, insert the card into the shell and close the shell. Operate loop of shell, 1)unlock 2) open it to full level 3)close it 4) press and lock |

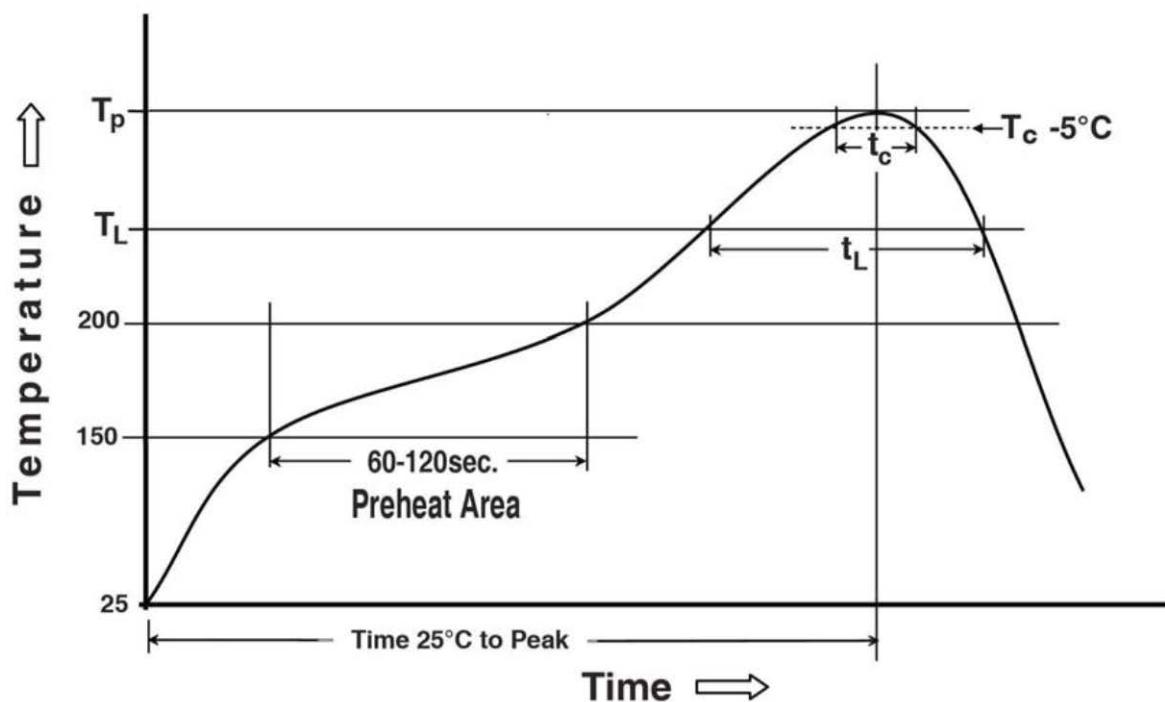
ENVIRONMENTAL

| Item | Requirement | Test Condition |
|------------------|--|---|
| Vibration | Discontinuity < 1 ms | EN60721-3-5 Class 5M3 Random vibration Test (3.38Grms) 10~500Hz, 3.38Grms, 1hr/per axis Test PSD: 10~200HZ: 3m ² /S ³ , 200~500HZ, 1m ² /S ³ or EIA-364-28, Condition II |
| Shock | Discontinuity < 1 ms | EN60721-3-5 Class 5M3 Shock Test-Level II (100G/6ms) or EIA-364-27, Condition C |
| Temperature Life | Contact resistance 100 mΩ Max. | 105±2°C Test procedure method B: with electrical load for connectors, duration 96 hours (EIA-364-17, method B, condition 4) |
| Cold Resistance | Contact resistance 100 mΩ Max. | -40°C/96Hr (EIA-364-59) |
| Humidity | Meets ELECTRICAL requirements | Temperature : 70±2°C Relative humidity : 90~95% Duration : 96 hours |
| Salt Water Spray | No oxidation Contact resistance 100 mΩ Max. | Temperature : 35±2°C Salt water density : 5±1% Duration : 48 hours |

SOLDER ABILITY

| Item | Requirement | Test Condition |
|------------------------------|--|---|
| Solder ability | 95% of immersed area must show no voids, pin holes | The termination should be 95% covered with new continuous solder coating Solder temperature: $255 \pm 5^\circ\text{C}$ Test time: 5 ± 1 seconds, (Per EIA-364-71) |
| Resistance to soldering heat | No melting, cracks or functional damage allowed | Preheating temperature: $150 \sim 200^\circ\text{C}$, 60~120 seconds Liquidus temperature (TL): 217°C , 60~150 seconds Peak temperature: 260°C Time within 5°C of peak temperature (T_c): 255°C , 30seconds |

Reflow Profile



Preheating temperature: $150 \sim 200^\circ\text{C}$, 60~120 seconds

Liquidus temperature (TL): 217°C , 60~150 seconds

Peak temperature: 260°C

Time within 5°C of peak temperature (T_c): 255°C , 30seconds

Test Group & Sequence:

| NO. | TEST ITEM | TEST GROUP & SEQUENCE | | | | | | | | |
|-----|----------------------------------|-----------------------|-------|-------|-------|-------|-------|-------|-----|-----|
| | | A | B | C | D | E | F | G | H | I |
| 1 | Examination of Product | 1,3,9 | 1,3,7 | 1,3,7 | 1,3,7 | 1,3,7 | 1,3,7 | 1,3,9 | 1,3 | 1,3 |
| 2 | Low Level Contact Resistance | 4,8 | | 4,6 | 4,6 | 4,6 | 4,6 | | | |
| 3 | Dielectric Withstanding Voltage | | | | | | | 4,7 | | |
| 4 | Insulation Resistance | | | | | | | 5,8 | | |
| 5 | Contact Normal Force | 5,7 | | | | | | | | |
| 6 | Terminal Durability | 6 | | | | | | | | |
| 7 | Cover Open & Lock Force | | 4,6 | | | | | | | |
| 8 | Cover Open & Lock Durability | | 5 | | | | | | | |
| 9 | Vibration | | | 5 | | | | | | |
| 10 | Mechanical Shock | | | | 5 | | | | | |
| 11 | Temperature Life | | | | | 5 | | | | |
| 12 | Cold Resistance | | | | | | 5 | | | |
| 13 | Humidity | | | | | | | 6 | | |
| 14 | Salt Water Spray | | | | | | | | 2 | |
| 15 | Solder Ability | | | | | | | | | 2 |
| 16 | Reflow Soldering Heat Resistance | 2 | 2 | 2 | 2 | 2 | 2 | 2 | | |
| | Quantities of Samples | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 |

Test Results:

Group A

| No. | Test item | Sample 1 | Sample 2 | Sample 3 | Sample 4 |
|-----|----------------------------------|------------|------------|------------|------------|
| 1 | Examination of Product | OK | OK | OK | OK |
| 2 | Reflow Soldering Heat Resistance | No damage | No damage | No damage | No damage |
| 3 | Examination of Product | OK | OK | OK | OK |
| 4 | Low Level Contact Resistance | 8.7~9Ω | 8.5~9.5Ω | 8.8~9.2Ω | 8.4~8.8Ω |
| 5 | Contact Normal Force | 1.17~1.36N | 1.22~1.29N | 1.22~1.28N | 1.19~1.26N |
| 6 | Terminal Durability | No damage | No damage | No damage | No damage |
| 7 | Contact Normal Force | 1.08~1.2N | 1.1~1.15N | 1.1~1.15N | 1.07~1.15N |
| 8 | Low Level Contact Resistance | 11.4~11.8Ω | 11.2~12Ω | 11.8~12.1Ω | 11.6~11.7Ω |
| 9 | Examination of Product | OK | OK | OK | OK |

Group B

| No. | Test item | Sample 1 | Sample 2 | Sample 3 | Sample 4 |
|-----|----------------------------------|-----------|-----------|-----------|-----------|
| 1 | Examination of Product | OK | OK | OK | OK |
| 2 | Reflow Soldering Heat Resistance | No damage | No damage | No damage | No damage |
| 3 | Examination of Product | OK | OK | OK | OK |
| 4 | Cover Open & Lock Force | Open 5.8N | Open 5.6N | Open 5.7N | Open 5.7N |

| | | | | | |
|---|------------------------------|----------------------|------------------------|------------------------|------------------------|
| | | Lock 4.7N | Lock 4.3N | Lock 4.2N | Lock 4.3N |
| 5 | Cover Open & Lock Durability | No damage | No damage | No damage | No damage |
| 6 | Cover Open & Lock Force | Open 5N Lock 4.5N | Open 4.4N Lock 4.1N | Open 4.5N Lock 4.0N | Open 4.7N Lock 4.2N |
| 7 | Examination of Product | OK | OK | OK | OK |

Group C

| No. | Test item | Sample 1 | Sample 2 | Sample 3 | Sample 4 |
|-----|----------------------------------|---|---|--|---|
| 1 | Examination of Product | OK | OK | OK | OK |
| 2 | Reflow Soldering Heat Resistance | No damage | No damage | No damage | No damage |
| 3 | Examination of Product | OK | OK | OK | OK |
| 4 | Low Level Contact Resistance | C1C5: 11.7Ω C2C6: 11.42Ω C3C7: 20.16Ω | C1C5: 14.79Ω C2C6: 12.93Ω C3C7: 11.4Ω | C1C5: 20.43Ω C2C6: 18.81Ω C3C7: 16.94Ω | C1C5: 18.17Ω C2C6: 16.86Ω C3C7: 9.37Ω |
| 5 | Vibration | Pass | Pass | Pass | Pass |
| 6 | Low Level Contact Resistance | C1C5: 12.9Ω C2C6: 9.79Ω C3C7: 10.31Ω | C1C5: 18.86Ω C2C6: 16.7Ω C3C7: 21.04Ω | C1C5: 16.08Ω C2C6: 16.53Ω C3C7: 11.18Ω | C1C5: 29.6Ω C2C6: 15.71Ω C3C7: 13.02Ω |
| 7 | Examination of Product | OK | OK | OK | OK |

Group D

| No. | Test item | Sample 1 | Sample 2 | Sample 3 | Sample 4 |
|-----|----------------------------------|--|---|--|--|
| 1 | Examination of Product | OK | OK | OK | OK |
| 2 | Reflow Soldering Heat Resistance | No damage | No damage | No damage | No damage |
| 3 | Examination of Product | OK | OK | OK | OK |
| 4 | Low Level Contact Resistance | C1C5: 21.15Ω C2C6: 18.85Ω C3C7: 10.89Ω | C1C5: 9.5Ω C2C6: 17.56Ω C3C7: 23.74Ω | C1C5: 12.75Ω C2C6: 12.73Ω C3C7: 17.46Ω | C1C5: 21.37Ω C2C6: 18.12Ω C3C7: 14.75Ω |
| 5 | Mechanical Shock | Pass | Pass | Pass | Pass |
| 6 | Low Level Contact Resistance | C1C5: 5.09Ω C2C6: 21.3Ω C3C7: 11.28Ω | C1C5: 16.74Ω C2C6: 15.4Ω C3C7: 13.68Ω | C1C5: 10.53Ω C2C6: 13.83Ω C3C7: 14.71Ω | C1C5: 9.66Ω C2C6: 11.35Ω C3C7: 7.54Ω |
| 7 | Examination of Product | OK | OK | OK | OK |

Group E

| No. | Test item | Sample 1 | Sample 2 | Sample 3 | Sample 4 |
|-----|----------------------------------|--|--|--|--|
| 1 | Examination of Product | OK | OK | OK | OK |
| 2 | Reflow Soldering Heat Resistance | No damage | No damage | No damage | No damage |
| 3 | Examination of Product | OK | OK | OK | OK |
| 4 | Low Level Contact Resistance | C7-C3: 21Ω C6-C2: 18.83Ω C5-C1: 19.13Ω GND: 35.7Ω | C7-C3: 18.24Ω C6-C2: 17.23Ω C5-C1: 18.35Ω GND: 36.03Ω | C7-C3: 19.64Ω C6-C2: 21.61Ω C5-C1: 21.01Ω GND: 36.59Ω | C7-C3: 20.45Ω C6-C2: 18.76Ω C5-C1: 18.67Ω GND: 35.38Ω |
| 5 | Temperature Life | Pass | Pass | Pass | Pass |
| 6 | Low Level Contact Resistance | C7-C3: 18.9Ω C6-C2: 17.12Ω C5-C1: 17.37Ω GND: 35.9Ω | C7-C3: 18.6Ω C6-C2: 17.48Ω C5-C1: 18.47Ω GND: 35.94Ω | C7-C3: 20.8Ω C6-C2: 22.32Ω C5-C1: 21.42Ω GND: 37.41Ω | C7-C3: 27.89Ω C6-C2: 23.84Ω C5-C1: 21.69Ω GND: 37.24Ω |
| 7 | Examination of Product | OK | OK | OK | OK |

Group F

| No. | Test item | Sample 1 | Sample 2 | Sample 3 | Sample 4 |
|-----|----------------------------------|-----------|-----------|-----------|-----------|
| 1 | Examination of Product | OK | OK | OK | OK |
| 2 | Reflow Soldering Heat Resistance | No damage | No damage | No damage | No damage |
| 3 | Examination of Product | OK | OK | OK | OK |

| | | | | | |
|---|------------------------------|---------------|---------------|---------------|---------------|
| 4 | Low Level Contact Resistance | C7-C3: 17.81Ω | C7-C3: 19.44Ω | C7-C3: 18.72Ω | C7-C3: 18.62Ω |
| | | C6-C2: 17.51Ω | C6-C2: 18.45Ω | C6-C2: 21.79Ω | C6-C2: 19.41Ω |
| | | C5-C1: 16.82Ω | C5-C1: 18.62Ω | C5-C1: 20.89Ω | C5-C1: 17.92Ω |
| | | GND: 36.15Ω | GND: 35.24Ω | GND: 35.54Ω | GND: 35.25Ω |
| 5 | Cold Resistance | Pass | Pass | Pass | Pass |
| 6 | Low Level Contact Resistance | C7-C3: 24.71Ω | C7-C3: 19.2Ω | C7-C3: 22.36Ω | C7-C3: 19Ω |
| | | C6-C2: 18.74Ω | C6-C2: 18.55Ω | C6-C2: 26.69Ω | C6-C2: 19.1Ω |
| | | C5-C1: 20.44Ω | C5-C1: 18.41Ω | C5-C1: 35.92Ω | C5-C1: 19.03Ω |
| | | GND: 36.76Ω | GND: 37.08Ω | GND: 35.89Ω | GND: 36.49Ω |
| 7 | Examination of Product | OK | OK | OK | OK |

Group G

| No. | Test item | Sample 1 | Sample 2 | Sample 3 | Sample 4 |
|-----|----------------------------------|---------------------------------------|---------------------------------------|---------------------------------------|---------------------------------------|
| 1 | Examination of Product | OK | OK | OK | OK |
| 2 | Reflow Soldering Heat Resistance | No damage | No damage | No damage | No damage |
| 3 | Examination of Product | OK | OK | OK | OK |
| 4 | Dielectric Withstanding Voltage | No breakdown of flicker in the sample | No breakdown of flicker in the sample | No breakdown of flicker in the sample | No breakdown of flicker in the sample |
| 5 | Insulation Resistance | >50GΩ | >50GΩ | >50GΩ | >50GΩ |
| 6 | Humidity | Pass | Pass | Pass | Pass |
| 7 | Dielectric Withstanding Voltage | No breakdown of flicker in the sample | No breakdown of flicker in the sample | No breakdown of flicker in the sample | No breakdown of flicker in the sample |
| 8 | Insulation Resistance | >8GΩ | >8GΩ | >8GΩ | >8GΩ |
| 9 | Examination of Product | OK | OK | OK | OK |

Group H

| No. | Test item | Sample 1 | Sample 2 | Sample 3 | Sample 4 |
|-----|------------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| 1 | Examination of Product | OK | OK | OK | OK |
| 2 | Salt Water Spray | No oxidation & damage | No oxidation & damage | No oxidation & damage | No oxidation & damage |
| 3 | Examination of Product | OK | OK | OK | OK |

Group I

| No. | Test item | Sample 1 | Sample 2 | Sample 3 | Sample 4 |
|-----|------------------------|--------------|--------------|--------------|--------------|
| 1 | Examination of Product | OK | OK | OK | OK |
| 2 | Solder Ability | >95% covered | >95% covered | >95% covered | >95% covered |
| 3 | Examination of Product | OK | OK | OK | OK |