

# HARWIN



## M55 SERIES: 1.27mm PITCH CONNECTORS

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## 1. DESCRIPTION OF CONNECTOR SYSTEM

A range of 1.27mm (0.05") pitch connectors, male and female shrouded connectors for board-to-board connection. All connector part numbers start with the series code M55.

The socket connectors are twin-beam female contacts, and these mate to solid pin male connectors. All connectors are double row and Surface Mount, supplied in tape-and reel packaging (pick-and-place caps included when applicable). All connector housings include location pegs for additional placement assistance on the PCB, and SMT side tabs for additional peel strength and strain relief when soldered down.

Both male and female connectors are available in Vertical or Horizontal orientations, with 3 height options on the Vertical connectors. The range can therefore be used for parallel board-to-board (mezzanine layouts), right-angle motherboard-to-daughterboard, or co-planar / edge-to-edge layouts. All housings include polarisation within the design.

## 2. RATINGS

### 2.1. MATERIALS

*All materials are listed on individual drawings.*

Contacts .....	Phosphor Bronze, Gold finish on contact area, 100% Tin on tails
Housing & Cap .....	LCP, UL94V-0
SMT Side Tabs.....	Brass, 100% Tin finish

### 2.2. ELECTRICAL CHARACTERISTICS

Current Rating.....	1.2A max per contact
Contact Resistance (EIA-364-23B):	
Initial.....	25mΩ max
After Conditioning.....	Additional 10mΩ max variation
Dielectric Withstanding Voltage (EIA-364-20C, Method B).....	500V AC for 1 minute
Insulation Resistance (EIA-364-21C).....	10GΩ min
Voltage Rating.....	100V AC

### 2.3. ENVIRONMENTAL CHARACTERISTICS

Operating Temperature Range .....	-55°C to +125°C
Vibration (EIA-364-28D, Condition IV).....	10-2000Hz, 20G (196m/s <sup>2</sup> ) peak, 1.52mm amplitude, duration 4 hours each axis, 12 hours total
Thermal Shock (EIA-364-32C, Condition III).....	-55°C to +125°C, 10 cycles, 30 mins each extreme
Temperature Life (EIA-364-17B, Method A).....	+125°C, 96 hours
Humidity (EIA-364-31B, Condition A).....	96 hours, 90-95% RH at +40°C
Salt Spray (EIA-364-26B).....	24 hours at +35°C, concentration 5%
Solderability (EIA-364-52).....	+245±5°C for 5±0.5 seconds; maximum time of 10 seconds at maximum temperature, 260°C.

### 2.4. MECHANICAL CHARACTERISTICS

Durability (EIA-364-13C) .....	500 operations
Mating and Unmating Forces (EIA-364-13C):	
Insertion Force (per contact) .....	0.8N max
Withdrawal Force (per contact).....	0.2N min
Contact Retention Force (EIA-364-29C).....	3.9N min per contact

## APPENDIX 1

### Mating Heights / Board-To-Board Heights for Vertical Connectors

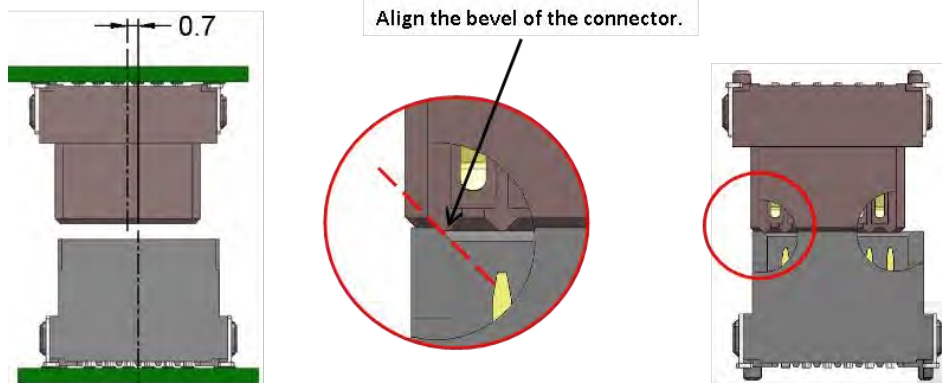
Female Connector Part number	Male Connector Part Number	Mating Height
M55-600xx42R	M55-700xx42R	8.00mm
M55-600xx42R	M55-701xx42R	9.50mm
M55-600xx42R	M55-702xx42R	11.10mm
M55-601xx42R	M55-700xx42R	10.80mm
M55-601xx42R	M55-701xx42R	12.30mm
M55-601xx42R	M55-702xx42R	13.90mm
M55-602xx42R	M55-700xx42R	15.40mm
M55-602xx42R	M55-701xx42R	16.90mm
M55-602xx42R	M55-702xx42R	18.50mm

Total Mating Length for Horizontal Connectors  
 (M55-610xx42R to M55-710xx42R) .....15.80mm

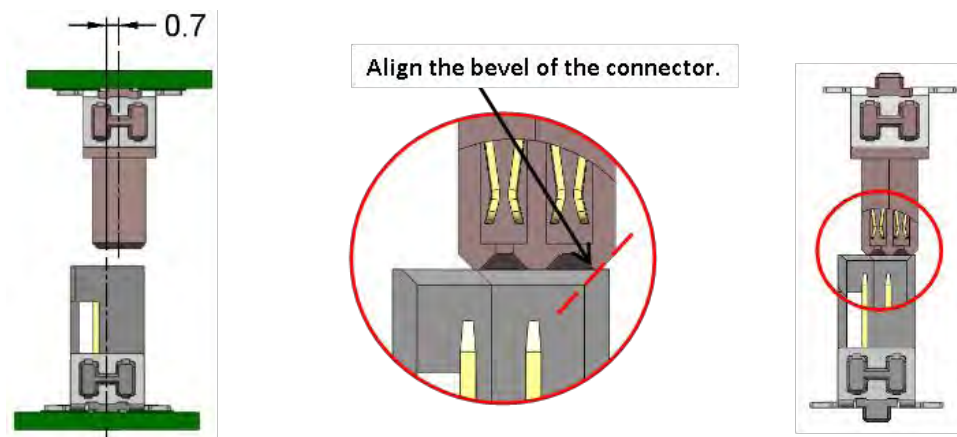
## APPENDIX 2

### Connector Misalignment

Misalignment tolerance for secure self centering – front view:



Misalignment tolerance for secure self centering – side view:



Misalignment angle for secure self centering:

