3M™ Wiremount Sockets
IDC Connector
3000 Series

Product Specification 78-5102-0014-0

Released: 09-27-11

3M Electronic Solutions Division
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1. Scope

This document summarizes test methods, test conditions and product performance requirements for the 3M Wiremount Sockets 3000 Series. 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 Documents

78-5100-0718-6	TS-0718, Technical Data Sheet for 3000 Series Wiremount Socket
78-5100-0719-4	TS-0719, Technical Data Sheet for 3000 Series Wiremount Socket, Preassembled
34-7027-4814-5	3443-94 3M™ Locator Plate Instructions

3. Performance and Test Description

Unless otherwise specified, all tests shall be performed on 3000 Series Sockets with 30 µ" of gold mated to 3M™ Headers 2500 Series using 3M™ Cable 3365/60 and 3801/60 at ambient environmental conditions per EIA-364. 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: 500 VAC_{RMS} at sea level

Current: (EIA-364-070 method 2, 30°C maximum temperature rise.)

	1 Line	6* Lines	All Lines
28 AWG	4.50	1.75	1.00
26 AWG	4.75	2.00	1.00

Temperature: -55°C to +105°C

Insulation Resistance: >1 $x10^9\Omega$ at 500 VDC

*Lines are adjacent in 2x3 configuration

4.2 Materials

Insulation: Glass Filled Polyester PBT
Strain Relief: Plastic, Metal
Contact: Copper Alloy

4.3 Finishes

Plating:

Nickel: 50 - 150 µ inches, ASTM B689-97, SAE AMS-QQ-N-290
Gold - Contact: 30 µ inches, MIL-G-45204 Type II, Grade C

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	500		VAC_{RMS}	Measured between adjacent and opposing contacts. No disruptive discharge during 1 minute duration. Sea level with 70% relative humidity.	EIA-364-20B
Current Rating	28 AWG	26 AWG	Amperes	Wire gage.	EIA-364-70A
	4.50	4.75		1 line driven. 30°C temp. rise. 20% derated.	
	1.75	2.00		6 line driven. 30°C temp. rise. 20% derated.	
	1.00	1.00		All line driven. 30°C temp. rise. 20% derated.	
Low Level Connection Resistance	<10		Milliohms	10 milliohm maximum ΔR contact resistance per mated interface throughout testing.	EIA-364-23A
Insulation Resistance	$>1x10^9$		Ohms	Measured between adjacent and opposing contacts. 500 VDC for 1 minute duration.	EIA-364-21 B

6. Mechanical

Description or Parameter	Values & Limits	Units	Requirement or Conditions	Test Standard or Method
Header Pin Retention / Contact	>900	g	Force / contact required to remove pin from header body.	EIA-364-29B
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
Physical Shock	≤10	ns	Mated connectors shall exhibit no discontinuities greater than specified. 10 milliohm maximum ΔR contact resistance per mated interface throughout testing.	EIA-364-27B Test Cond. A
Mating Force / Contact	0.50 max	lbs	Mated to a .025" square pin. (Insertion Force)	EIA-364-13B
Unmating Force / Contact	0.075 min	lbs	Mated to a .025" square pin. (Withdrawl Force)	EIA-364-13B
Contact Wiper Normal Force	≥100	g	Displacement equivalent to mating with a .0245" square pin. Test at end of sequence C.	EIA-364-04
Durability (with Environmental)	50 (30 µ")	Mating cycles	10 milliohm maximum △R contact resistance per mated interface throughout testing.	EIA-364-09C

7. Physical

Description or Parameter	Values & Limits	Units	Requirement or Conditions	Test Standard or Method
Visual	NA	NA	No defects such as deformation, blister, damage, crack, etc.	EIA-364-18A
(Metallic Coating) Adhesion	NA	NA	No cracking, flaking.	MIL-G-45204 Section 4.5.2
Plating thickness Nickel Gold Tin	 50-150 30 100-300	µ"	Average of random measurements from any 3 lots.	EIA-364-48
Header Solderability, Lead-Free Dip Test	>95	Percent	Coverage of solderable area.	EIA-364-52 Category 3

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8. Environmental

Description or Parameter	Values & Limits	Units	Requirement or Conditions	Test Standard or Method
Temperature Life (Thermal Aging)	**105**	**degrees C**	**1000 hours. No physical abnormalities . 10 milliohm maximum ∆R contact resistance per mated interface throughout testing.**	**EIA-364-17A Method A Condition 4**
Humidity	**10**	**24 hr cycles**	**25-65 C / 90-98%RH with -10 degree C subcycles. 10 milliohm maximum ∆R contact resistance per mated interface throughout testing.**	**EIA-364-31B Method 3 Condition 7a**
Thermal Shock	**5**	**cycles**	**-55 to +105 degrees C. No evidence of mechanical damage. 10 milliohm maximum ∆R contact resistance per mated interface throughout testing.**	**EIA-364-32C Test Cond. VII**
Salt Spray	**5**	**% NaCl**	**48 hours. 10 milliohm maximum ∆R contact resistance per mated interface throughout testing.**	**EIA-364-26B Test Cond. B**

9. Test Sequence

9.1 Sequenced Tests **TEST FLOW**

Test	Sequence Numbers for Test Group				
	A	**B**	**C**	**D**	**E**
Visual				1	1
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	
Durability (with Environmental)		2			3
Temperature Life (Thermal Aging)			2		
Humidity	4	6			
Thermal Shock	2	4			
Salt Spray					5
Contact Wiper Normal Force			4		
Number of Samples (Connectors)	20	6	20	20	10

9.2 Independent Tests

1. Contact Wiper Normal Force
2. Mating &Unmating Forces
3. Contact Retention
4. Contact Engagement & Separation
5. Cover Strain Relief Retention
6. Current Rating
7. Dielectric Withstanding Voltage
8. Insulation Resistance
9. Plating Thickness
10. Solderability
11. (Metal Coating) Adhesion

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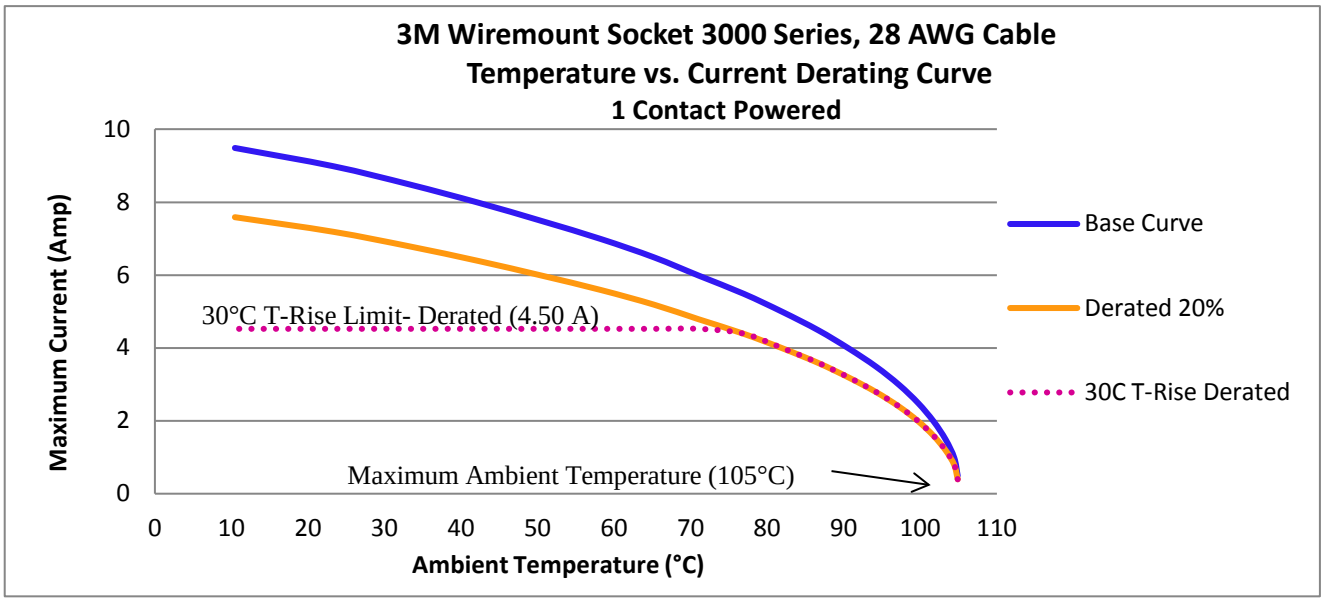
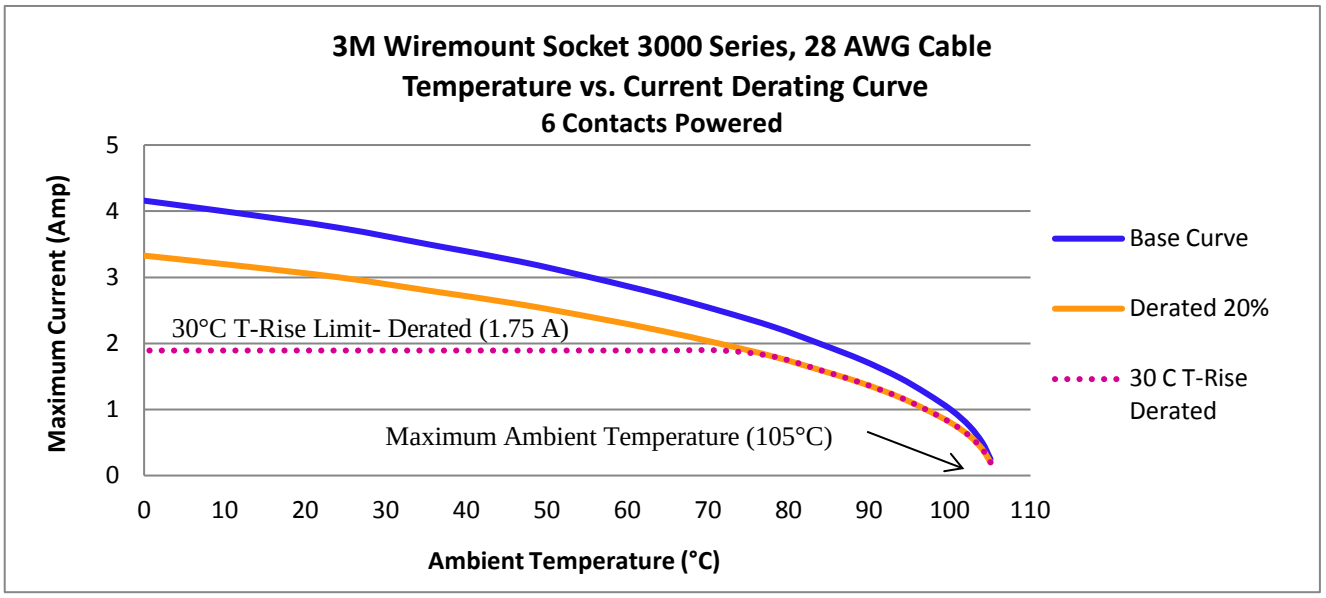
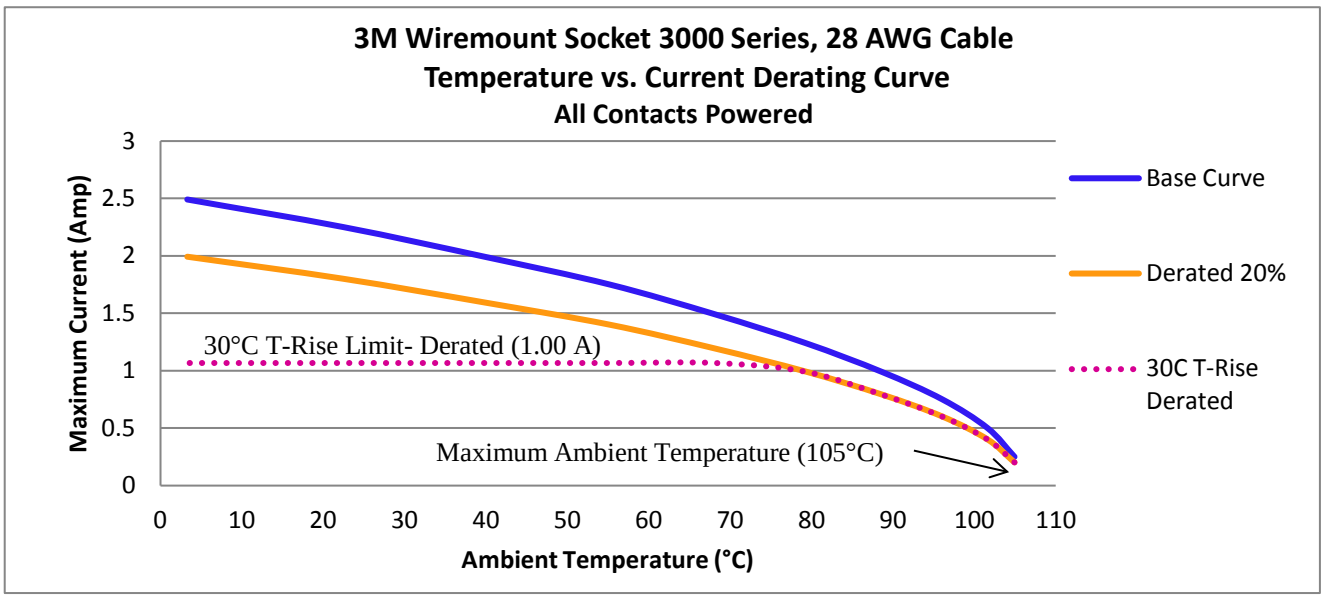
10. Figures

10.1 Current Rating







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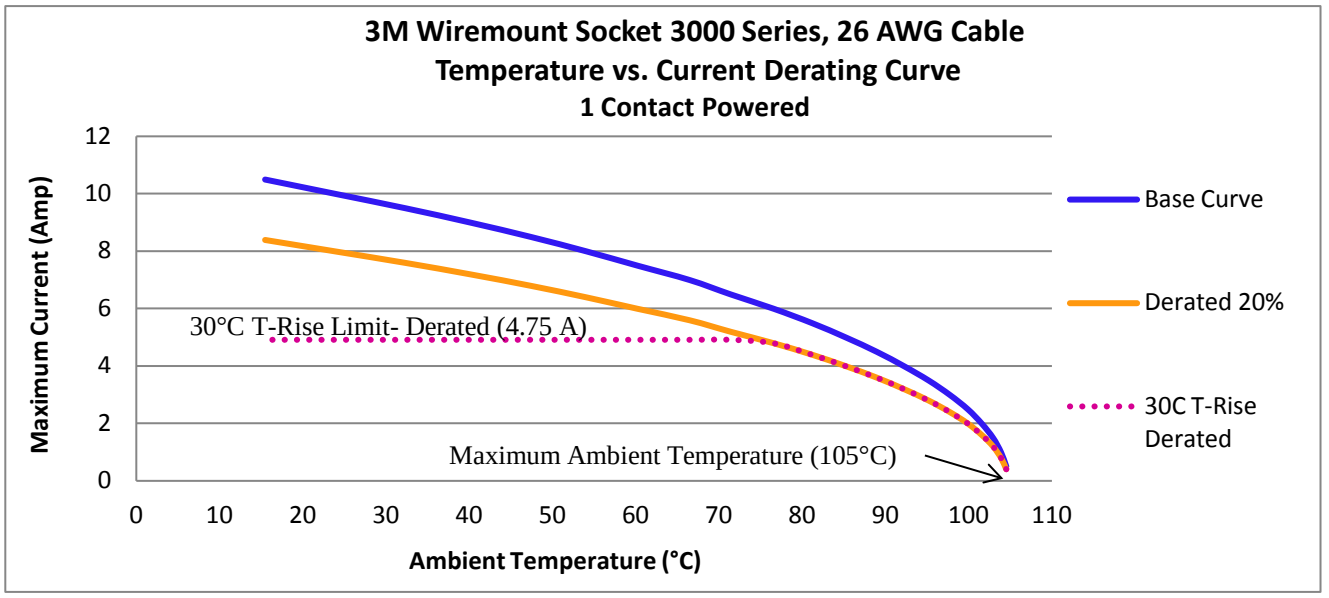

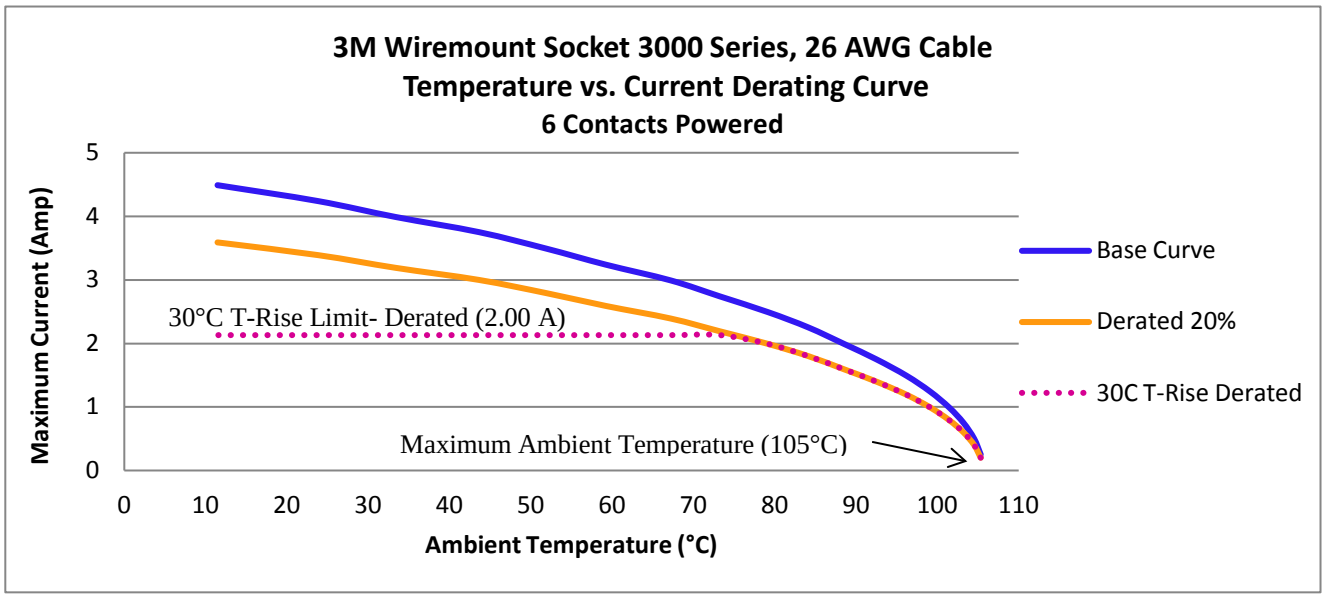

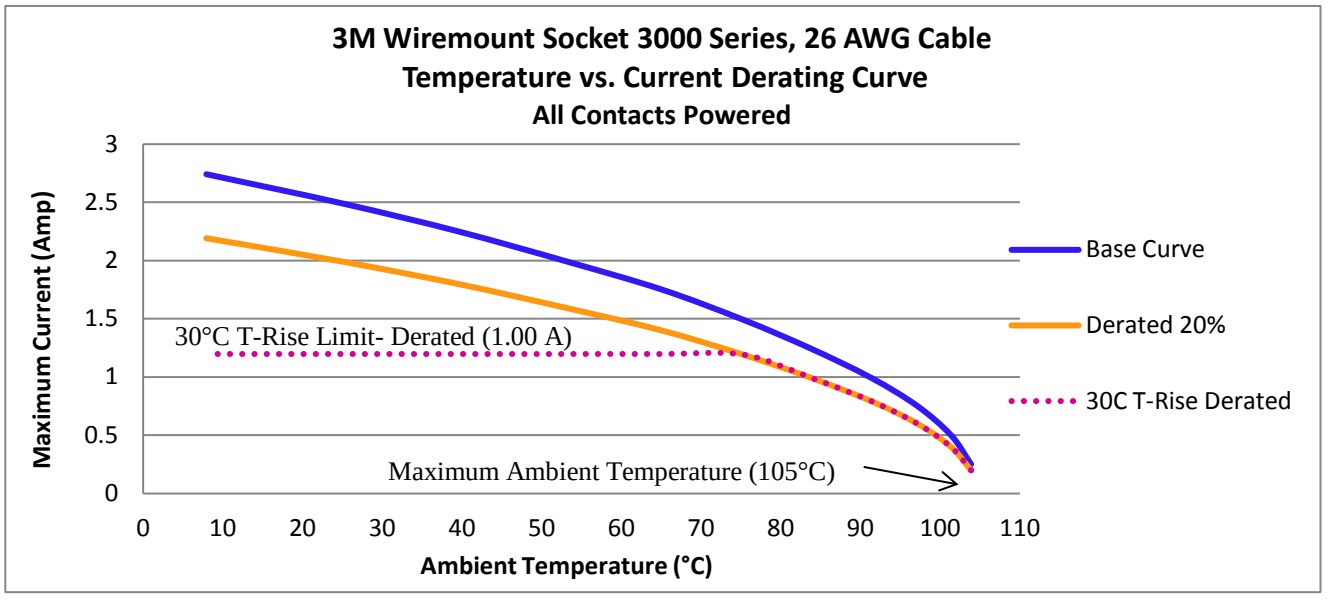

11. Agency Listings

11.1 Underwriters Laboratories (UL)

Agency	File No.
UL	E68080
CUL	E68080

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