



# HARWIN

## Component Specification

**C05402**

Archer .5  
M58 Series 0.5mm Pitch Connectors  
November 2022

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## 1. DESCRIPTION OF CONNECTOR SYSTEM

The Archer .5 range consists of male and female connectors on 0.5mm pitch in double row layouts. Part numbers start with the series code M58. These connectors are designed for low profile, high density, mezzanine board-to-board applications for data transfer. Polarization features on the connector housings and fully shrouded, recessed contacts on the female connectors protect against incorrect mating of the connectors.

The male contacts are a blade design and the female contacts are sprung to ensure secure connections with minimal contact wipe.

Connectors feature SMT terminations, and are supplied in tape and reel packaging ready for high volume automated assembly. The contact area is gold plated for durability and conductivity, and the terminations are tin plated for improved surface mount soldering.

## 2. RATINGS

### 2.1. Materials

Contact .....	Phosphor Bronze, Gold flash over Nickel on contact area, 100% Tin over Nickel on terminations
Housing .....	40% Glass-Filled Thermoplastic, Halogen free, UL94V-0

### 2.2. Electrical Characteristics

Current Rating (EIA-364-70A: 1998) .....	0.5A max per contact
Dielectric Withstanding Voltage (EIA-364-20, 1mA max) .....	150V AC for 1 minute
Voltage Rating .....	100V DC or AC peak
Contact Resistance (EIA-364-23, 10mA max):	
Pre-conditioned .....	60m $\Omega$ max
Post Conditioning .....	80m $\Omega$ max
Insulation Resistance (EIA-364-21C) .....	1,000M $\Omega$ min at 150V

### 2.3. Environmental Characteristics

Operating Temperature Range .....	-55°C to +85°C
Vibration (EIA-364-28 Condition I) .....	10Hz to 55Hz, 1.5mm pk-pk displacement, 2 hours per axis
Mechanical Shock (EIA-364-27 Condition A) .....	490m/s <sup>2</sup> (50G) in all axes with 1 $\mu$ sec max discontinuity
Thermal Shock (using methodology of EIA-364-32 Condition I) .....	-55°C to +85°C, 5 cycles, 30 mins each extreme
Temperature Life .....	+85°C for 96 hours, -55°C for 96 hours
Humidity (EIA-364-31B Condition A Method II) .....	90-95% RH at +40°C for 96 hours
Salt Spray (in general accordance with EIA-364-26) .....	24 hours at +35°C, concentration 5%

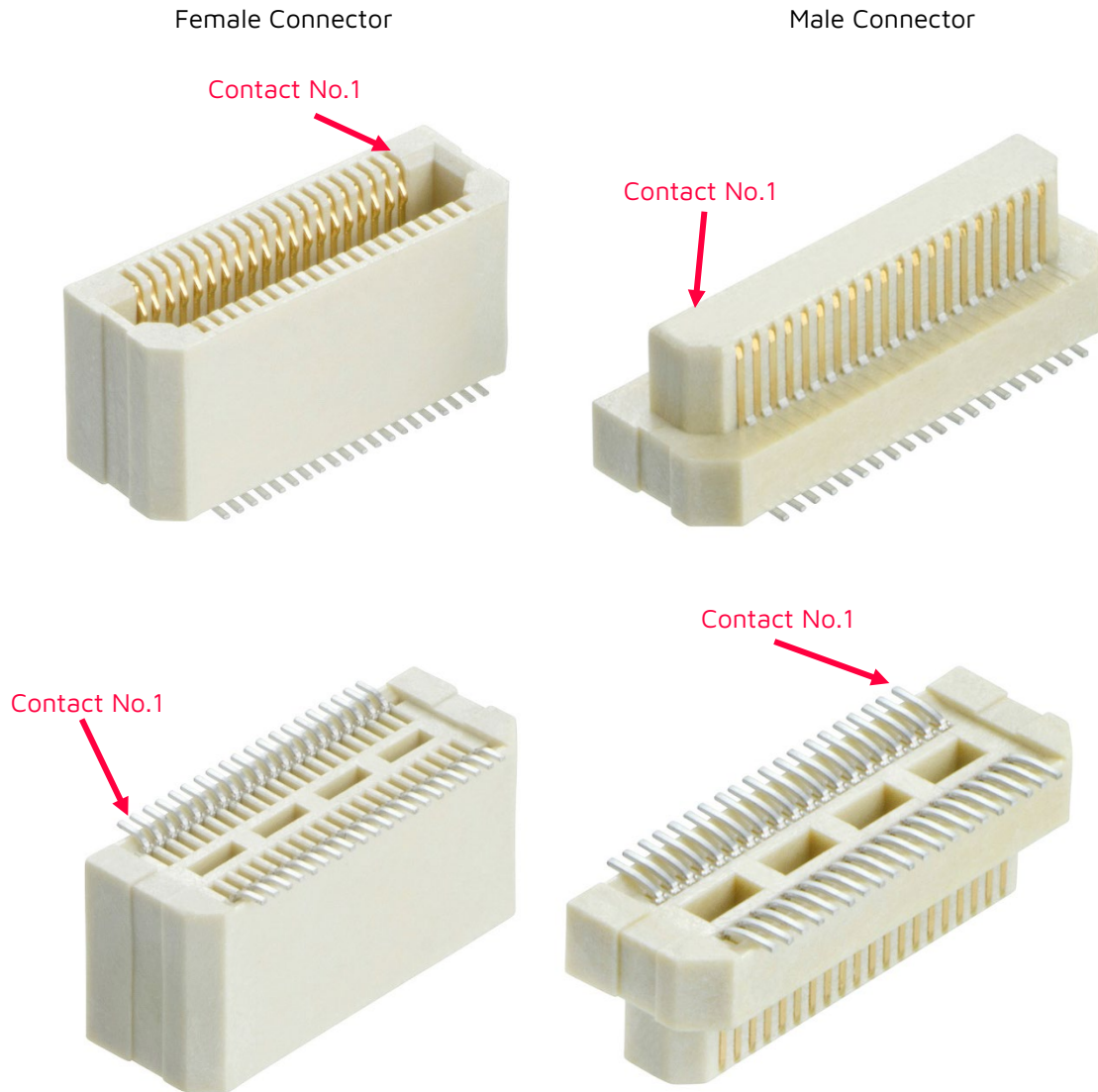
### 2.4. Mechanical Characteristics

Durability (EIA-364-09C) .....	30 operations
Insertion Force (initial, per contact EIA-364-13C *) .....	1.0N max
Withdrawal Force (per contact EIA-364-13C *) .....	0.1N min

*\* per contact when fully assembled connector is being mated and un-mated.*

**APPENDIX 1 – CONTACT NUMBERING**

Contact numbering is used to confirm correct placement within the Tape & Reel packaging – no further numbering method is established for the rest of the contacts.



**APPENDIX 2 – SIGNAL INTEGRITY RESULTS**

Connectors signal integrity properties were tested to determine high speed performance. The results shown below are a summary of key findings. For full details see Test Report Summary HT084XX (latest issue):

Insertion Loss (12GHz test) .....	-1.2dB at 8GHz
Return Loss (12GHz test) .....	-15dB at 8GHz
Impedance (35ps rise time test) .....	73.5-99.3Ω at 35ps
Crosstalk (12GHz test) .....	-35dB up to 12GHz (NEXT)