



# HARWIN

## Component Specification

**C05207**

Kona  
KA1 Series 8.5mm Pitch High Power Connectors  
May 2023

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## 1. DESCRIPTION OF CONNECTOR SYSTEM

The Kona range consists of male and female high-reliability mating connectors, based on an 8.5mm pitch single row format – part numbers start with the series code KA1. These connectors are designed for higher power applications with a rugged or durable requirement. Each contact on both male and female connectors is individually shrouded and recessed. Polarization and contact 1 identification marks are also incorporated into the housing designs.

The male contact is designed to provide the spring force inside the female contact for positive engagement. Both contacts are plated with a hard acid gold finish at 98% purity for high performance and long life. Cable contacts are solder style (compatible with 8AWG cable) and are removable & replaceable inside housings.

Connector housings are fitted with stainless steel screw-lock fixings, capable of mate-before-lock for easy connection and faster fixing. Options include thumbscrews for manual assembly, board or panel mount studs for connector retention, and reverse fix style for floating screw on the male. Metal backshells are available to provide mechanical, RF and EMC protection.

For detailed test results on the below specifications, please see **Test Summary Report HT076XX** (latest revision).

## 2. RATINGS

### 2.1. Materials

Contact .....	Beryllium Copper, Gold over Nickel
Contact latching collar .....	Cupro-Nickel, 100% Tin over Nickel
Housing & Cap .....	40% Glass-Filled Thermoplastic, UL94V-0
Screw fixings .....	Stainless Steel
Potting Compound .....	Stycast 2651MM with Catalyst 9
Backshell .....	Aluminium 6061-T6, High Phosphorus Nickel finish

### 2.2. Electrical Characteristics

Current Rating (EIA-364-70A: 1998) .....	60A max per contact
Dielectric Withstanding Voltage (EIA-364-20C, Method B):	
Sea Level .....	3,000V AC for 1 minute
Altitude 70,000ft .....	500V AC for 1 minute
Voltage Rating .....	1,500V DC or AC peak
Contact Resistance (EIA-364-23B, pre- and post-conditioning) .....	2mΩ max
Insulation Resistance (EIA-364-21C) .....	10GΩ min at 1,000V
Creepage Distance (see Appendix 3):	
Male PCB Vertical .....	5.5mm
Female & Male Cable .....	17.54mm
Clearance Distance (see Appendix 3):	
Male PCB Vertical .....	3.64mm
Female & Male Cable .....	2.7mm

### 2.3. Environmental Characteristics

Operating Temperature Range .....	-65°C to +150°C
Vibration (EIA-364-28D, Condition IV) ♦ .....	10Hz to 2,000Hz, 1.52mm pk-pk displacement or 20gn pk (whichever is less), 198m/s <sup>2</sup> (20G), 12 cycles per axis, 20 minutes per cycle
Mechanical Shock (EIA-364-27B, Condition C) ♦ .....	981m/s <sup>2</sup> (100G) for 6ms in all axes
♦ <i>It is recommended that back-potting compound is applied to cable assemblies.</i>	
Thermal Shock (EIA-364-32C, Condition IV) .....	-65°C to +150°C, 10 cycles, 30 mins each extreme
Temperature Life (EIA-364-17B, Method A) .....	+150°C for 1,000 hours
Humidity (EIA-364-31B, Condition A) .....	90-95% RH at +40°C, 96 hours
Salt Spray (EIA-364-26B) .....	24 hours at +35°C, concentration 5%



## 2.4. Mechanical Characteristics

Durability (EIA-364-09C).....	250 operations
Insertion Force (per contact EIA-364-13C *):	
Initial.....	50N max
Post Conditioning.....	70N max
Withdrawal Force (per contact EIA-364-13C *).....	3N min
<i>* per contact when fully assembled connector is being mated and un-mated.</i>	
Contact Retention Force (EIA-364-29C).....	35N min per contact
Screw-lock Torque .....	22-25cmN

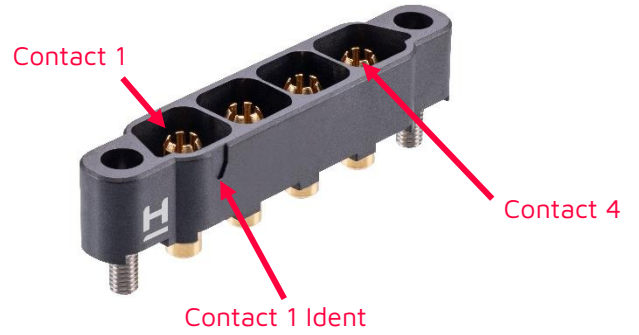


**APPENDIX 1 – CONTACT NUMBERING**

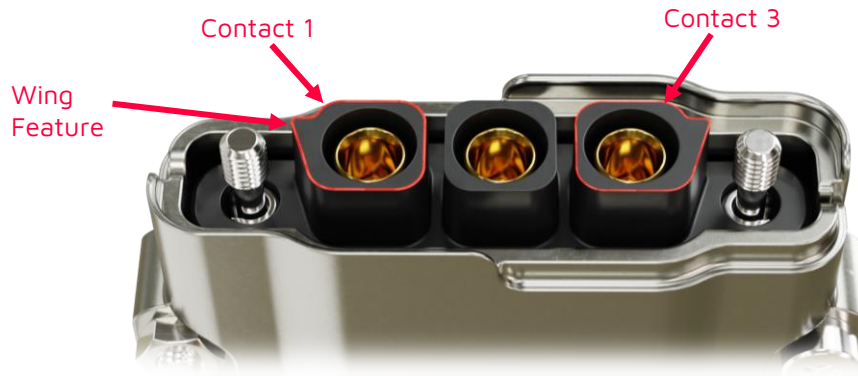
Female Connector



Male Connector



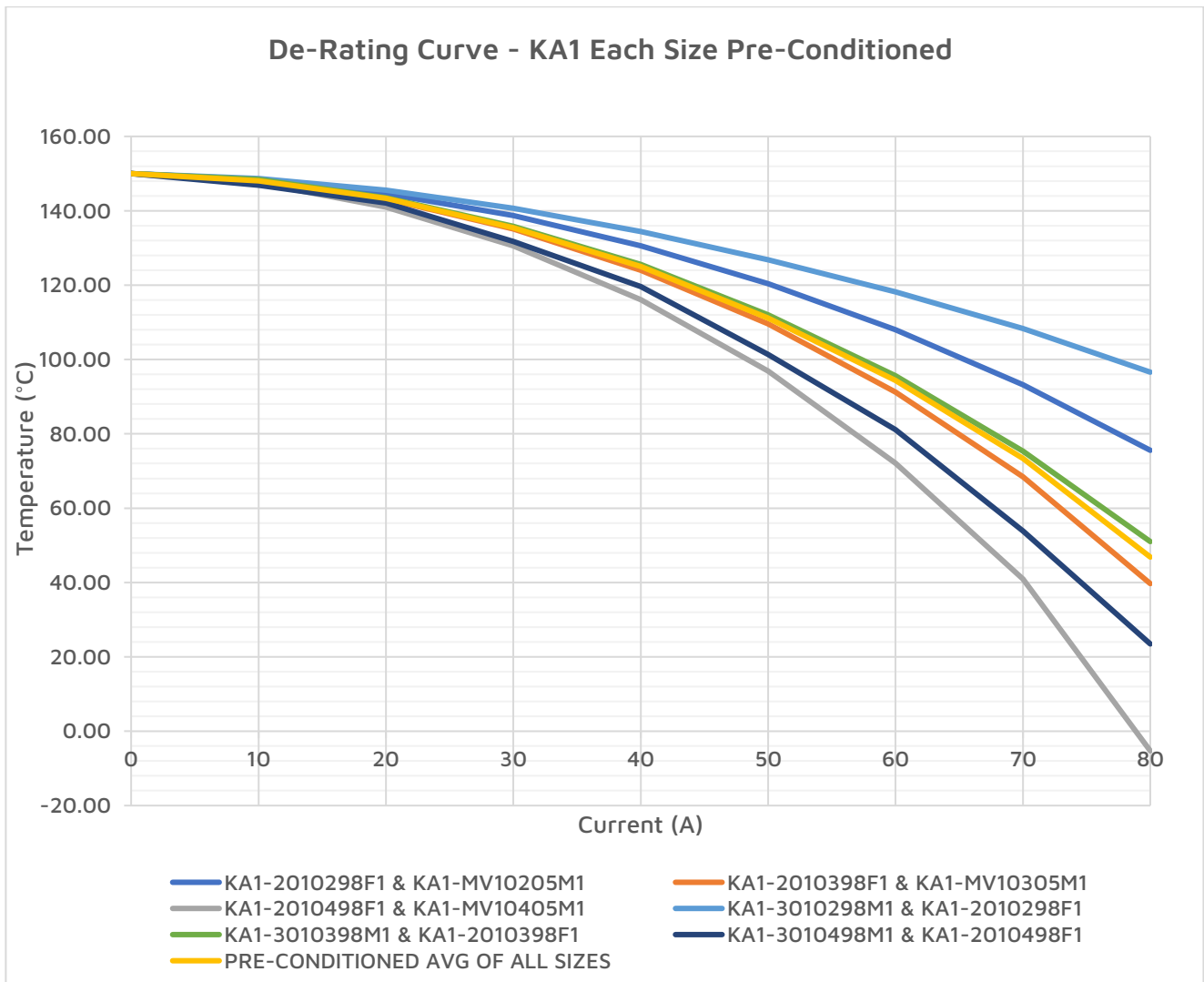
Female Shielded Connector



Male Shielded Connector

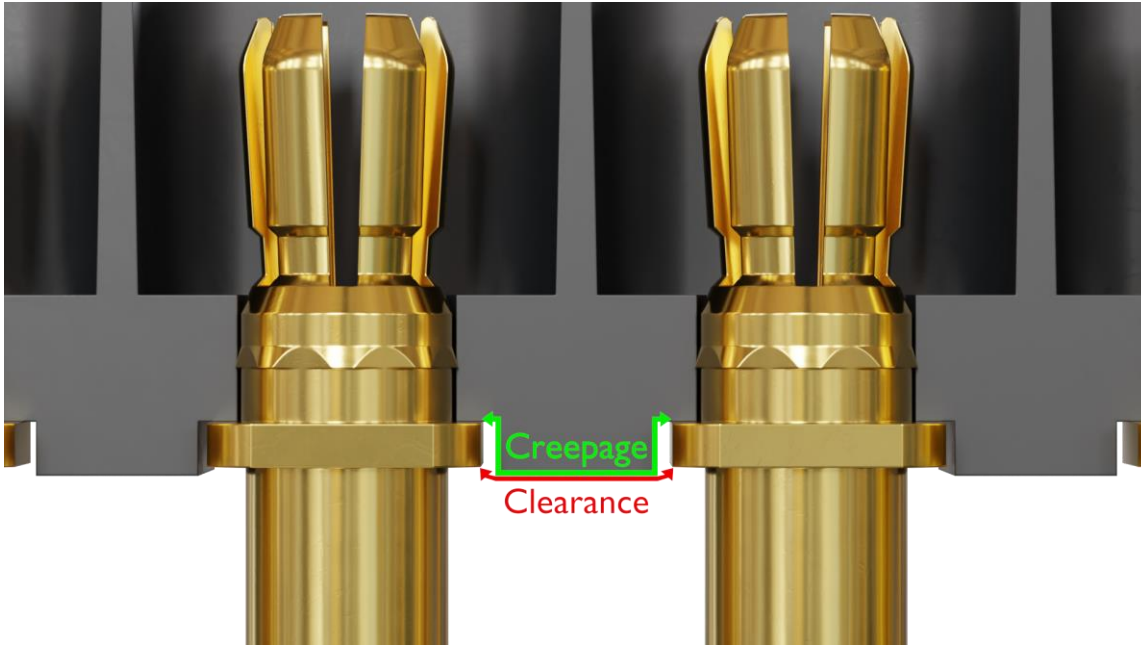


**APPENDIX 2 - DE-RATING GRAPH**



**APPENDIX 3 – CREEPAGE AND CLEARANCE LOCATIONS**

Male Vertical PCB Throughboard:



Male & Female Cable:

