3M™ Wiremount Socket
Series CHG

Product Specification 78-5102-0010-0

Released: 1-11-11

3M Electronic Solutions Division
Interconnect Products
6801 River Place Blvd.
Austin, TX 78726-9000
www.3Mconnector.com

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Steven A. Neu: Approved: 1-11-11
Sandra J. Stuckert: Approved 1-11-11
Jim W. Wessman: Approved 1-11-11

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1. Scope

This document summarizes test methods, test conditions and product performance requirements for the 3M Wiremount Socket CHG 2010-001010 with 30 µ" gold plating. 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

78-5100-0189	TS-0189, Technical Data Sheet for 3M™ Wiremount Socket CHG Series
78-5100-0191	TS-0191, Technical Data Sheet for 3M™ Wiremount Socket Two-Row CHG Series
78-5100-0192	TS-0192, Technical Data Sheet for 3M™ Wiremount Socket Two-Row Polarized CHG Series
34-7021-1570	3739-CHGA, Instructions for Notched Flat Cable Assembly
3624-1 or 3624-1	3M™ Assembly Heads 3624-1 and 3624-2, 3M™ Manual Pistol Grip 3586-12, Instructions for the assembly of 3M™ Wiremount Socket Connector CHG .100" to discrete wire
34-7201-1524-6	3M™ Bench Pneumatic Activator 3850, Instructions for Discrete Wire Assembly
34-7041-5905-1	3M™ CHG Terminator Model 1100A Operating Instructions
78-8125-3751-8	3M™ CHG Terminator Model 1100B Operating Instructions
78-8122-0522-3	3M™ CHG Terminator Model 1100B Installation Instructions

3. Performance and Test Description

Unless otherwise specified, all tests shall be performed on CHG sockets mated to 3M part numbers CHY-2020-001A10-HKH or CHY-2020-001A10-HKR using tinned; 22, 24, 26, and 28 AWG; solid and stranded wire 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: 1000 VAC_{RMS} at sea level

Temperature: -55°C to +105°C

Insulation resistance: >1 x10^9Ω at 500 VDC

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

	AWG			
	22	24	26	28
All Contacts Powered	1.5	1.25	1.0	1.0
4* Contacts Powered	3.0	2.5	2.0	2.0
1 Contact Powered	4.5	3.75	3.5	3.5

*Lines are adjacent in 2x2 configuration

4.2 Materials

Socket

Insulation: Glass Filled PBT

IDC 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 Cable Accommodation

General Accommodation:

22, 24, 26, 28 AWG stranded or solid conductor; .050" pitch notched flat ribbon cable or discrete wire; PVC, FEP, or TPE insulation.

4.5 Regulatory Compliance

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

5. Test Results Summary

5.1 General

Items		Specification	Test Method
General	Visual	No defects such as deformation, blister, damage, crack, etc.	EIA-364-18A
	Low Level Contact Resistance	Max. ΔR: <10 mΩ	EIA-364-23A

5.2 Environmental

Items		Specification	Test Method
Environmental	Durability	• 50 Insertions/Withdrawals •Max. ΔR: <10 mΩ	EIA-364-09B
	Temperature Life (Thermal Aging)	• No physical abnormalitities after test •Max. ΔR: <10 mΩ	EIA-364-17A
	Salt Spray	• No physical abnormalitities after test •Max. ΔR: <10 mΩ	EIA-364-26A
	Mechanical Shock	• No physical abnormalitities after test •Max. ΔR: <10 mΩ • No electrical discontinuity > 1 μ sec	EIA-364-27A
	Sine Vibration (Low Frequency)	• No physical abnormalitities after test •Max. ΔR: <10 mΩ • No electrical discontinuity > 1 μ sec	EIA-364-28A Test Condition I
	Sine Vibration (High Frequency)	• No physical abnormalitities after test •Max. ΔR: <10 mΩ • No electrical discontinuity > 1 μ sec	EIA-364-28A Test Condition III
	Vibration	• No physical abnormalitities after test •Max. ΔR: <10 mΩ • No electrical discontinuity > 1 μ sec	EIA-364-28A Test Condition V Table II A
	Humidity	Max. ΔR: <10 mΩ	EIA-364-31A
	Thermal Shock	• No physical abnormalitities after test •Max. ΔR: <10 mΩ	EIA-364-32B
	Resistance to Solder Heat	No physical abnormalitities after test	EIA-364-56A

5.3 Mechanical

Items		Specification	Test Method
Mechanical	Contact Wiper Normal Force	150 g min.	EIA-364-04
	Mating and Unmating Forces	450 g max.	EIA-364-13A
	Contact Retention	900 g min.	EIA-364-29A

5.4 Electrical

Items		Specification			Test Method
Electrical	Dielectric Withstanding Voltage	1000 V_{rms} @ Sea Level			EIA-364-20A
	Insulation Resistance	1 x 10^9 @ 500 V_{dc}			EIA-364-21A
	Current Rating		1 Line	4* Lines	All Lines	EIA-364-70A, Method 2,
		22 AWG	4.5	3.0	1.5	30°C Temperature Rise Limit
		24 AWG	3.75	2.5	1.25	
		26 AWG	3.5	2.0	1.0	
		28 AWG	3.5	2.0	1.0	

*Lines are Adjacent in 2x2 configuration

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5.5 Plating

Items		Specification	Test Method
Plating	Nickel Underplating Thickness	50-150 µ"	EIA-364-48, C
	Gold Thickness	30 µ" min.	EIA-364-48, C
	Nitric Acid Vapor Test (Gold)	I Spot per Sample Lot	EIA-364-53
	Adhesion	Required	MIL-G-45204, 4.5.2

6.0 Test Sequence

6.1 Sequenced Tests **TEST FLOW**

Test	Sequence Numbers for Test Group			
	A	B	C	D
Low Level Connection Resistance (LLCR)	1,3,5,7	1,3,5	1,3,5,7	1,3
Durability (with Environmental)	2			
Temperature Life (Thermal Aging)				2
Thermal Shock			2	
Humidity	4	2	4	
Salt Spray	6	4		
Vibration			6	

6.2 Independent Tests

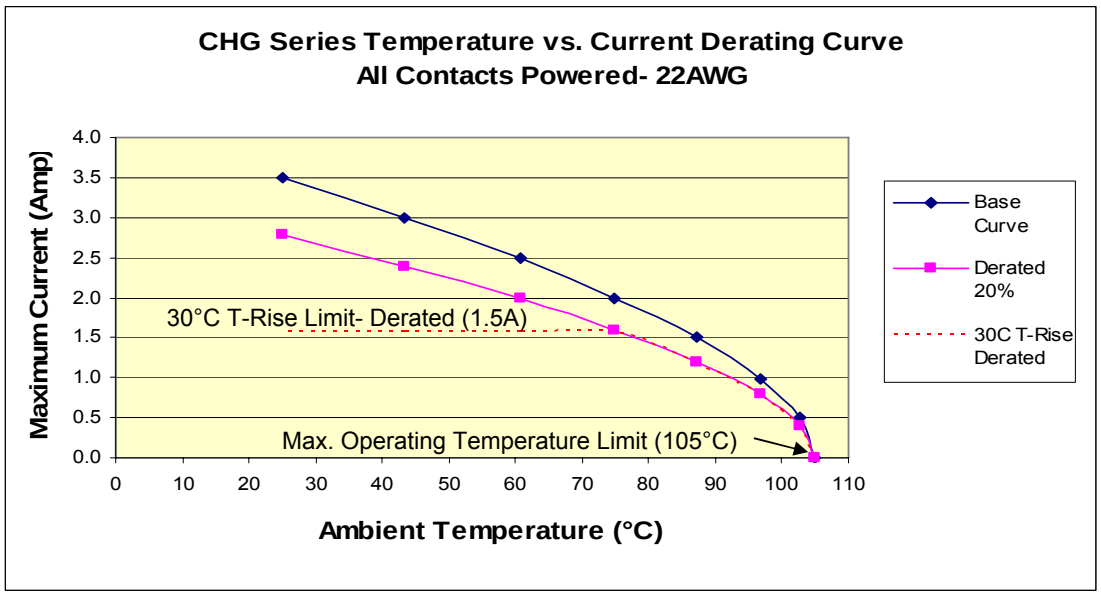
1. Plating Thicknesses
2. Dielectric Withstanding Voltage
3. Current Rating
4. Insulation Resistance

7.0 Figures

7.1 Temperature vs. Current

Tested using:

Socket Part Number: CHG-2060-01010-KEP 22, 24 AWG
CHG-2060-01010-KCP 26, 28 AWG
Header Part Number: 2560-6002-UG



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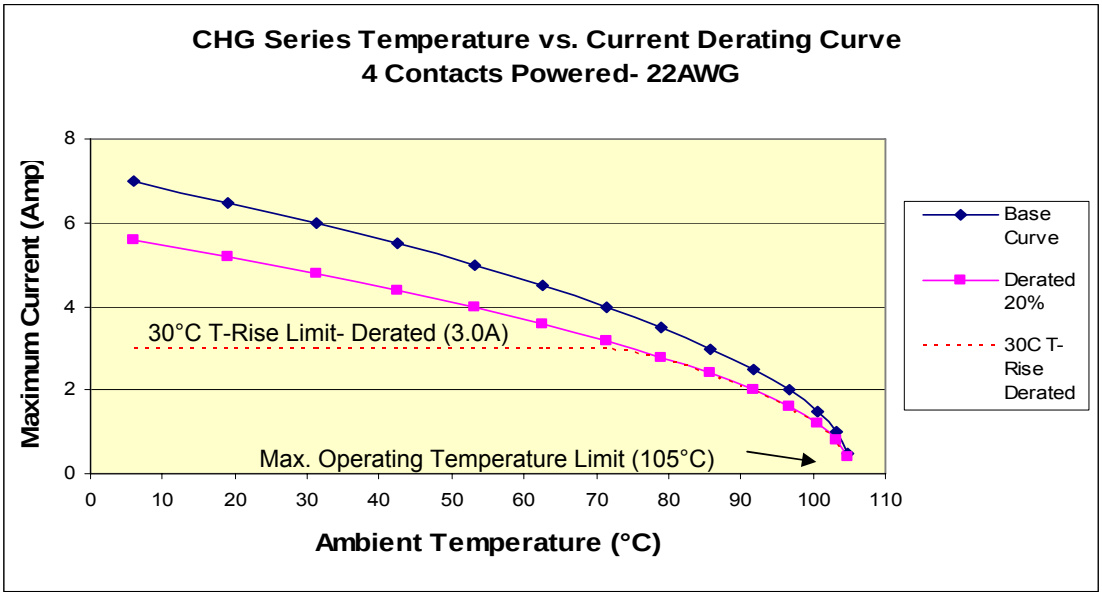

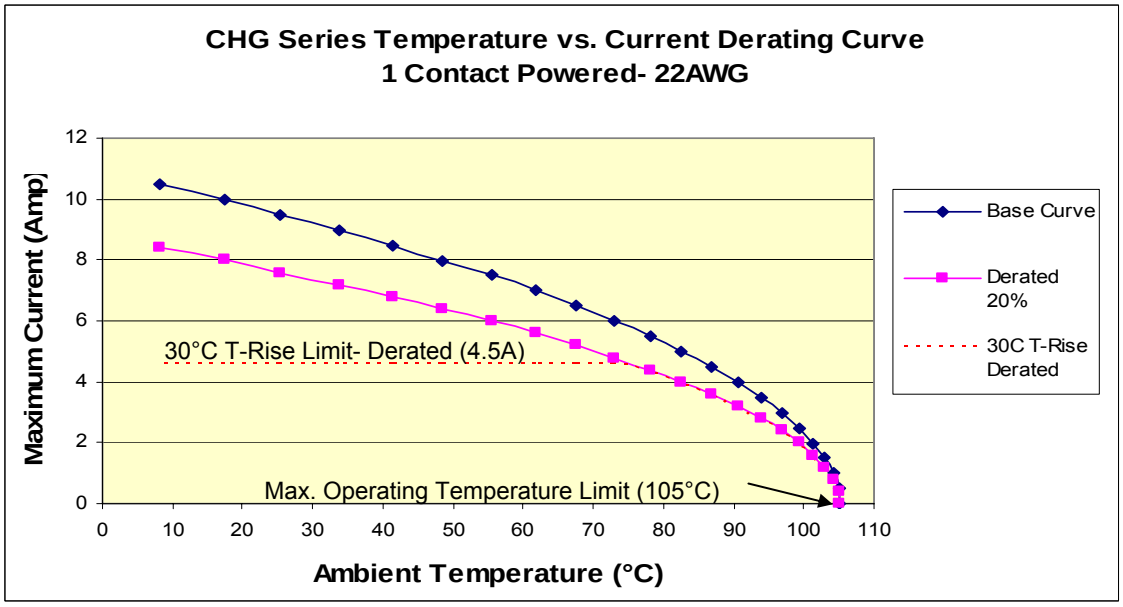

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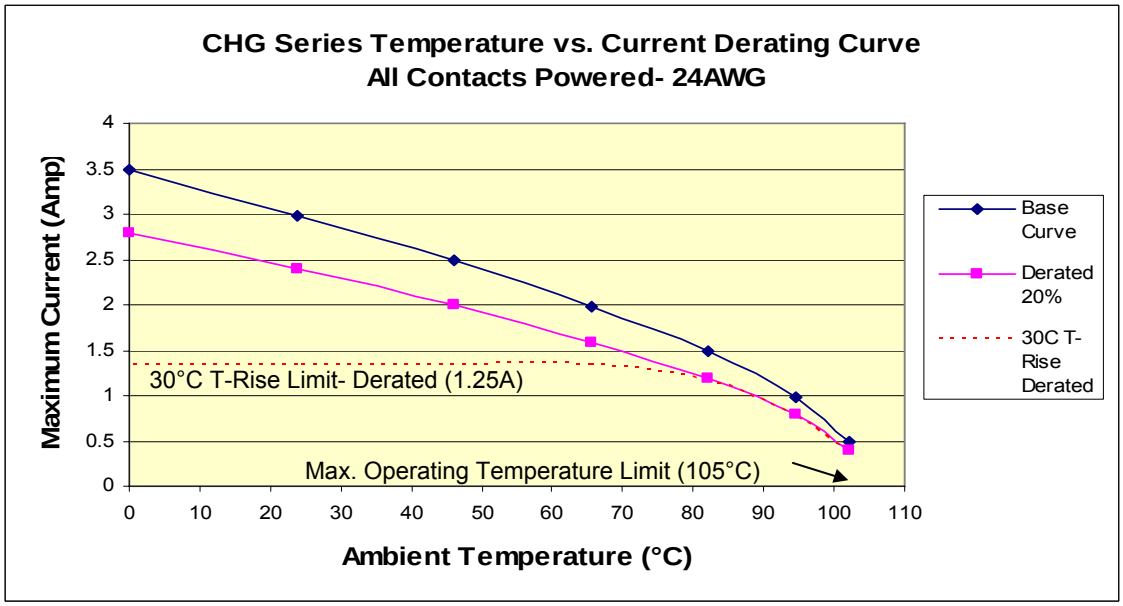

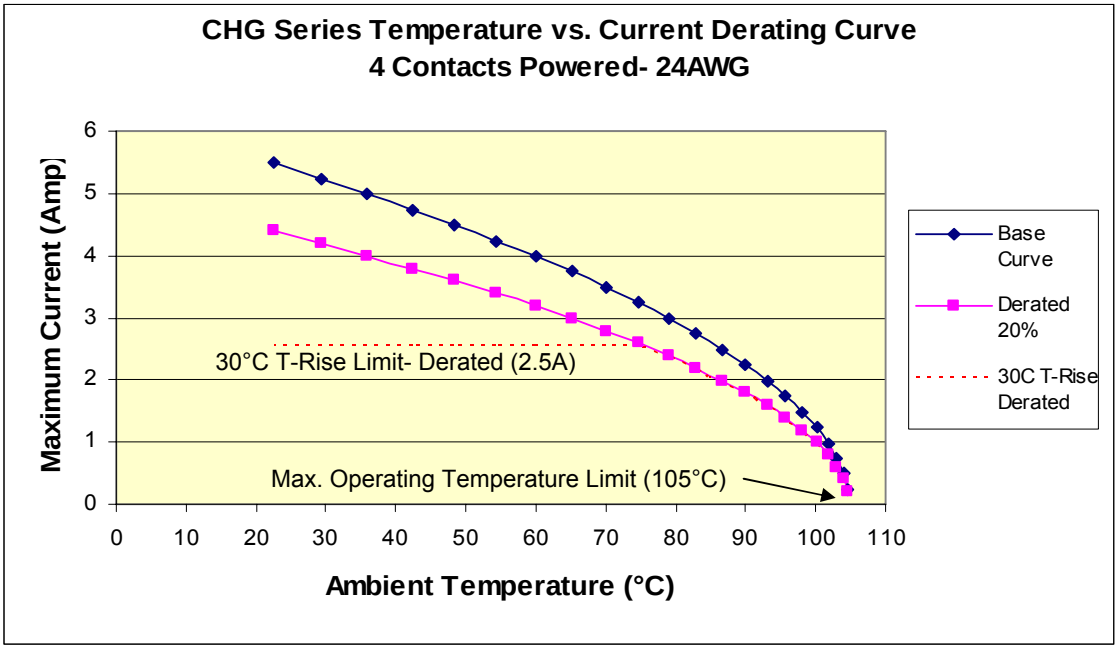

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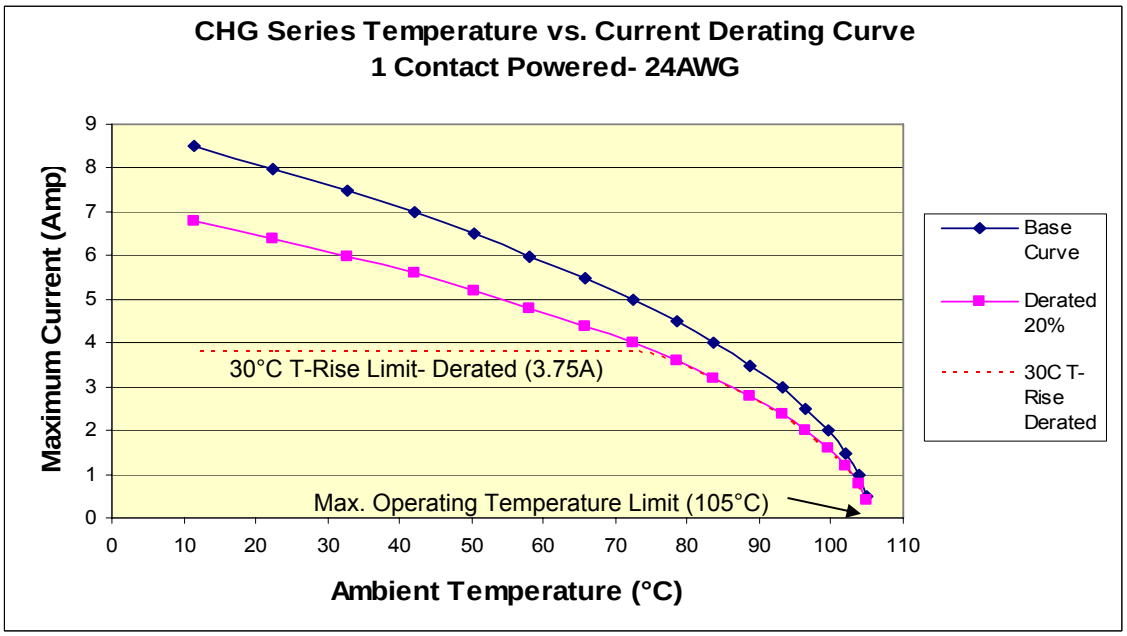

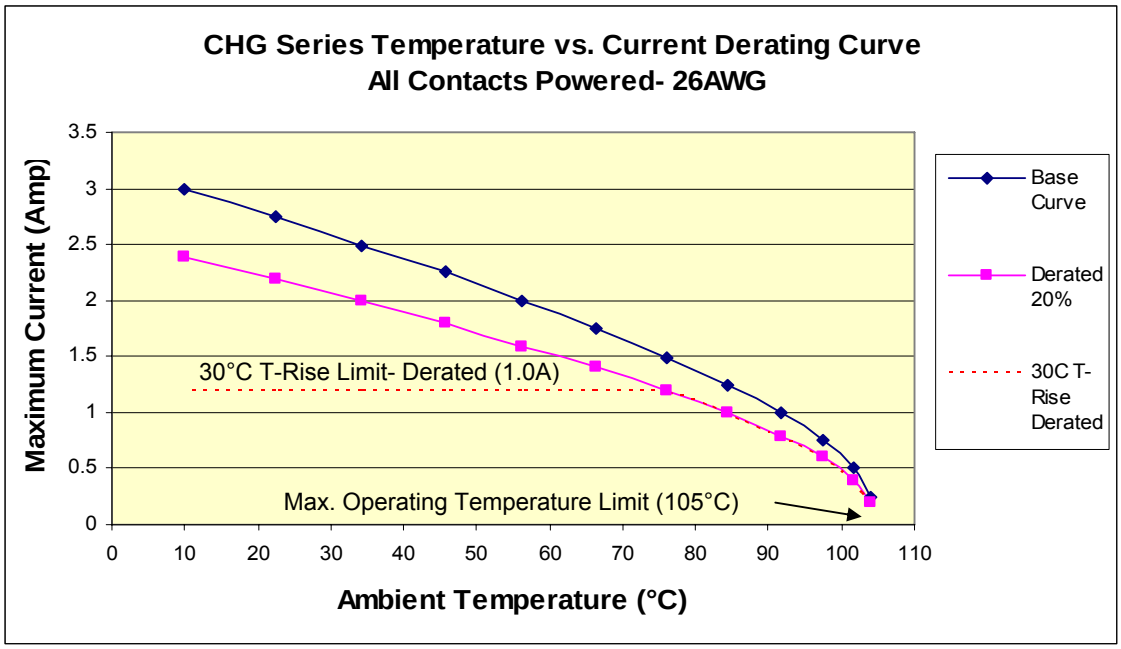

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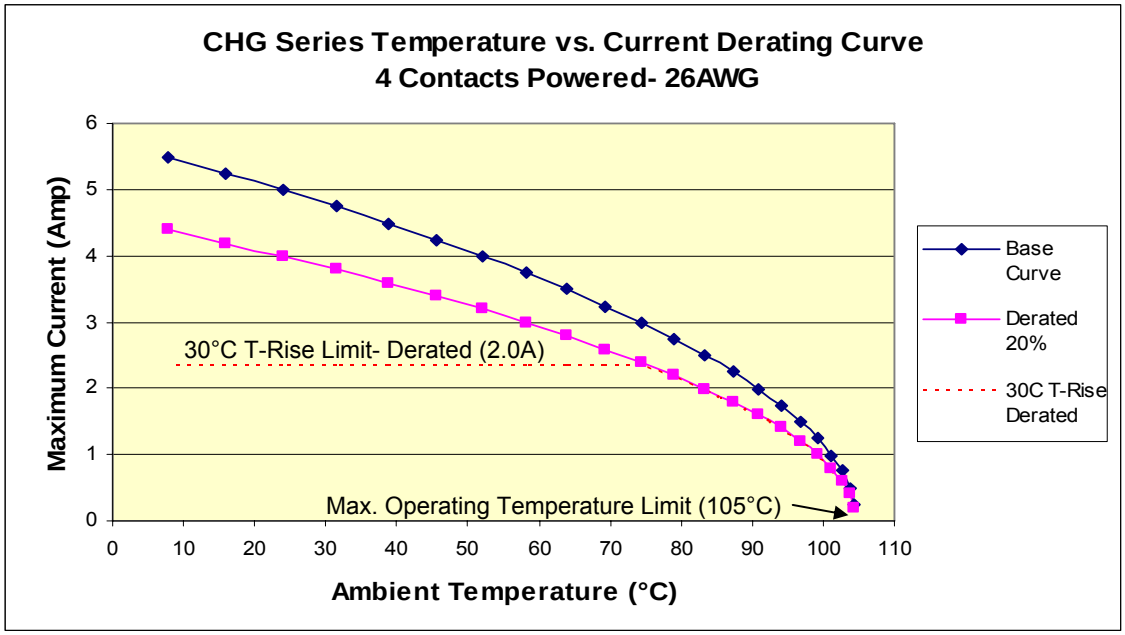

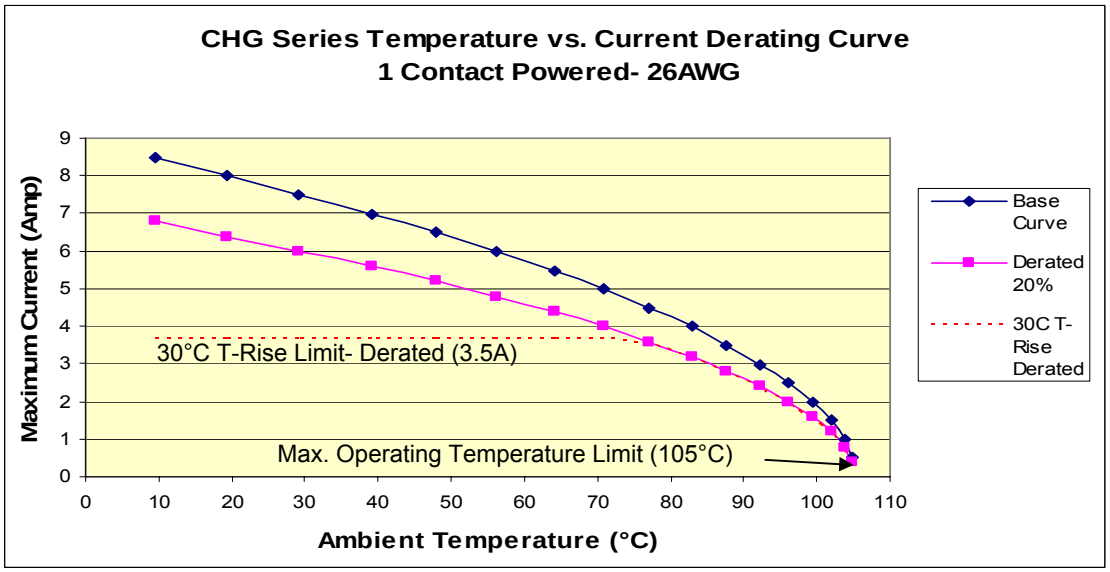

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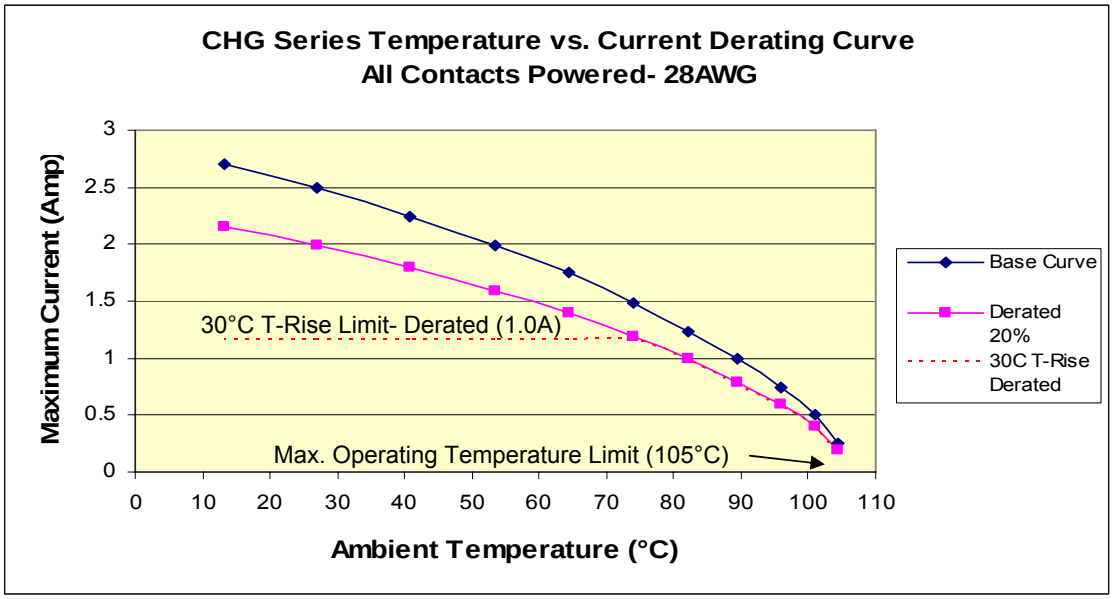

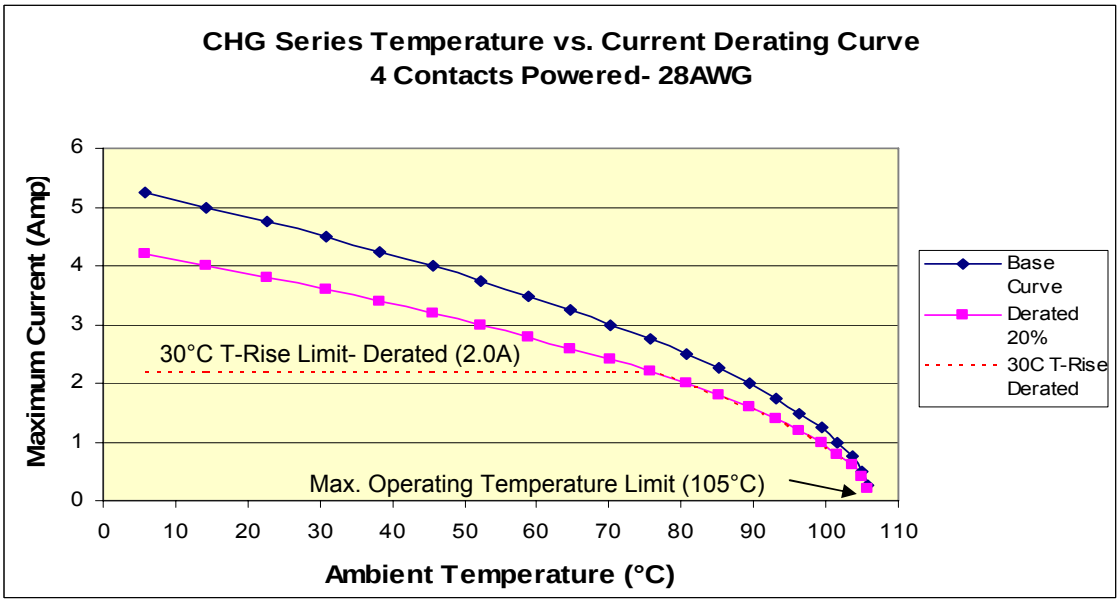

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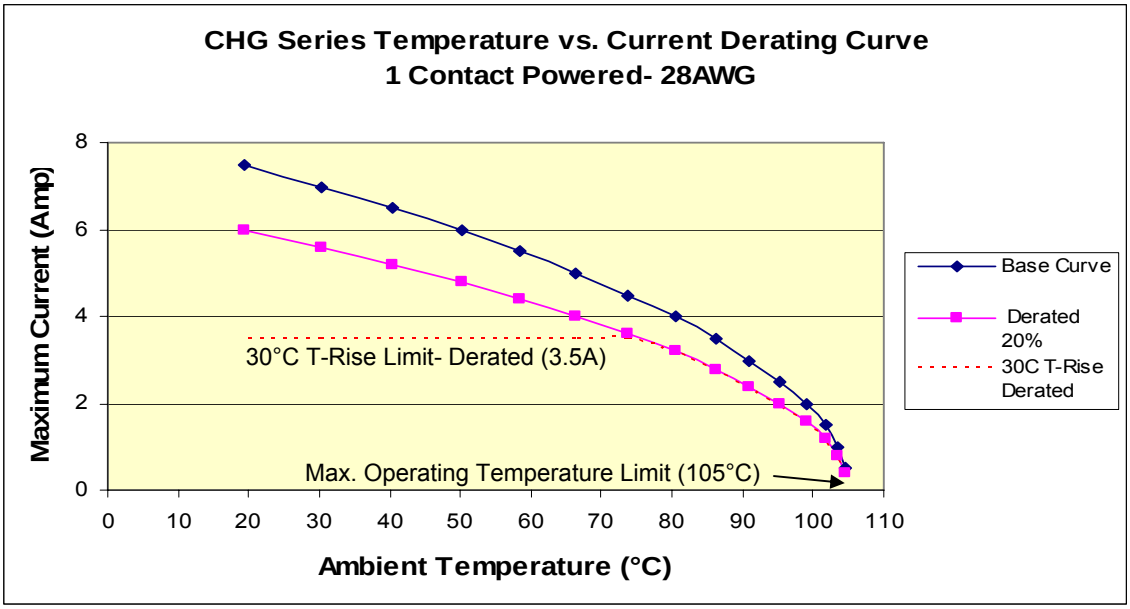

8. Agency Listings

8.1 Underwriters Laboratories (UL)

Agency	File No.
UL	E68080
CUL	E68080

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