

3M™ Three-Wall Header 3000 Series
3M™ Four-Wall Header 3000 Series
3M™ Three-Wall Condo Header 3000 Series
3M™ Four-Wall Condo Header 3000 Series

Product Specification 78-5102-0008-0

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1. Scope

This document summarizes test methods, test conditions and product performance requirements for the 3M™ Three-Wall and Four-Wall Headers 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

78-5100-0771-5	TS-0771, Technical Data Sheet for 3M™ Three-Wall Header, N3000 Series
78-5100-0772-3	TS-0772, Technical Data Sheet for 3M™ Four-Wall Header, N3000 and D3000
78-5100-0773-1	TS-0773, Technical Data Sheet for 3M™ Three-Wall Condo Header, N3000 Series
78-5100-0774-9	TS-0774, Technical Data Sheet for 3M™ Four-Wall Condo Header, N3000 Series
78-9100-7795-3	Instructions for 3M™ Polarizing Key, 3518

3. Performance and Test Description

Unless otherwise specified, all tests shall be performed on the 3M™ Four-Wall Header, N3000 Series, part number N3433-XXXXRB or N3372-XXXXRB with 30μ" of gold mated to 3M™ Wiremount Socket, 3000 Series, part number 3425-XXXX or 3334-XXXX sockets with 30μ" of gold using 3M™ Round Conductor Flat Cable, 3365 Series and 3M™ Round Conductor Flat Cable, 3801 Series 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.

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
5.00	3.00	1.75

*Lines are adjacent in 2x3 configuration

Temperature: -55°C to +105°C

Insulation Resistance: >1 x10⁹Ω at 500 VDC

UL Rating: 1.0A, 125V, 130C

4.2 Materials

Insulation: Glass Filled PCT, High Temperature Option

Contact: Copper Alloy

4.3 Finishes

Plating:

TS-0771, TS-0772, TS-0773, TS-0774

Overall, Nickel: 50 - 150 μ inches, ASTM B689-97, SAE AMS-QQ-N-290

Wipe, Gold: 30 μ inches Avg, MIL-G-45204 Type II, Grade C, ASTM B488-01 (N3XXX-XXXXRB)
10 μ inches Avg, MIL-G-45204 Type II, Grade C, ASTM B488-01 (D3XXX-XXXXAR)

Tail: 200-300 μ inches Matte Tin (N3XXX-XXXRB)
40-120 μ inches Matte Tin (D3XXX-XXXXAR)
Flash Gold (3XXX-XX05EB)

TS-0478 (Compliant Pin)

Overall, Nickel: 50 - 150 μ inches, ASTM B689-97, SAE AMS-QQ-N-290

Wipe, Gold: 30 μ inches Avg, MIL-G-45204 Type II, Grade C, ASTM B488-01 (N3XXX-XXXXRB)

Tail, Matte Tin: 200-300 μ inches Matte Tin (N3XXX-XXXRB)

4.4 Regulatory Compliance

For regulatory information about this product, visit 3M.com/regs or contact your 3M representative.

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. Excludes cable.	EIA-364-20F Method A Test Condition I
Dielectric Breakdown Voltage	1000	VAC/sec	Ramp assembled pair at 500V/s until electrical arc. Sea level with 70% relative humidity. Excludes cable.	EIA-364-20F Method A Test Condition I
Insulation Resistance	>1x10 ⁹	Ohms	Mated connectors. Measured between adjacent and opposing contacts. 500 VDC for 1 minute duration.	EIA-364-21F
Current Rating	5.00	Amperes	3M 2560-6002-UB HDR mated to board mount socket connector. Same pin design and wipe plating as 3000 Series Headers.	EIA-364-70A Method 2
	3.00		1 line driven. 30°C temp. rise. 20% derated.	
	1.75		6 line driven. 30°C temp. rise. 20% derated. 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-364-23C

6. Mechanical

Description or Parameter	Values & Limits	Units	Requirement or Conditions	Test Standard or Method
Header Pin Retention / Contact	>15	N	Force / contact required to remove pin from header body.	EIA-364-29B
Vibration	50-2000 5.35	Hz g	1.5 hours X, Y, & Z axis. Mated connector shall exhibit no discontinuities greater than 10 ns and 10 milliohm maximum ΔR contact resistance throughout testing.	EIA-364-28F Condition V, Table 2 Condition A, 1.5 hrs
Physical Shock	50	g	3 Shocks each directions for X, Y, & Z axis. 18 total. Mated connector shall exhibit no discontinuities greater than 10 ns and 10 milliohm maximum ΔR contact resistance throughout testing.	EIA-364-27B Test Cond. C
Durability (with Environmental)	50 (30μ" Au)	Mating cycles	10 milliohm maximum ΔR contact resistance per mated interface throughout testing.	EIA-364-09C
	10 (10u" Au)			

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 4.6.2
Header Plating thickness Nickel (RB, AR, EB) Gold Wipe (RB & EB) Gold Wipe (AR) Tin Tail (RB) Tin Tail (AR) Gold Tail (EB)	50-150 30 Avg 10 Avg 200-300 40-120 Flash	μ"	Average of random measurements from any 3 lots.	EIA-364-48 (A)
Header Solderability, Lead-Free Dip Test	>95	Percent	Coverage of solderable area.	EIA-364-52 (A) Category 3

8. Environmental

Description or Parameter	Values & Limits	Units	Requirement or Conditions	Test Standard or Method
Temperature Life	1000 105	hours °C	No physical abnormalities . 10 milliohm maximum ΔR contact resistance per mated interface throughout testing.	EIA-364-17C Method A Condition 4
Humidity Temperature Cycling	10 +25 to +65 80 to 100 -10	Days °C % RH °C cold shock	-10C sub cycle. No physical abnormalities. 10 milliohm maximum ΔR contact resistance per mated interface throughout testing.	EIA-364-31F Method IV Fig 1
Thermal Shock	-55 to +105 5	°C cycles	No physical abnormalities. 10 milliohm maximum ΔR contact resistance per mated interface throughout testing.	EIA-364-32G Method A, Test Cond. VII
Salt Spray	5 48	% NaCl hours	10 milliohm maximum ΔR contact resistance per mated interface throughout testing.	EIA-364-26C Test Cond. B
Moisture Sensitivity Level (Header)	260 1 Cycle	°C Reflow Cycles	Level 1 (85°C / 85% RH, 168 hours), 1 Reflow. No defects such as deformation, blister, damage, crack, etc., must maintain dimensional stability.	J-STD-020E
				Level 1 (MSL1)

9. Test Sequence

9.1 Sequenced Tests

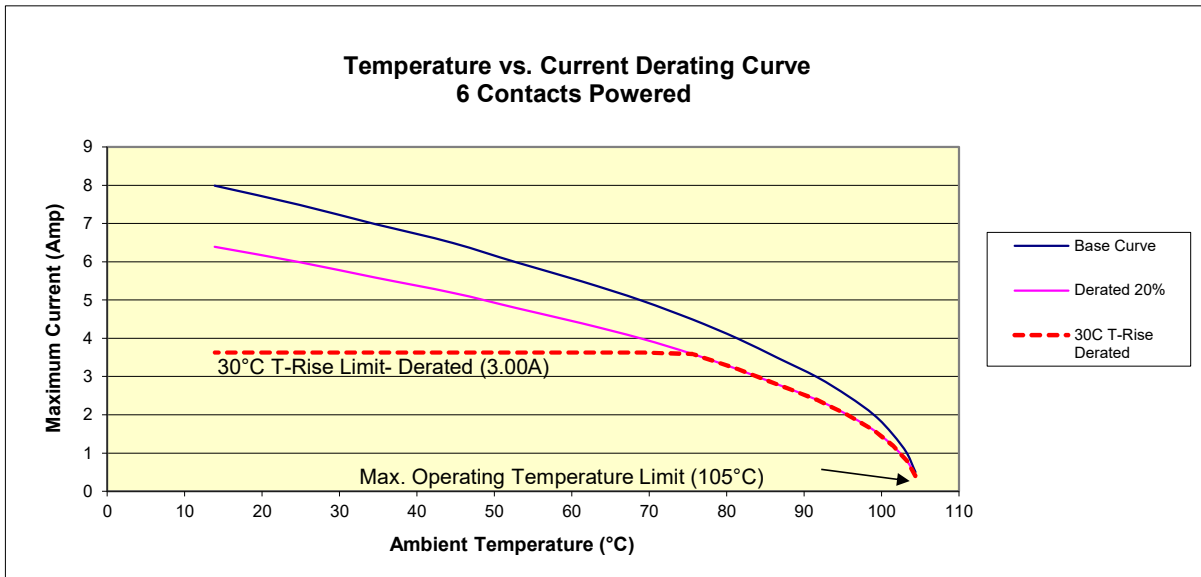
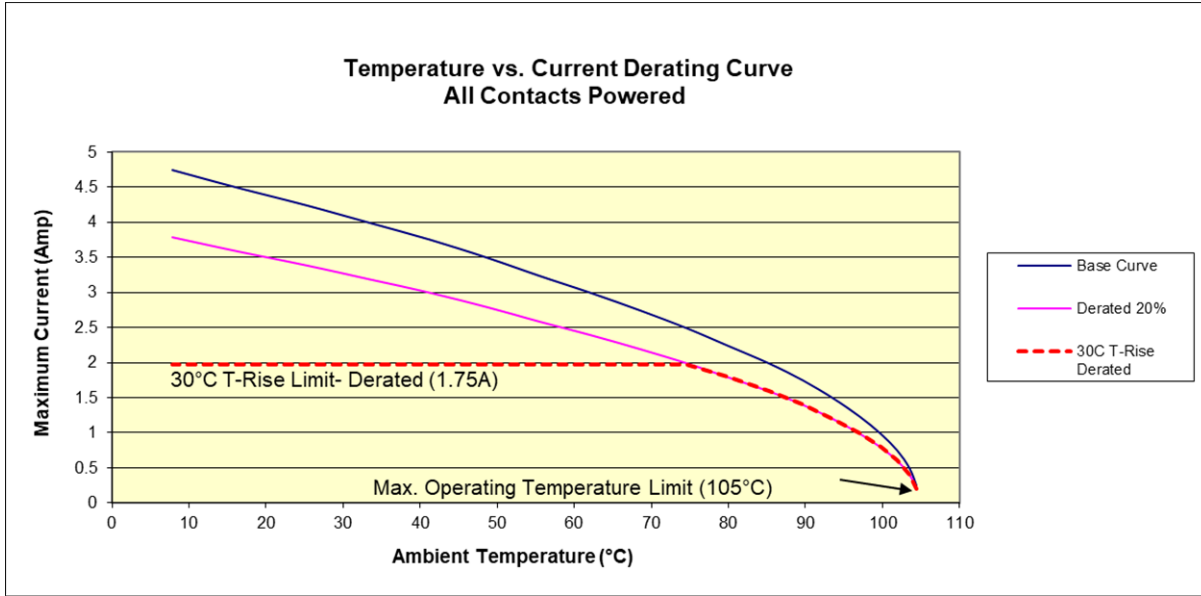
TEST FLOW

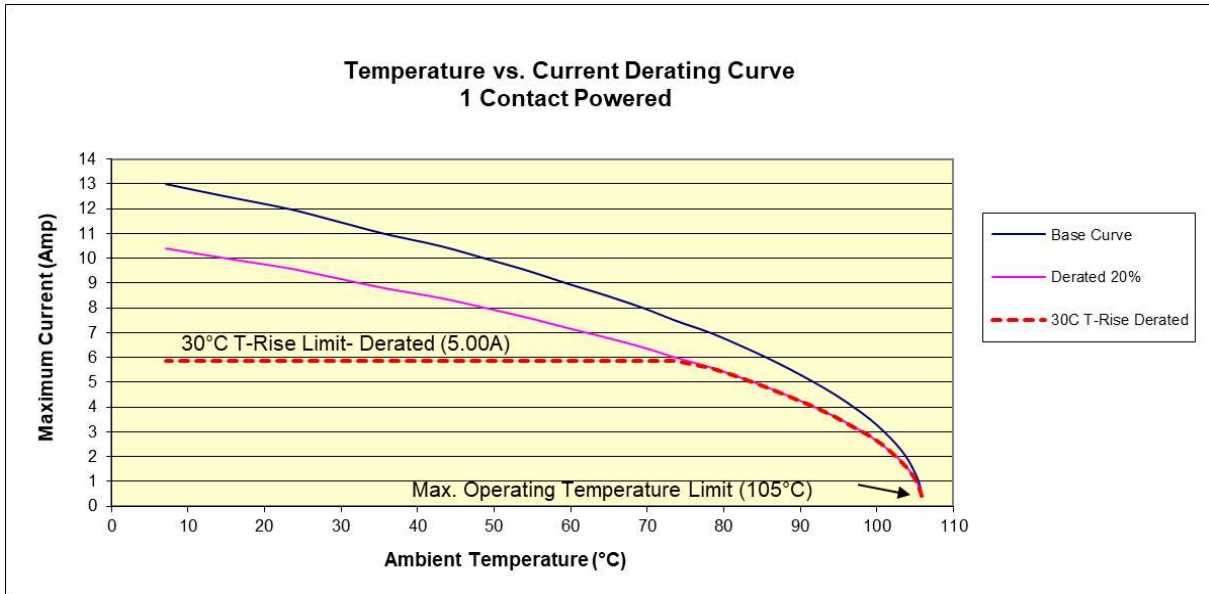
TEST	EIA 364 TP NO.	TEST GROUP & TEST SEQUENCE					
		A	B	C	D	E	F
Visual	18	0,8	0,5	0,6	0,6	0,6	0,3
LLCR	23	1,3,5,7	1,3	1,3,5	1,3,5		
Durability (Full)	13	2			2	3	
Temperature Life (Full)	17		2				
Mechanical Shock	27			2			
Vibration	28			4			
Thermal Shock	32	4					
Humidity Temperature Cycling	31	6					
Salt Spray	26				4		
Dielectric Withstanding Voltage	20					1,4	2
Dielectric Breakdown Voltage	20					7	
Insulation Resistance	21					2,5	
Contact Wiper Normal Force	4		4				
Temperature Rise vs. Current	70						1

9.2 Independent Tests

1. Contact Retention
2. (Metal Coating) Adhesion
3. Moisture Sensitivity Level
4. Header Solderability

10. Figures
10.1 Current Rating





11. Agency Listings

11.1 Underwriters Laboratories (UL)

Agency	File No.
UL	E68080
CUL	E68080

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.

Regulatory: For regulatory information about this product, visit 3M.com/regs

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