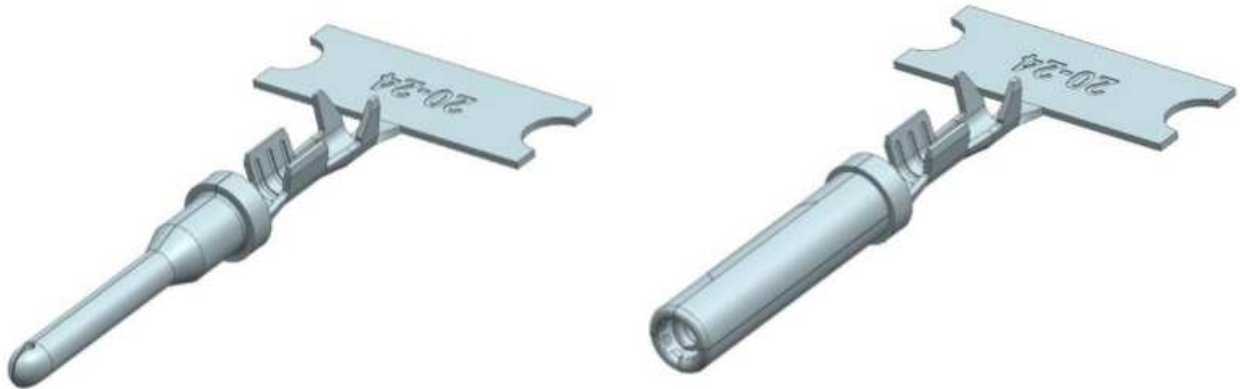


XRC 20 to 24 AWG Pin & Socket Terminals

1.0 SCOPE

This Product Specification covers the 20 to 24 AWG XRC pin and socket terminals crimped to an array of wires utilizing crimp technology.

2.0 PRODUCT DESCRIPTION



2.1 DIMENSIONS, MATERIALS, PLATINGS AND MARKINGS

All dimensions, terminal materials, plating descriptions and ID locations can be found on the applicable sales drawing.

2.2 FEATURES AND BENEFITS

High performance copper alloy

3.0 APPLICABLE DOCUMENTS AND SPECIFICATIONS

Description	Document Number
20-24 AWG XRC Pin Terminal Customer Drawing	C-2600020
20-24 AWG XRC Socket Terminal Customer Drawing	C-2600021
XRC Terminal Application Specification (Crimp)	114-160066

				PR: Justin Gu DATE:14Oct2020		TE	
				CHK: Evan Jiang DATE: 19Oct2020		Shanghai, China	
A	Initial Released	J.G	14Oct 2020	APP: Yin Ivan DATE: 19Oct2020	Document No.: 108-160112	LOC: ES	REV: A
LTR	REVISION RECORD	PR	DATE				

4.0 TE DOCUMENTS

1. 109-1: General Requirements for Testing
2. 114-160066 XRC Terminal Application Specification
3. C-2600020 XRC Pin Terminal Customer Drawing
4. C-2600021 XRC Socket Terminal Customer Drawing

5.0 RATINGS / PERFORMANCE / VALIDATION

5.1 VISUAL

ITEM	DESCRIPTION	TEST CONDITION	REQUIREMENT
5.1.1	General Appearance SAE USCAR 21, Section 4.2	Confirm the crimping operation does not affect the contact, locking, connector mating or insertion functions of the terminal	Refer to Section 4.2 of SAE USCAR 21
5.1.2	Cross Section Analysis SAE USCAR 21, Section 4.3	Cross-section analysis shall be performed on all conductor crimp applications at each crimp height setting (nominal, minimum and maximum)	Cross-section and photograph each specimen for analysis – Cross -section views of conductor crimps must comply with section 4.3.5 of SAE USCAR 21

5.2 MECHANICAL REQUIREMENTS

ITEM	DESCRIPTION	TEST CONDITION	REQUIREMENT
5.2.1	Conductor Crimp Pull-out Force	Apply an axial pullout force on the wire without insulation wings	24 AWG (0.22mm ²) = 40N
			22 AWG (0.33mm ²) = 50N
			20 AWG (0.50mm ²) = 75N

5.3 ENVIRONMENTAL REQUIREMENTS

ITEM	DESCRIPTION	TEST CONDITION	REQUIREMENT
5.3.1	Wire to crimp – Accelerated Environmental Test SAE USCAR 21, Section 4.5.2	USCAR-21: Thermal Shock – 72 cycles (30 mins at +125 °C and 30 mins at -40 °C) Temp Humidity – 4 cycles: a. 16 hours at +65±3 °C 95-98% Relative Humidity b. 2 hours at -40±3 °C c. 2 hours at +85±3 °C d. 4 hours at +23±3 °C	20 AWG Wire (0.50mm ²) Crimp resistance: R_{cf} ≤ 0.55mΩ ΔR_c (R final-R initial) ≤ 0.33mΩ
			22 AWG Wire (0.33mm ²) Crimp resistance: R_{cf} ≤ 0.55mΩ ΔR_c (R final-R initial) ≤ 0.35mΩ
			24 AWG Wire (0.22mm ²) Crimp resistance: R_{cf} ≤ 0.55mΩ ΔR_c (R final-R initial) ≤ 0.45mΩ

5.4 TERMINAL CURRENT DERATING CURVES

This test is used to determine the maximum test current at which a terminal system can operate in a room temperature (23±5 °C) environment before excessive thermal degradation and/or resistance begins to occur. Temperature Rise (Y axis) vs. Current (X axis) shall be plotted for each applicable conductor size.

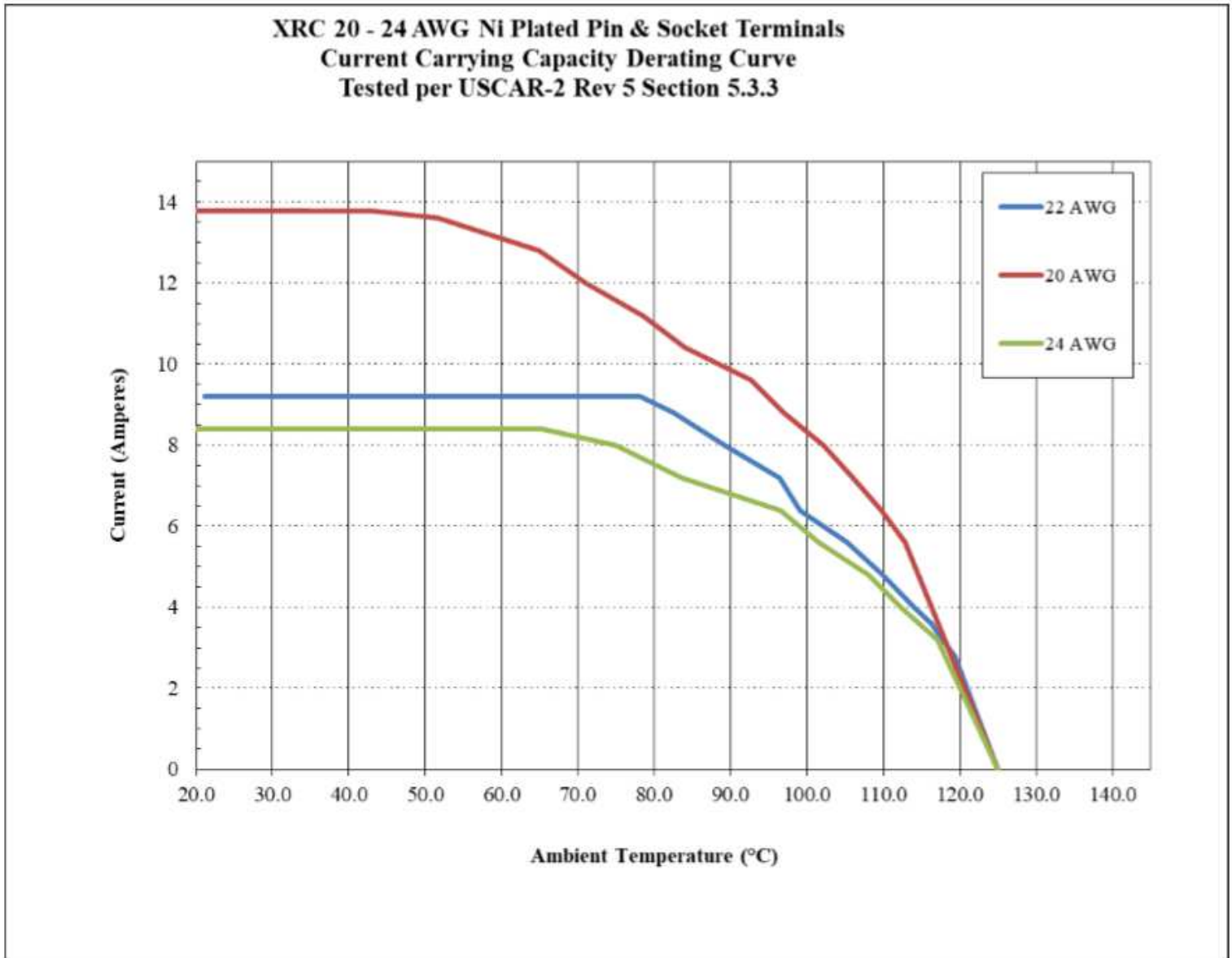


Figure 1: Current Derating Curves

CAUTION: These graphs are NOT to be used for actual terminal application in a vehicle. This test is conducted on terminals alone, thus eliminating the variation that may be introduced by variations in the heat dissipating characteristics of differing connector housing designs and sizes. This test cannot establish the Maximum Current Capability of a specific terminal application. For specific applications, several factors other than current load must be considered.

5.5 RATINGS

5.5.1 TEMPERATURE

Non-operating temperature: - 55°C to +125°C

Operating temperature: - 55°C to +125°C