3M™ D Sub Socket Series 8RXX
3M D Sub Plug Series 8PXX

Product Specification 78-5102-0089-8

Revised: 03/28/2013

Contents

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1. Scope

This document summarizes test methods, test conditions and product performance requirements for the 3M D Sub Solder Cup Socket 8RXX and D Sub Solder Cup Plug 8PXX. Listings of materials, finishes, test conditions, and test standards are included in this specification. In the event of conflict between this specification and any documents listed below, the listed documentation supersedes this specification.

2. 3M Customer Documents

78-5100-2357-1 Customer drawing for D Sub Solder Cup Socket 8RXX.
78-5100-2402-5 Customer drawing for D Sub Solder Cup Plug 8PXX.

3. Performance and Test Description

Unless otherwise specified, all tests shall be performed on 8R09-N001 sockets mated to 8P09-N001 plugs at ambient environmental conditions per EIA-364 using 20 AWG discrete wire. Unless otherwise specified, all values and limits are typical of those obtained by qualification testing of the subject product. All specifications are subject to revision and change without notice from 3M.

4. Requirements Overview

4.1 Ratings

Dielectric withstanding voltage: 1000 VAC_{RMS} at sea level

Current:

3.0 Amperes, All contacts powered.

Temperature: -55°C to +105°C

Insulation resistance: >3 x10^^{9} Ω at 500 VDC

4.2 Materials

Socket insulation: Thermal Plastic, 94V-0
Socket contact:Copper alloy
Shell: G1413 SPCC or equivalent
Rivet Boardlock: Copper Alloy
Plug insulation: Thermal Plastic, 94V-0
Plug pin: Copper alloy

4.3 Finishes

Plating: (socket and header)

Nickel: 40 µ inches
Gold options:1 µ inches, 10 µ inches, 30 µ inches.
Solder Tails: 80 µ inches Tin (Lead Free) on solder tails

4.4 Regulatory Compliance

See the Regulatory Information Appendix (RIA) in the “RoHS compliance” section of **www.3Mconnectors.com** for compliance information. See customer drawings for regulatory specifics on each connector.

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5. Electrical

Description or parameter	Values & limits	Units	Requirement or conditions	Test standard or method
Dielectric withstanding voltage	1000	VAC_{RMS}	Measured between adjacent and opposing contacts. No disruptive discharge during 1 minute duration. Sea level with 70% relative humidity.	EIA-364-20A
Current rating	3.0	Amperes	All contacts driven.	
Low level connection resistance	≤20 ≤100	Millivolts MilliAmps	15 milliohm maximum ΔR contact resistance per mated interface throughout testing.	EIA-364-23A
Insulation resistance	>3 x 10^9	Ohms	Measured between adjacent and opposing contacts. 500 VDC for 1 minute duration.	EIA-364-21A

6. Mechanical

Description or parameter	Values & limits	Units	Requirement or conditions	Test standard or method
Mating Force / Contact	5.5	Kg	20 cycles / 1 pc	EIA-364-13A
Unmating Force / Contact	1.7	Kg	20 cycles / 1 pc	EIA-364-13A
Durability	20	Mating cycles	15 milliohm maximum ΔR contact resistance per mated interface throughout testing.	EIA-364-23A

7. Physical

Description or parameter	Values & limits	Units	Requirement or conditions	Test standard or method
Visual			No defects such as deformation, blister, damage, crack, etc.	Quality Inspection Plan
Plating thickness Nickel	40	Micro-inches	Average of random measurements from any 3 lots	Xray Coating Tester
Gold	1, 10, 30	Micro-inches		
Solder Tails	80	Micro-inches	Tin (Lead Free)	

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8. Environmental

Description or parameter	Values & limits	Units	Requirement or conditions	Test standard or method
Thermal Shock	**-55 - 105**	**degrees C**	**Ri = 15 milliohm. Rf = Ri ± 20milliohm. 5 cycles.**	**EIA-364-32B**
Humidity	**25 - 65 95%**	**degrees C RH**	**Ri = 15 milliohm. Rf = Ri ± 20milliohm. 48 HR with Connector mated.**	**EIA-364-31A**
Header solderability, lead-free dip test	**>95**	**Percent**	**Coverage of solderable area**	**EIA-364-52**

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Disclaimer

Unless otherwise noted, references to industry specifications are intended to indicate substantial compliance to the material elements of the specification. Such references should not be construed as a guarantee of compliance to all requirements in a given specification.

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