

HARWIN

ARCHER .8 (M58 SERIES): 0.8mm PITCH CONNECTORS



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1. DESCRIPTION OF CONNECTOR SYSTEM

The Archer .8 range consists of male and female connectors on 0.8mm pitch in a double row layout. Part numbers start with the series code M58. These connectors are designed for low profile, high density, mezzanine board-to-board applications for high speed data transfer. Polarization features on the connector housings and fully shrouded, recessed contacts protect against incorrect mating of the connectors.

The male contact is a blade design and the female contact is sprung to ensure a secure connection with minimal contact wipe.

Connectors feature SMT terminations and location pegs, and are supplied in tape and reel packaging with stainless steel pick and place caps 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

Contacts.....	Phosphor Bronze
Contact plating finish	Gold flash over Nickel on contact area, 100% Tin over Nickel on terminations
Housing	40% Glass-Filled Thermoplastic, halogen free, UL94V-0
Cap.....	Stainless Steel

2.2. ELECTRICAL CHARACTERISTICS

Current Rating (EIA-364-70A: 1998).....	0.5A max per contact
Dielectric Withstanding Voltage (EIA-364-20, 1mA max).....	500V AC for 1 minute
Voltage Rating	100V DC or AC peak
Contact Resistance (EIA-364-23, 10mA max):	
Pre-conditioned.....	50mΩ max
Post Conditioning.....	100mΩ max
Insulation Resistance (EIA-364-21C).....	1,000MΩ min at 500V

2.3. ENVIRONMENTAL CHARACTERISTICS

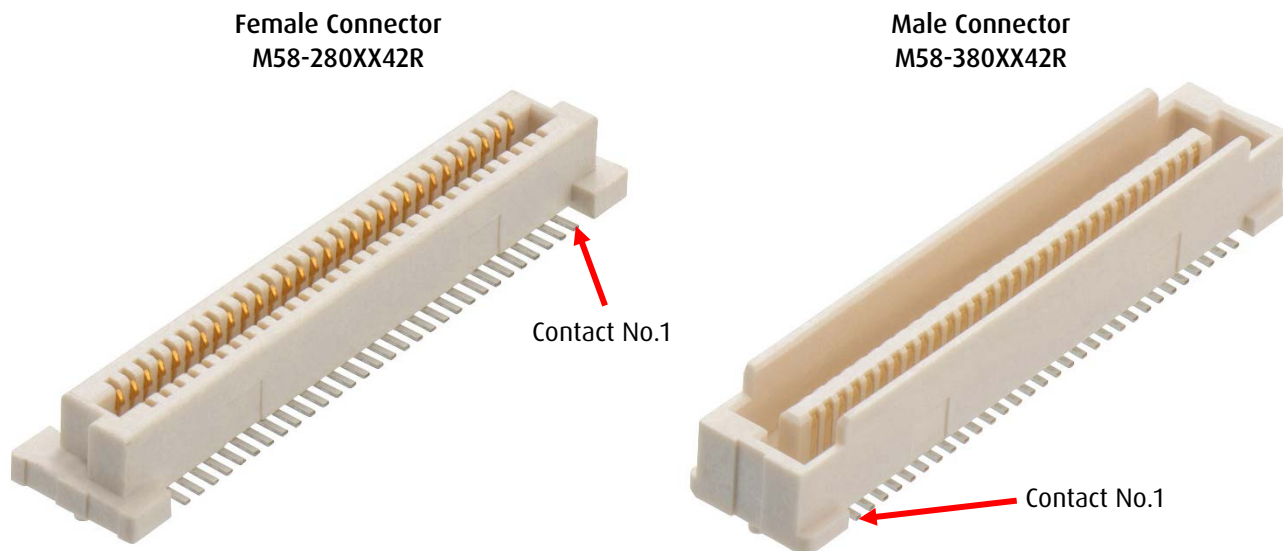
Operating Temperature Range	-40°C to +125°C
Vibration (EIA-364-28, Condition I)	10Hz to 55Hz, 1.5mm pk-pk displacement, 2 hours per axis
Mechanical Shock (EIA-364-27,Condition A).....	490m/s ² (50G) in all axis with 1μ sec max discontinuity
Thermal Shock (using methodology of EIA-364-32, Condition I).....	-40°C to +125°C, 5 cycles, 30 mins each extreme
Temperature Life	+125°C for 96 hours, -40°C for 96 hours
Humidity (EIA-364-31B, Condition A, Method II)	120 hours, 90-95% RH at +40°C
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
Mating and Unmating Forces (EIA-364-13C):	
Insertion Force (initial, per contact*).....	1.0N max
Withdrawal Force (per contact*).....	0.1N min
<i>* per contact when fully assembled connector is being mated and un-mated.</i>	

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. This testing was supported through the use of a digital twin to provide simulation results. The results shown below are a summary of key findings. For full details see Test Report Summary HT080XX (latest issue):

Insertion Loss:

5GHz Test	-0.68dB @ 5GHz
20GHz Test	-3dB @ >18GHz
18GHz Simulation.....	-1dB @ 15GHz

Return Loss:

5GHz Test	-14.67dB @ 5GHz
20GHz Test	-15dB @ 10GHz, -10dB @ 15GHz
18GHz Simulation.....	-10dB @ >16GHz

Impedance:

50ps rise time Test	84.96-99.74Ω @ 50ps
35ps rise time Test	77-92Ω @ 35ps
55ps rise time Simulation	79-100Ω @ 50ps

Crosstalk:

20GHz Test	-20dB @ >20GHz (NEXT), 25dB @ >20GHz (FEXT)
18GHz Simulation near-end crosstalk (NEXT).....	-25dB @ >18GHz
18GHz Simulation far-end crosstalk (FEXT).....	-25dB @ >18GHz

VSWR:

18GHz Simulation.....	<1.2:1 @ 12GHz
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