1.0 SCOPE

This specification covers the 3.50 mm (0.138 inch) MX150 Unshrouded Through Hole header product line and is intended to mate with the MX150 receptacle connector series 33471 and 33472.

- Only blades have been validated to the test specifications listed in Section 5.0
- Blades do not conform to USCAR Terminal Blade design standard
- Customer is required to validate at both interface and module level
- When mounting or handling the unshrouded header, refrain from any process that can contaminate the surface of the blades, this will critically affect performance

2.0 PRODUCT DESCRIPTION

2.1 PRODUCT NAME AND SERIES NUMBER(S)

A. Header Assembly Through Hole
   I. Dual & Single Row Vertical Headers: 75757
   II. Dual Row, Right Angle: 75900

2.2 DIMENSIONS, MATERIALS, PLATINGS AND MARKINGS

A. Header Housing - 30% glass filled LCP

B. Terminal - Brass Alloy C26000
   I. Plating Option 1 - Matte Tin 2.5µ MIN overall with 1.25 µ MIN Nickel under plate overall.

   II. Plating Option 2 - Select Gold 0.05µ MIN in contact area, Select Matte Tin 2.5 µ MIN in PC tail area, 1.25 µ MIN Nickel under plate overall.**(Not qualified per USCAR-2 Rev.6)**

   III. Plating Option 3 - Select Gold 0.50µ MIN in contact area, Select Matte Tin 2.5 µ MIN in PC tail area, 1.25 µ MIN Nickel under plate overall **(Not qualified per USCAR-2 Rev.6)**

   IV. Plating Option 4 - Matte Tin 1.5µ MIN overall with 1.25µ MIN Nickel under plate overall.

   V. Blade Geometry does not conform to USCAR specifications.

2.2.1 Recommended PCB Thickness 0.062 in. / (1.57mm)

2.3 SAFETY AGENCY APPROVALS

UL File Number	TBD
CSA File Number	TBD
TUV License Number	TBD

3.0 APPLICABLE DOCUMENTS AND SPECIFICATIONS

3.1 SPECIFICATIONS

All documents referenced shall be of the latest revision. The order of precedence detailing requirements of this specification is as follows:

1. Product Drawings 2. This Specification

3.2 REFERENCE DOCUMENTS

Molex Application Specification AS-75757-210, MX150 Header Shroud Details

4.0 RATINGS

4.1 VOLTAGE

Operating Voltage: 14 Volts DC Maximum

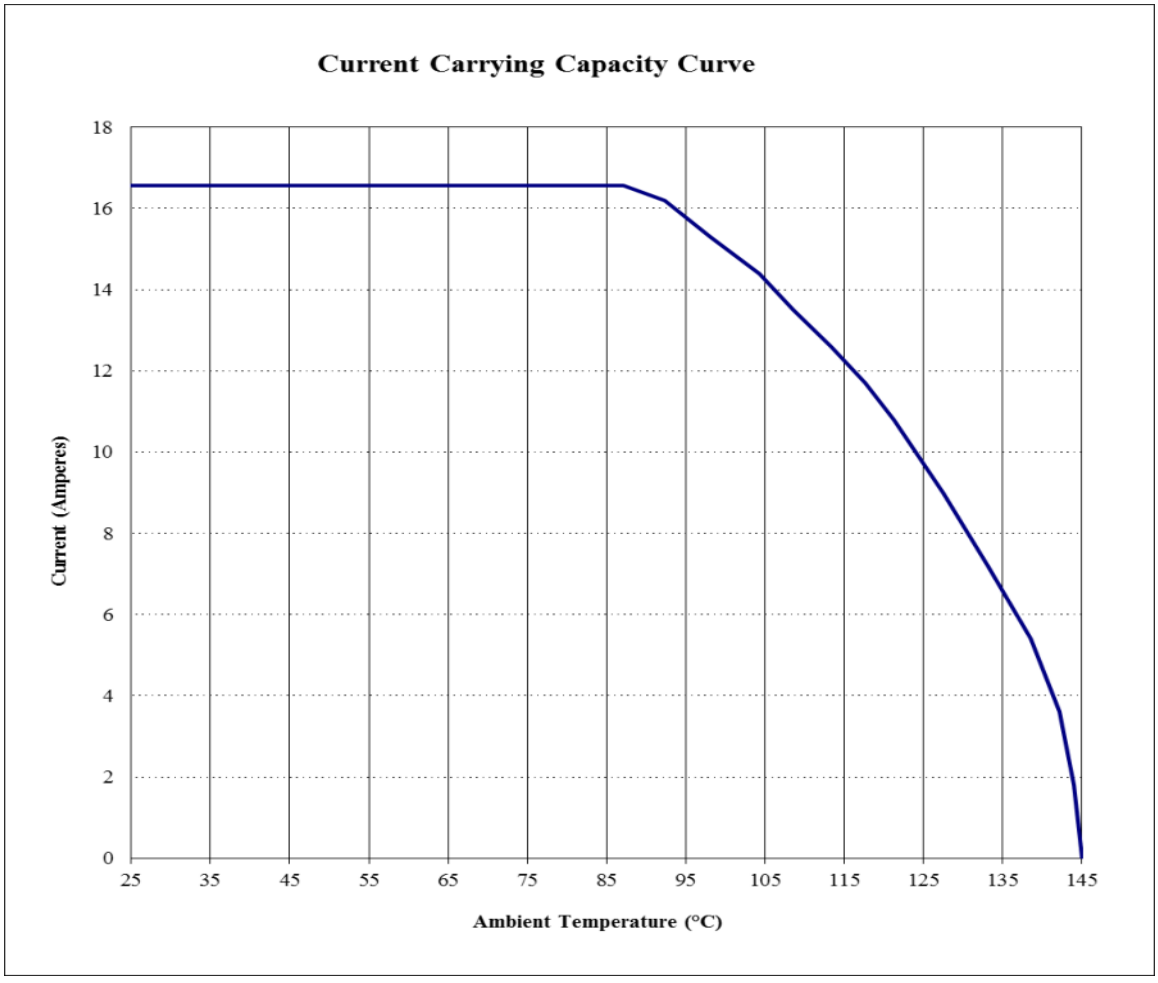
4.2 VOLTAGE - ISOLATION RESISTANCE

100MΩ Minimum when 500 Volts DC between adjacent terminals and terminals to ground.

4.3 CURRENT

Ratings shown below represent maximum current carrying capacity of a single terminal crimped to 14AWG wire in open air based on a 55 °C maximum temperature rise limit over ambient. Note that current is dependent on connector size, ambient temperature, wire gauge, and other related factors. Actual current rating is application dependent and should be evaluated for each use.

4.3.1 DERATING CURVE – USCAR-2 REV 6



4.4 TEMPERATURE

Operating: - 40 Cº to + 125 Cº
Non-Operating: - 40 Cº to + 125 Cº

5.0 PERFORMANCE

5.1 ELECTRICAL REQUIREMENTS

ITEM	DESCRIPTION	TEST CONDITION	REQUIREMENT
a	**Contact Resistance (Low Level)**	Mate Header with MX150 Receptacle: limiting the open circuit voltage of **20** mV and a maximum current of **100** mA.	**10 milliohms** MAXIMUM (initial)
b	**Contact Resistance @ Rated Current**	Mate Header with MX150 Receptacle: Apply a current corresponds to maximum rated current	**10 milliohms** MAXIMUM
c	**Insulation Resistance**	Apply a voltage of **500** VDC between adjacent terminals and between terminals to ground.	**100 Megohms** MINIMUMU
d	**Temperature Rise (via Current Cycling)**	Mate Header with MX150 Receptacle: measure the temperature rise at the rated current after: **1008** hours of bench top testing (**45** minutes ON and **15** minutes OFF per hour).	Temperature rise over Ambient: **+55** Cº MAXIMUM

5.2 MECHANICAL REQUIREMENTS

ITEM	DESCRIPTION	TEST CONDITION	REQUIREMENT
a	**Terminal Insertion and Extraction Forces**	Insert and withdraw terminal (male to female) at a rate of **50 ± 6** mm (**2 ± ¼** inch) per minute.	**6.5** Newtons MAXIMUM
b	**Connector Mate and Unmated Forces**	Mate and unmate connector (male to female) at a rate of **50 ± 6** mm (**2 ± ¼** inch) per minute.	75 Newtons MAXIMUM 110 Newtons MAXIMUM (20CKT) 90 Newtons MAXIMUM (16CKT)
c	**Terminal Retention Force (in Header Housing)**	Axial push out force on the terminal from the housing at a rate of **50 ± 6** mm (**2 ± ¼** inch) per minute.	**30** Newtons MAXIMUM
d	**Durability**	USCAR-2 Revision 6 Mate connectors for tin **11** Cycles maximum rate.	**10** milliohms MAXIMUM (change from initial) No evidence of physical Damage

5.3 ENVIRONMENTAL REQUIREMENTS

ITEM	DESCRIPTION	TEST CONDITION	REQUIREMENT
a	**Solderability**	Per SMES-152	Solder coverage: **95% MINIMUM** (per SMES-152)
b	**Solder Resistance**	Dip Header terminal tails in solder; Duration: 5 ± 0.5 seconds Temperature : 245 ± 5°C	Visual: No damage to insulator material
c	**Thermal Shock (Electrical)**	Mate connectors per durability; expose to **100** cycles of: Temperature C° Duration (Minutes) -40 +0/-3 30 +125 +3/-0 30	10 milliohms MAXIMUM & Discontinuity < 1 microsecond
d	**Temperature Humidity**	Mate connectors per durability and expose connector system to forty 8-hour cycles of combined heating and humidity exposure –40 ºC and 125 ºC at 0% to 90% RH	10 milliohms MAXIMUM & Isolation Resistance of 100 Meg ohms @ 500 VDC MINIMUM
e	**High Temperature Exposure**	Mate connectors per durability and expose to 1008 hours at 125 ± 2°C	10 milliohms MAXIMUM & Isolation Resistance of 100 Meg ohms @ 500 VDC MINIMUM

6.0 PACKAGING

Parts shall be packaged to protect against damage during handling, transit and storage.
Packaging Specification: PK-36518-340

7.0 GAGES AND FIXTURES

8.0 OTHER INFORMATION