



MULTIPOINT IDC TERMINAL

1. SCOPE

1.1. Content

This specification covers the requirements for product performance, test methods and quality assurance MULTIPOINT IDC TERMINAL.

2. APPLICABLE DOCUMENTS AND FORMS

The following documents form a part of this specification to the extent specified herein.

In the event of conflict between the requirements of this specification and the product drawing, the product drawing shall take precedence.

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2.1. TE Documents

- 501-78843: Qualification Test Report
- 408-78256: Instruction Sheets

2.2. Industry Documents

- MIL-STD-202: Test methods for Electronics and Electrical Component Parts
- EIA 364: Electrical Connector / Socket Test Procedures Including Environmental Classifications
- IEC 512: Test Specification

3. REQUIREMENTS

3.1. Design and Construction

Product shall be of the design, construction, materials and physical dimensions specified on the applicable product drawing.

3.2. Materials

- Contact
 - (1) Material: Copper Alloy
 - Finish: Sn plating
- Housing
 - (1) Material: LCP
 - (2) Flammability: UL94 V-0

3.3. Ratings

Voltage	Current	Temperature
30V AC/DC	Figure 1,2, Derating curve is paragraph 6	-55°C to 125°C Included temperature rising by energized current

- Current rating [A] :Temperature rising: 30°C MAX

Position	AWG24	AWG26
2POSN	4.2	3.8
4POSN	3.6	3.2
5POSN	3.5	3.2

Figure 1

- Current rating [A] : Ambient temperature: 25°C Temperature rising: 100°C

Position	AWG24	AWG26
2POSN	7.8	7
4POSN	6.7	6.1
5POSN	6.6	5.9

Figure 2

3.4. Performance Requirements and Test Descriptions

The product shall be designed to meet the electrical, mechanical and environmental performance requirements specified in Figure 3. All tests shall be performed in the room temperature, unless otherwise specified.

3.5. Test Requirements and Procedures Summary

Para	TEST DESCRIPTION	REQUIREMENT	PROCEDURE
3.5.1	Examination of Product	Meets requirements of product drawing and TE Specification	Visual inspection No physical damage
3.5.2	Micro section	Visual Inspection	100 x magnification (According to dimension of the system) IEC 60352-4 Sect 7.2.5
ELECTRICAL			
3.5.3	Termination Resistance (Low Level)	Initial:10 mΩ Max. Final: Δ5mΩ Max	Subject mated contacts assembled in housing to 20 mV Max open circuit. at 10 mA Max closed circuit. Figure. 5. IEC 60512-2-2 Test 2b
3.5.4	Dielectric withstanding Voltage	No flashover or breakdown of voltage Current leakage:0.5mA Max.	Test voltage 500V AC Duration 1minute. Test between adjacent circuits of mated connectors. IEC60512-4-1 Test 4a
3.5.5	Insulation Resistance	100 MΩ Min.	Test voltage 250V DC Time: 1 minute Test between adjacent circuits of mated connectors. IEC 60512-3-1 Test 3a Method B
3.5.6	Temperature Rising	Temperature rising: specified value Max. Under loaded specified current. Refer Figure 1 and 2	Measure temperature rising by energized current. Figure. 1, Figure. 2 and Figure.5 IEC 60512-5-1 Test 5a
MECHANICAL			
3.5.7	Vibration Sinusoidal High Frequency	No electrical discontinuity greater than 1μs. Shall occur. Termination Resistance (Low Level)	Vibration Frequency:10~2000Hz / 15min. Amplitude: 1.5mm Max Accelerated Velocity: 196 m/s ² Vibration Direction: X, Y, Z Duration: 5sweep cycles Fixed position of cable:200mm IEC60512-6-4 Test 6d
3.5.8	Physical Shock	No electrical discontinuity greater than 1 μs. Shall occur. Termination Resistance (Low Level)	Accelerated Velocity: 490 m/s ² Waveform : Swave Duration : 11 m s Number of Drops: 3 drops each to normal and reversed directions of X, Y and Z axes, totally 18 drops. Fixed position of cable:100mm IEC60512-6-3 Test 6c
3.5.9	Bending of the wire	No electrical discontinuity greater than 1μs. Shall occur. Termination Resistance (Low Level)	Bending of the wire with monitoring of contact disturbance. Axial load: 1N(AWG26) 2N(AWG24) Bending angle: 30° Cycles: 10 IEC 60352-4
3.5.10	Wire pull out force	Reference	Operation Speed: 30mm/min.

Para	TEST DESCRIPTION	REQUIREMENT	PROCEDURE
3.5.11	Press in force	Reference	Measure the force required to Press into housing with cable.
ENVIRONMENTAL			
3.5.12	Thermal Shock	Termination Resistance (Low Level)	Subject mated specimen to Ta=-55±2°C to Tb=+125±2°C, duration t1: 30min each extreme, 25 cycles IEC 60512-11-4 Test 11d (IEC 60068-2-14 Test Na)
3.5.13	Humidity-Temperature Cycling	Insulation resistance Dielectric Strength Termination resistance (Low Level)	Mated connector, 25~65°C, 80~95 % R. H. 10 cycles Cold shock -10°C(not) performed The measurement is held after being left indoor for 3 hours.1cycle=24hours EIA 364-31 Method 4 IEC60068-2-30
3.5.14	Cold	Termination Resistance (Low Level)	Mated connector, -55 °C 2h MIL-STD-202 Method 103 Condition B
3.5.15	Mixed Flowing Gas	Termination Resistance (Low Level)	H ₂ S 100ppb SO ₂ 500ppb Temperature 25°C Rel. humidity 75% Duration 10d IEC 60068-2-60 method 1
3.5.16	Temperature Life (Heat Aging)	Termination Resistance (Low Level)	Subject mated specimen to +125°C Duration TG2 time:1000h TG4 time: 168h IEC 60512-11-9 Test 11i (IEC 60068-2-2)
3.5.17	Salt Spray	Termination Resistance (Low Level)	Subject mated specimen to 5±1% salt spray Temperature: 35±2°C Duration time: 96h IEC 60512-11-6
3.5.18	Reflow Solderability	Visual Inspection	Solder paste: SnAgCu Peak temperature: 235°C IEC 60068-2-58
3.5.19	Reflow resistance to soldering heat	Visual Inspection	Solder paste: SnAgCu Peak temperature: 260°C 2cycles JEDEC J-STD-020


NOTE

Shall meet visual requirements, show no physical damage, and meet requirements of additional tests as specified in the Product Qualification and Requalification Test Sequence shown in Figure 4.

Figure 3

4. PRODUCT QUALIFICATION AND REQUALIFICATION TEST SEQUENCE

Test Examination	Test Group											
	1	2	3	4	5	6	7	8	9	10	11	
	Test Sequence (a)											
Examination of Product	1	1,6	1,6	1,11	1	1	1,3	1,10	1,5	1,3	1,3	
Micro section	2											
Termination Resistance (Low Level)		2,5	2,5	2,8				2,7	2,4			
Dielectric withstanding Voltage				4,9				4,8				
Insulation Resistance				3,10				3,9				
Temperature Rising					2							
Vibration			3									
Physical Shock			4									
Bending of the wire		3										
Wire pull out force						2						
Press in force							2					
Thermal Shock								5				
Humidity-Temperature Cycling								6				
Cold				5								
Mixed Flowing Gas				7								
Temperature Life		4		6								
Salt Spray									3			
Reflow Solderability										2		
Reflow resistance to soldering heat											2	



NOTE

(a) Numbers indicate sequence in which tests are performed.

Figure 4

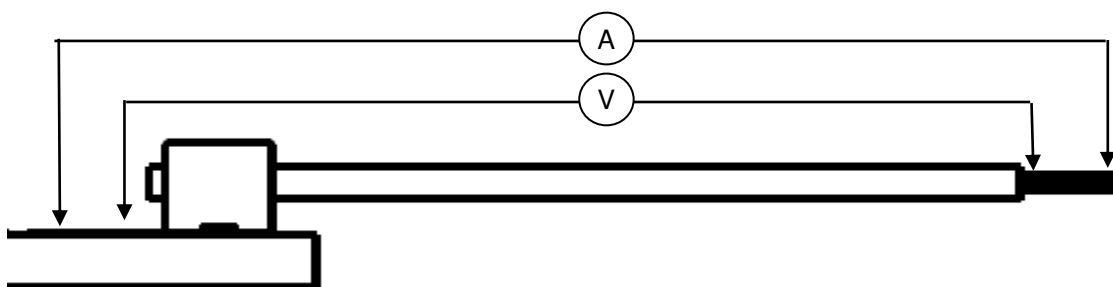


Figure 5 Termination Resistance (Low Level) and Temperature Rising vs. Current Measuring Methods

5. QUALIFICATION REQUIREMENTS:

5.1. Qualification Testing

- Sample Selection
Connector housings and contacts shall be prepared in accordance with applicable Instruction Sheets. They shall be selected at random from current production.
- Test Sequence
Qualification inspection shall be verified by Testing samples as specified in Figure 4.
- Test conditions
Unless otherwise specified, all the tests shall be performed in any combination of the test condition

Temperature	15-35°C
Relative humidity	45-75%
Atmospheric Pressure	866.6-1066.6hPa

5.2. Requalification Testing

If changes significantly affecting form, fit or function are made to the product or to the manufacturing process, product assurance shall coordinate requalification testing, consisting of all or part of the original testing sequence as determined by envelopment product, quality and reliability engineering.

5.3. Acceptance

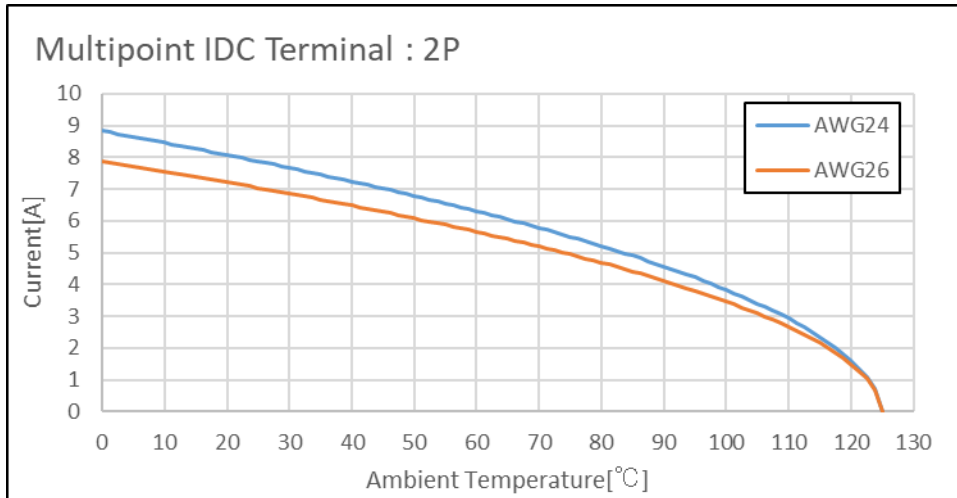
Acceptance is based on verification that the product meets the requirements of Figure.3. Failures attributed to equipment, test get up, or operator deficiencies shall not disqualify the product. When product failure occurs, corrective action shall be taken and samples resubmitted for qualification. Testing to confirm corrective action is required before resubmittal.

5.4. Quality Conformance Inspection

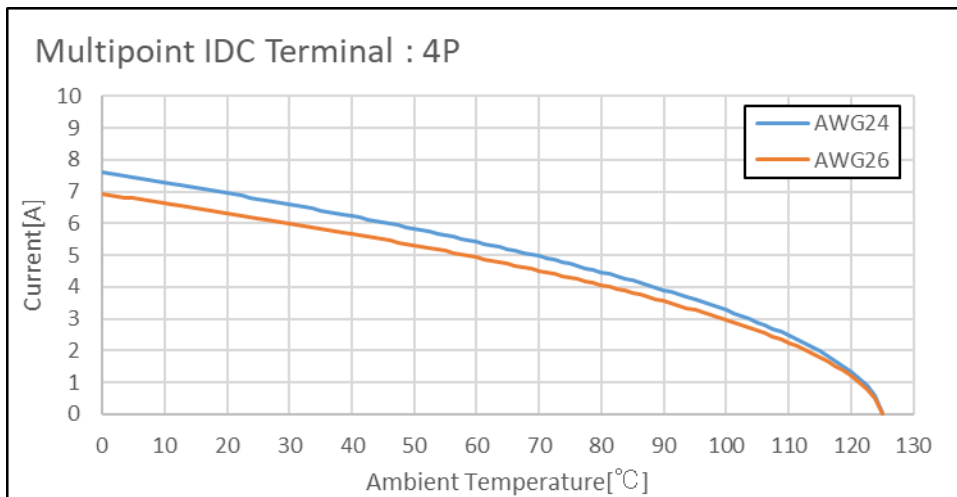
The applicable TE quality inspection plan will specify the sampling acceptable quality level to be used. Dimensional and functional requirements shall be in accordance with the applicable product drawing and this specification.

6. DERATING CURVE (REFERENCE, DERATING FACTOR: 0.8)

◆ 2POSN



◆ 4POSN



◆ 5POSN

