COMPONENT SPECIFICATION

M50 AND M52 SERIES CONNECTORS

AUGUST 2017

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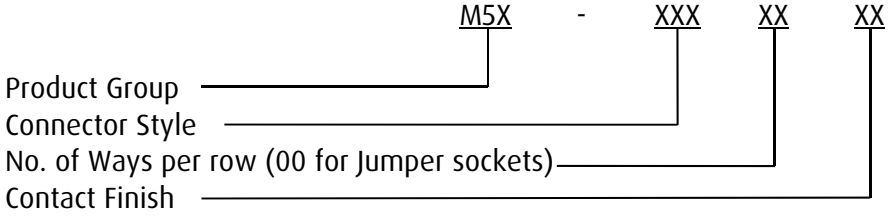
1. DESCRIPTION OF CONNECTOR AND INTENDED APPLICATION.

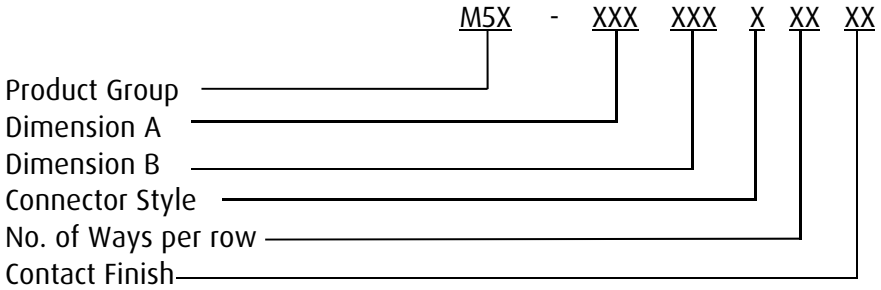
A range of 1.27mm pitch connectors, jumper sockets and IDC cable connectors, comprising vertical surface mount, vertical pc tail, horizontal pc tail, plugs and sockets of varying heights. Board-to-board spacing and configuration is obtained by the selection of an appropriate height plug and socket. M50 connectors are spaced 1.27mm between the rows, and are based on 0.40mm square or round pins. M52 connectors are spaced 2.54mm between the rows, and are based on 0.46mm square pins.

2. MARKING OF THE CONNECTOR AND/OR PACKAGE (ORDER CODE).

The marking (order code) shall appear on the package and shall be of the following style:



The marking (order code) for a pin header variant shall appear on the package and shall be of the following style:



Connector Style: See individual drawings for connector details.

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3. RATINGS.

For M50 Pin Header variants, please see the relevant specifications for M50-350, 360 and 390. For M52 Pin Header variants, these are specified as "M52-PH". Note: individual components may exceed above ratings – check individual customer information sheets.

3.1. MATERIAL & FINISH.

Moulding Material:
- For PC Tail or SMT connectors ..... High Temperature Thermoplastic, UL94V-0 Black
- For IDC Cable connectors & Jumper sockets ..... 30% Glass Filled PBT, UL94V-0 Black

Contact Material ..... Copper alloy

Contact Finish:
- M50-380 Contacts ..... Nickel all over, Gold Flash on contact area
- Other 42 finish code ..... Nickel all over, Gold Flash on contact area, 100% Tin on tails
- 45 finish code ..... Gold Flash over Nickel

3.2. ELECTRICAL CHARACTERISTICS.

Current Rating (per contact):
- M50-315 ..... 1.5A max
- M50-355, M50-365 ..... 1.75A max
- M50-380, M50-90X ..... 0.5A max
- Others ..... 1A max

Contact Resistance (initial) ..... 20mΩ max

Contact Resistance (after conditioning) ..... 30mΩ max

Dielectric Withstanding Voltage (Voltage Proof):
- M50-330/380 ..... 1,000V AC_{rms} for 1 minute
- M50-310/312/430/470/480/490 ..... 300V AC, 500V DC for 1 minute
- M50-311 ..... 1,000V AC for 1 minute (initial) 250V AC for 1 minute (final)
- M50-303/313/314/315/353/363/393 ..... 500V AC for 1 minute (initial) 250V AC for 1 minute (final)
- M50-19X/20X/320 ..... 800V AC_{rms} for 1 minute
- M50-90X/91X ..... 300V DC for 10 seconds
- M52-500/510 ..... 500V AC, 1,000V DC for 1 minute
- Others ..... 1,000V AC_{rms}/DC for 1 minute

Insulation Resistance:
- M50-355/365 ..... 5,000MΩ min
- M50-310/312/430/470/480/490 ..... 500MΩ min
- M50-90X/91X ..... 5MΩ min
- Others ..... 1,000MΩ min

3.3. ENVIRONMENTAL CHARACTERISTICS.

Operating Temperature Range:
- M50-355/365 ..... -55°C to +125°C
- M50-90X/91X ..... -20°C to +105°C
- Others ..... -40°C to +105°C

Vibration:
- M50-19X/20X/300/320/350/360/380/390, All M52 ..... 50-2000Hz, 3.13G_{rms}, duration 45mins
- M50-303/313/314/311/315 ..... 10-55Hz, 10G, duration 2hrs
- Others ..... Not tested

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3. RATINGS (continued).

3.3. ENVIRONMENTAL CHARACTERISTICS (continued).

Shock:

- M50-19X/20X/300/320/350/360/380/390, All M52 ..... 30G for 11ms
- M50-311/315 ..... 50G for 11ms
- M50-310/312/430/470/480/490 ..... Not tested

3.4. MECHANICAL CHARACTERISTICS.

Durability:

- M50-310/312/330/380/430/470/480/490/90X/91X ..... 100 operations
- M50-311 ..... 600 operations
- M50-315 ..... 25 operations
- M50-353/363/393 ..... 500 operations
- Others ..... 300 operations

Insertion force (maximum):

- M50-19X/20X 10N
- M50-320/330/380/90X/91X, M52-500/510 ..... 1N per contact
- M50-310/312/430 ..... 2N per contact
- M50-311 ..... 0.8N per contact
- M50-300/303/313/314/315, M52-501/505/511/515 ..... 1.5N per contact

Withdrawal force (minimum):

- M50-19X/20X 1.3N
- M50-310/312/315/330/380/430/90X/91X ..... 0.15N per contact
- M50-320, M52-500/510 ..... 0.12N per contact
- M50-300, M52-501/505/511/515 ..... 0.1N per contact
- M50-303/313/314 ..... 0.2N per contact

Contact Retention force (minimum):

- M50-19X/20X 4N
- M50-300/320/350/360/390, M52-PH/501/505/511/515 ..... 9.8N per contact
- M50-310/312/430/470/480/490, M52-500/510 ..... 1.5N per contact
- M50-303/311/313/314/315 ..... 3N per contact
- M50-353/363/393 ..... 2N per contact

3.5. SOLDERING DATA.

Solderability (for PC Tail & SMT products):

- M50-311 ..... 230°C for 3 seconds
- M50-315 ..... 260°C for 3 seconds
- Others ..... 245°C for 5 seconds

Soldering heat resistance (for PC Tail & SMT products) ..... 260°C for 10 seconds