

**3M™ Molded Assembly, 2M Series**  
2mm x 2mm pitch

**Product Specification: 78-5102-0028-6**

**Revised: 6-01-2022**



## 1. Scope

This document summarizes test methods, test conditions and product performance requirements for the 3M™ Molded Assembly, 2M Series. Listings of materials, finishes, test conditions, and test standards are included. In the event of conflict between this specification and any documents listed below, the listed documentation supersedes this specification.

## 2. 3M Documents

78-5100-2753-1	TS-2753, 3M™ Molded Assembly, 2M Series
78-5100-2694-7	TS-2694, 3M™ High Flex Life Cable, 3250 Series
78-5100-0452-2	TS-0452, 3M™ Round Conductor Flat Cable, 3625 Series
78-5100-2338-1	TS-2338, 3M™ Round Conductor Flat Cable, Haloge Free, HF625 Series

## 3. Performance and Test Description

For 2M Socket Assembly all tests were performed on 3M™ Molded Socket 2mm X 2mm Cable Assembly Connector, 2 row series 870, 50 position mated to 3M™ 1552 Series Header 2mm X 2mm, 50 positions using 3M™ Round Conductor Flat Cable 3625, 3250 at ambient environmental conditions per EIA-364. For 2M PCB Assembly all tests were performed on 3M™ Molded PCB, 2mm X 2mm Cable Assembly Connector, 2 row series 879, 50 positions using 3M™ Round Conductor Flat Cable 3625, 3250 at ambient environmental conditions per EIA-364. Additionally. 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

Diel. Withstanding Voltage:	1000VAC <sub>RMS</sub> at sea level
Temperature:	-55°C to +105°C (may be limited by chosen cable)
Insulation Resistance:	>1 x10 <sup>9</sup> Ω at 500 V <sub>DC</sub>
Current Rating:	1A

### Agency Listings:

Underwriters Laborytory (UL): File No. E68080

#### UL Ratings:

Temperature:	120°C
Voltage:	30V

#### CUL Ratings:

Temperature:	120°C
Voltage:	30V

### 4.2 Materials

Insulation:	Glass Filled Polyester (PBT)
Flammability:	UL 94-V0
Contact material:	Copper Alloy
Underplating & U Slot:	50 - 150μ" [1.27 - 3.81μm] Nickel

### 4.3 Finishes

Wiping Area (Socket):	30μ" [0.76μm] AVG. Gold
Contact Tails (PCB):	300 - 400μ" [7.62 - 10.16μm] Matte Tin

### 4.4 Regulatory Compliance

RoHS Compliant. For regulatory information about this product, visit [3M.com/regs](http://3M.com/regs) or contact your 3M representative.

**5. Electrical Testing**

Description or parameter	Values & limits	Units	Requirement or conditions	Test standard or method
Dielectric withstanding voltage	1000	VAC <sub>RMS</sub>	Measured between adjacent and opposing contacts. No disruptive discharge during 1 minute duration. Sea level with 70% relative humidity.	EIA-364-20 Method B
Insulation resistance	>1 x 10 <sup>9</sup>	Ohms	Measured between adjacent and opposing contacts. 500 VDC for 1 minute duration.	EIA-364-21
Low Level Connection Resistance (LLCR)	<10 Δ	Milliohms	10 milliohm maximum ΔR contact resistance per mated interface throughout testing.	EIA-364-23

**6. Mechanical Testing**

Description or parameter	Values & limits	Units	Requirement or conditions	Test standard or method
Vibration	≤10	ns	Mated connectors shall exhibit no discontinuities greater than specified. 10 milliohm maximum ΔR contact resistance per mated interface throughout testing.	EIA-364-28D Condition III
Mating Force / Contact	450 max	Grams	Mated to a 0.020" square pin.	EIA-364-13 Method B
Durability (Preconditioning)	50	Mating cycles	10 milliohm maximum ΔR contact resistance per mated interface throughout testing.	EIA-364-13
Cover Retention Force	5	N	minimum Retention Force per contact	Staight pull until mechanical failure

**7. Physical Testing**

Description or parameter	Values & limits	Units	Requirement or conditions	Test standard or method
Visual			No defects such as deformation, blister, damage, crack, etc.	EIA-364-18
Plating Thickness Nickel	1.27-3.81 (50-150)	Micro-meter (Micro-inch)	Random measurements from any 3 lots shall not be outside of specification.	EIA-364-48 Method C
Plating Thickness Gold	0.76 min (30)	Micro-meter (Micro-inch)	Minimum of random measurements from any 3 lots shall not be less than specified.	

### 8. Environmental Testing

Description or parameter	Values & limits	Units	Requirement or conditions	Test standard or method
Temperature Life (Full)	1008 125	hours °C	No physical abnormalities. 10 milliohm maximum $\Delta R$ contact resistance throughout testing.*	EIA-364-17 Method A Condition 5D
Thermal Shock	5	Cycles	No physical abnormalities. 10 milliohm maximum $\Delta R$ contact resistance per mated interface throughout testing.*	EIA-364-32C Test Cond. VII
Humidity	10	24 hr cycles	25-65 C / 90-98%RH with -10 degree C subcycles. 10 milliohm maximum $\Delta R$ contact resistance per mated interface throughout testing.	EIA-364-31B Method 3 Condition 7a
Solderability (Header)	As-received	hours	95 percent coverage of solderable area	EIA-364-52
	8			
Salt Spray	5	% NaCl	48 hours. 10 milliohm maximum $\Delta R$ contact resistance per mated interface throughout testing.	EIA-364-26B Test Cond. B

### 9. Test Sequence

TEST	Sequenced Numbers for Test Group					
	A	B	C	D	E	F
Visual				1	1	1, 7
Low Level Connection Resistance (LLCR)	1,3,5	1,3,5,7	1,3	2,4,6	2,4,6	
Vibration				3		
Physical Shock				5	3	
Durability (with Environmental)		2				4
Temperature Life (Thermal Aging)			2			
Humidity	4	6				
Thermal Shock	2	4				
Salt Spray					5	
Dielectric Withstanding Voltage						2, 5
Dielectric Breakdown Voltage						8
Insulation Resistance						3, 6

#### Independent Tests

- 1 Mating Force
- 2 Plating Thickness
- 3 Solderability
- 4 Dimensions
- 5 Cover/Strain Relief Retention

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

Regulatory: For regulatory information about this product, visit [3M.com/regs](http://3M.com/regs)

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