

3M Chip Carrier Sockets 8400 Series

Product Specification 78-5102-0186-2

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1.0 Scope

This document summarizes test methods, test conditions, and product performance requirements for the 3M Chip Carrier Sockets 8400 Series. In the event of performance data conflicts between this specification and any documents listed below, this specification supersedes those documents. Materials and finishes listed in the documents below apply and are included in this specification for reference only.

2.0 3M Customer Documents

78-5100-2147 Technical data sheet for 3M Chip Carrier Sockets, Surface Moun

78-5100-2148 Technical data sheet for 3M Chip Carrier Sockets, Low Profile, 4-Row, Through-Hole 8400 Series

3.0 Performance Testing

Unless otherwise specified, all tests shall be performed on 84XX-X1B1-RK-TP sockets at ambient environmental conditions. 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.

4.0 Performance and Characteristics Overview

4.1 Ratings

Dielectric Withstanding Voltage: 1000 V_{AC} for 1 minute

Temperature: -40°C to +105°C

Insulation resistance: >10 x10⁹ Ω at 500 V_{DC}

4.2 Materials

Through-Hole Socket:

Housing insulation: Glass filled PBT, black, 94V-0
Contact: Copper alloy

Surface Mount Socket:

Insulation: Glass filled PPS, black, 94V-0
Contact: Copper alloy

4.3 Finishes

Plating:

Nickel: Underplating: 50 μ" [1.27 μm] Nickel - Overall (Minimum)

Solder Tails: 100 μ" [2.54 μm] Matte Tin (Minimum)

Wiping Area: 100 μ" [2.54 μm] Matte Tin (Minimum)

4.4 Regulatory Compliance

See 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.

5.0 Electrical

Description or Parameter	Values & Limits	Units	Requirement or Conditions	Test Standard or Method
Dielectric Strength	500	Volts _{AC}	Measured between adjacent and opposing contacts. No disruptive discharge during 1 minute duration.	-
Contact interface resistance	30	Milliohms (Initial)	30 milliohm maximum ΔR contact resistance per interface throughout testing.	-
Insulation resistance	>10000	Megohms	Measured between contacts and insulator with 500 V _{DC} .	-
Capacitance	<1.0	pF	Less than 1.0 pF capacitance at 1000 kHz	-

6.0 Mechanical

Description or Parameter	Values & Limits	Units	Requirement or Conditions	Test Standard or Method
Vibration	10-2,000	Hz	Tested at 0.06 inch double amplitude per MIL-STD-1344A Method 2005.1	MIL-STD-1344A Method 2005.1
	20	G's		
Mechanical Shock	100	G's	Specimen subject to 100 G's half sine in 6 miliseconds per MIL-STD-1344A Method 2004.1	MIL-STD-1344A Method 2004.1
Acceleration	15	G's	Per MIL-STD-810C Method 513.2	MIL-STD-810C Method 513.2
Contact Force	170	g / per pin	Through-hole socket	-
	210	g / per pin	Surface mount socket	
Durability	125	Cycles	Mating and unmating cycle rate not exceeding 10 cycles/minute per MIL-STD-1344 Method 2D16	MIL-STD-1344 Method 2D16

7.0 Environmental

Description or Parameter	Values & Limits	Units	Requirement or Conditions	Test Standard or Method
Thermal Shock	-55 to +105	°C	No physical abnormalities or damage. Per MIL-STD-1344, method 1003, condition A.	MIL-STD-1344 Method 1003
Humidity-Temperature Cycling	80	°C	Tested for 16 hours per MIL-STD-1344, method 1002	MIL-STD-1344 Method 1002
	85	% Rel. Humidity		