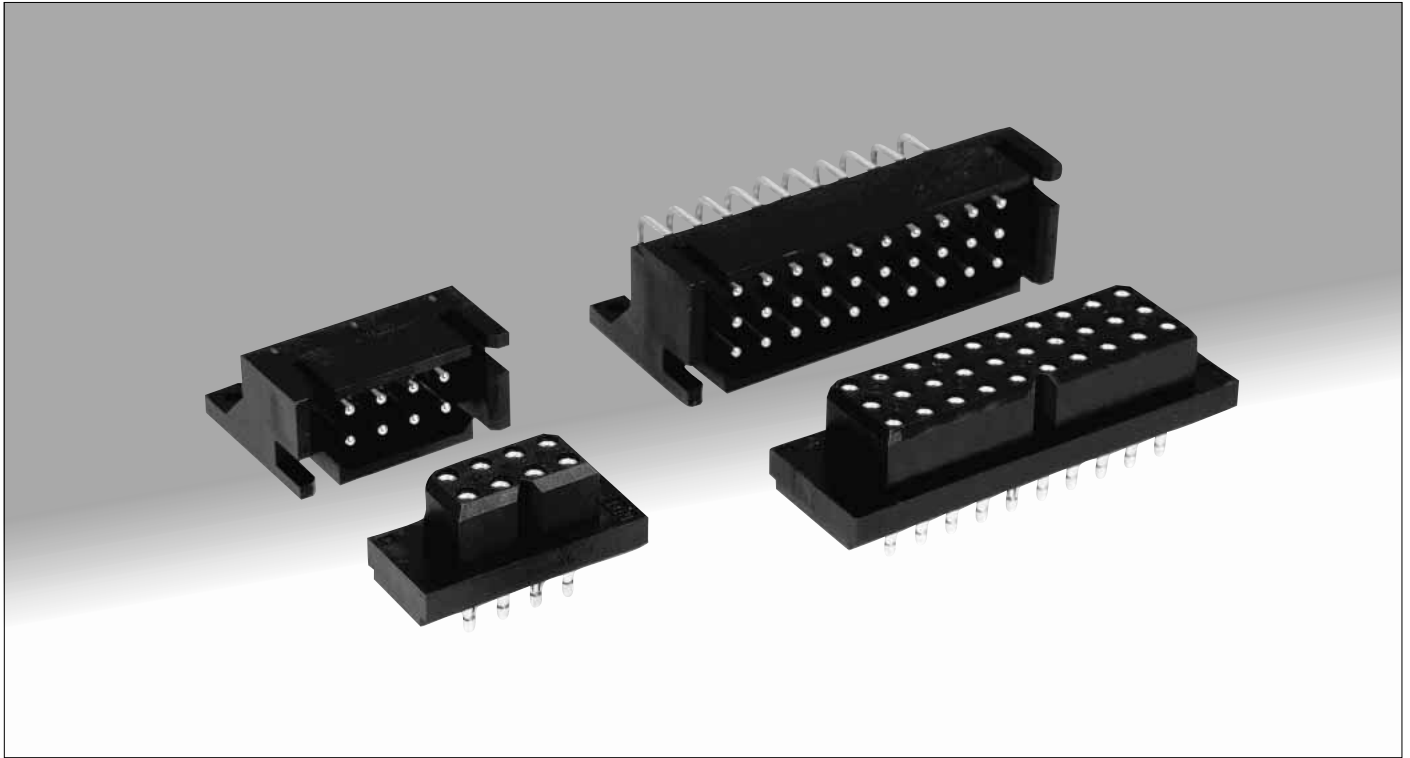


High Current, High Density, Power Connectors

MCN51 Series



■Features

1. High Current Applications

Board-to-board connectors are UL certified for 27 A per contact.

2. Hirose's Unique Compliant Press-fit connection to the PCB

The compliant section is designed to provide reliable and damage free connection with the Plated-Through-hole, reducing stresses to the PCB.

3. Multiple Contacts in a Variety of Configurations

offered with 8, 16 and 30 contacts in vertical, right angle, solder and compliant press-fit terminations.

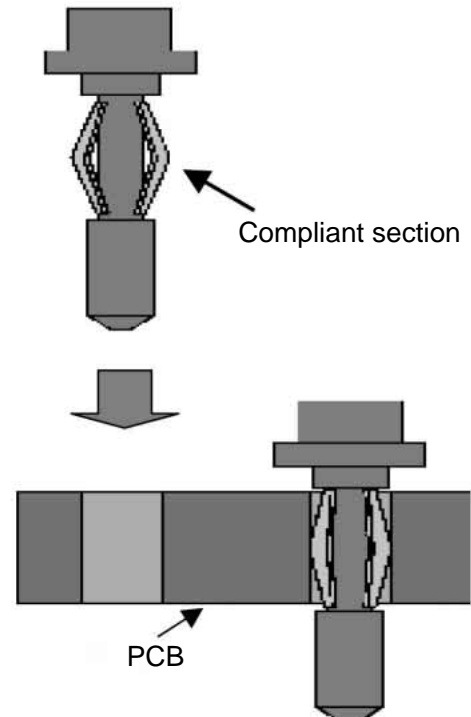
4. UL Recognized, CSA Certified

UL File No. E52653

CSA File No. LR95109



View of the Compliant Press-Fit section application



Min.PCB thickness = 3.2 mm

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Product Specifications

| | | | |
|---------|--------------------------------------|---|--|
| Ratings | Current rating 27 A max. (Note 1) | Operating temperature range -55°C to +125°C (Note 2) | Storage temperature range -10°C to +60°C (Note 3) |
| | Voltage rating 600 V AC | Operating humidity level Relative humidity 95% max. (provided there is no condensation) | Storage humidity range 40% to +70% |

| Item | Specification | Conditions |
|-----------------------------|--|---|
| 1.Insulation resistance | 5000M ohms min. | 500 V DC |
| 2.Withstanding voltage | No flashover or insulation breakdown. | 2000V AC /one minute |
| 3.Contact resistance | 3m ohms max. (initial value) | 25 A DC |
| 4.Vibration | No electrical discontinuity of 1 ms or more No damage, cracks, or parts dislocation. | Frequency of 10 to 2,000 Hz, overall amplitude of 1.5 mm Or, acceleration of 196 m/s² for 2 hours in each of 3 directions. |
| 5.Heat resistance | Contact resistance: 7m ohms max. | Expose to a temperature of +125°C for 96 hours. |
| 6.Cold resistance | Contact resistance: 7m ohms max. | Expose to a temperature of -55°C for 96 hours. |
| 7.Temperature cycle | Contact resistance: 7m ohms max. Insulation resistance: 5000M ohms min. No damage, cracks, or parts dislocation. | (-55°C: 30 minutes → 15 to 30°C: 5 minutes max. → 125°C: 30 minutes → 15 to 30°C: 5 minutes max.) 20 cycles |
| 8.Humidity resistance | Contact resistance: 7m ohms max. Insulation resistance: 5000 M ohms min. | 56 days at temperature of 40°C±2°C and humidity of 90% to 95% |
| 9.High temperature exposure | Contact resistance: 7m ohms max. | 1500 hours at temperature of 85°C |
| 10.Operating life | Contact resistance: 7m ohms max. | 1000 cycles |
| 11.Sulfur dioxide gas | Contact resistance: 7m ohms max. | Leave for 96 hours in an atmosphere of 25 ppm concentration sulfur dioxide gas. |

Note1: Refer to "Current-Temperature De-rating Curve" (IEC 512-3, Test 5b) and "Temperature Rise Curve" (IEC 512-3 Test 5a) on Page 3.

Note2: The term “storage” refers to products stored for long period of time prior to mounting and use. Operating Temperature Range and Humidity range covers non- conducting condition of installed connectors in storage, shipment or during transportation.

Materials

| Product | Part | Material | Finish | Remarks |
|-------------|-----------|--------------|--------------|---------|
| Pin headers | Insulator | PBT | Black | UL94V-0 |
| | Contacts | Copper alloy | Gold plating | —— |
| Receptacles | Insulator | PBT | Black | UL94V-0 |
| | Contacts | Copper alloy | Gold plating | —— |

Ordering Information

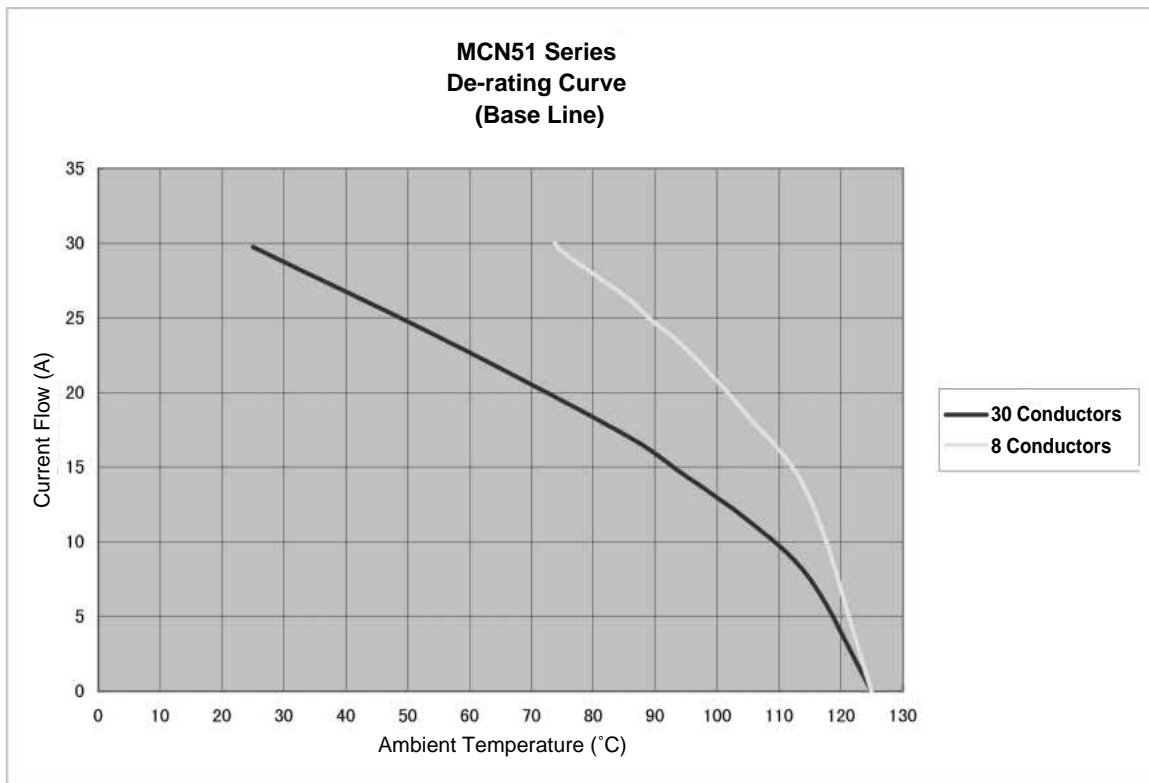
MCN 51 - 30 P 3 - DS

① ② ③ ④ ⑤

| | |
|--|---|
| ① Series name : MCN51 | ④ Rows 2: 2 rows 3: 3 rows |
| ② Number of contacts : 8, 30 | |
| ③ Connector type P : Pin header S : Socket Receptacle | ⑤ Contact type PFA : Press-fit (through-hole diameter 2.03 mm) DS : Right-angle through-hole type |

■Current - Temperature De-rating Curve

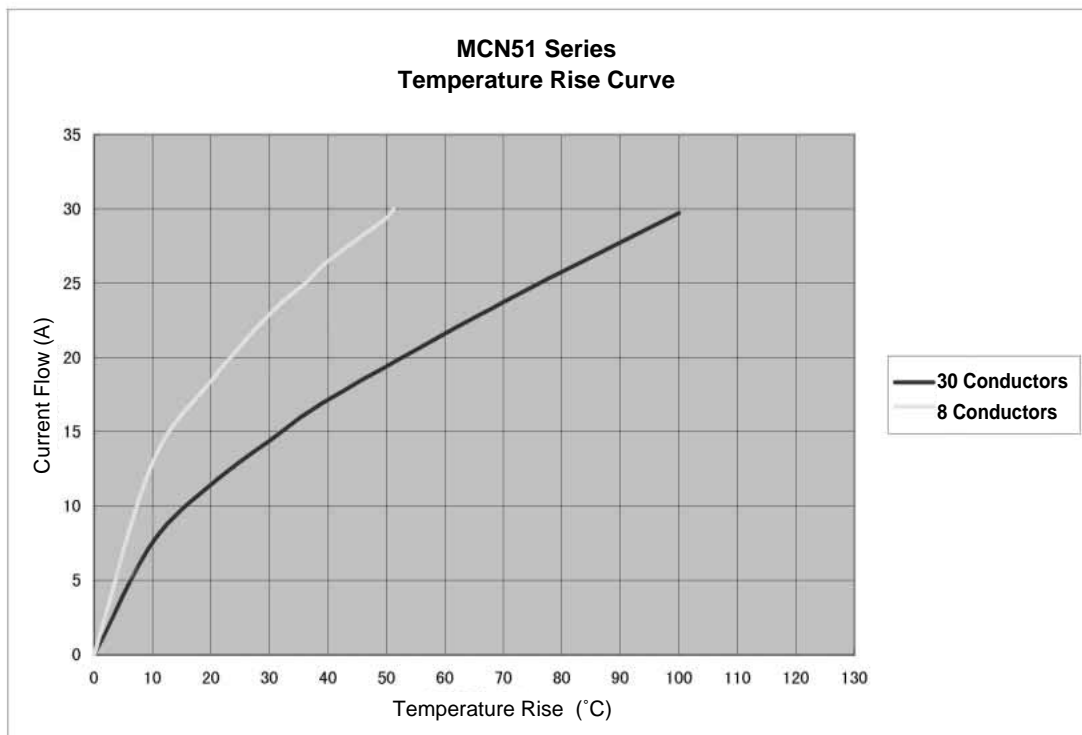
●(IEC 512-3, Test 5b)



Measurements were made with 12 AWG wire connected in series to all contacts.

■Temperature Rise Curve

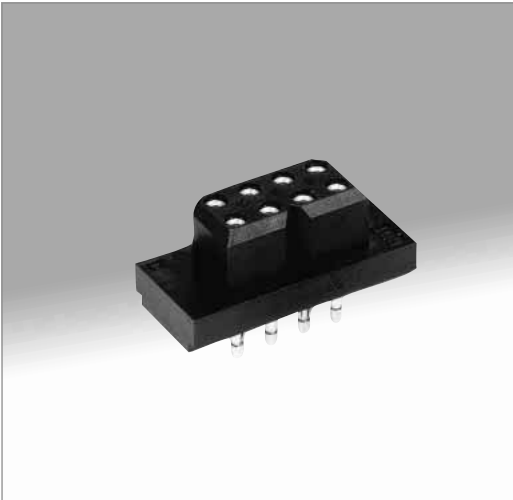
●(IEC 512-3, Test 5a)



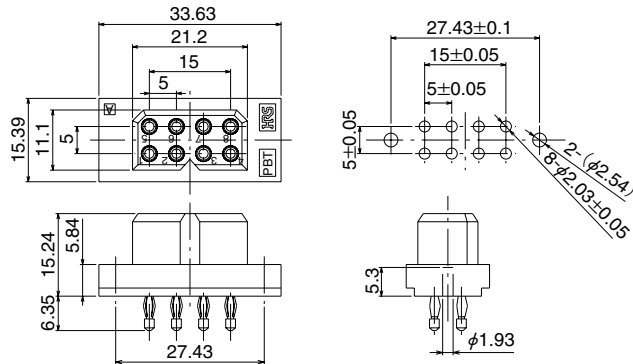
Measurements were made with 12 AWG wire connected in series to all contacts.

■Receptacle: Straight, Press-Fit

●2-row type



PCB mounting pattern

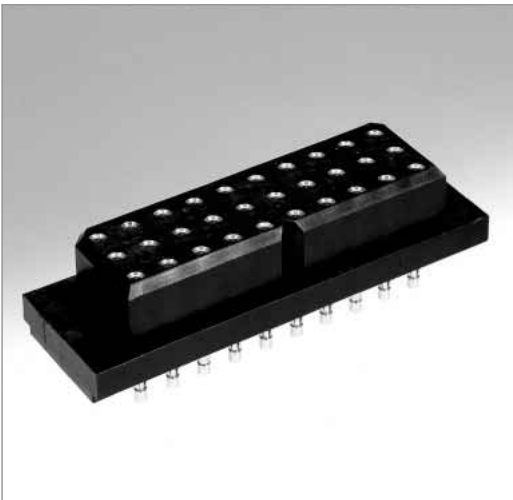


Copper plating thickness : $70 \pm 10 \mu\text{m}$
Solder plating thickness : $5 \text{ to } 10 \mu\text{m}$
Board thickness : 3.2 mm min.

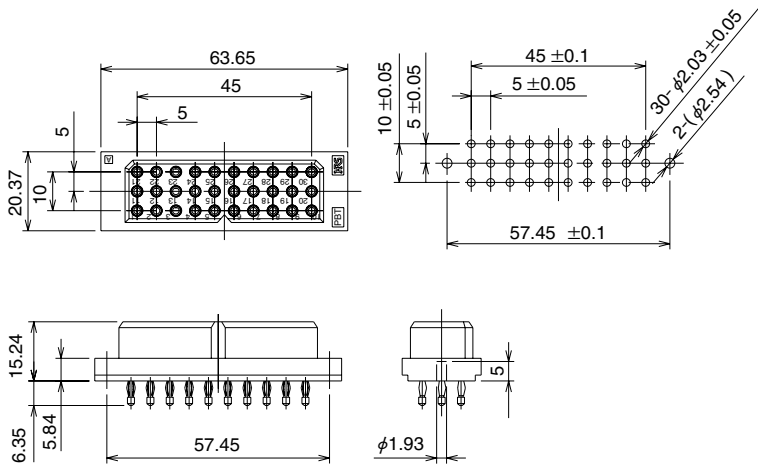
Fasten to the board being sure to use (American type) #2 tapping screws.
Recommended Through-Hole Diameter
Finished hole : $2.03 \text{ dia.} \pm 0.05 \text{ mm}$
Drill diameter : $2.185 \text{ dia.} \pm 0.025 \text{ mm}$

| Part Number | CL No. |
|---------------|------------|
| MCN51-8S2-PFA | 589-0200-6 |

●3-row type



PCB mounting pattern



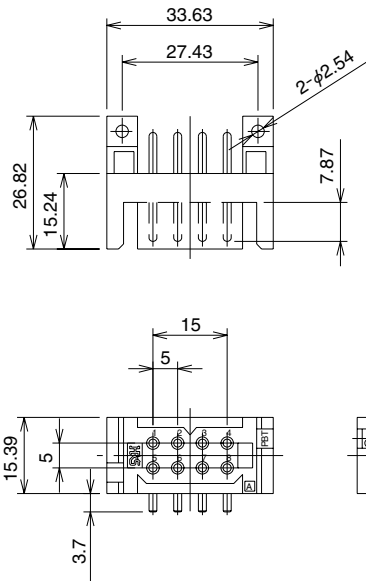
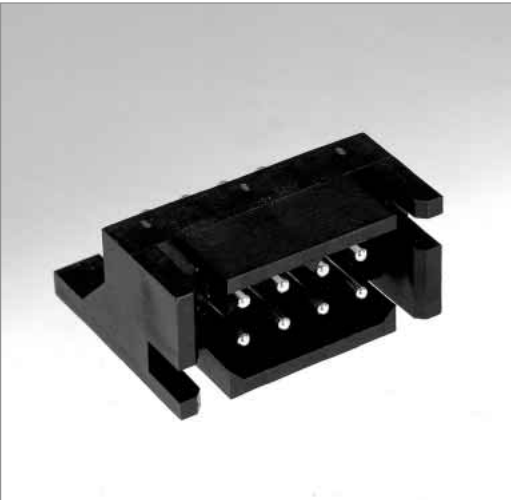
Copper plating thickness : $70 \pm 10 \mu\text{m}$
Solder plating thickness : $5 \text{ to } 10 \mu\text{m}$
Board thickness : 3.2 mm min.

Fasten to the board being sure to use (American type) #2 tapping screws.
Recommended Through-Hole Diameter
Finished hole : $2.03 \text{ dia.} \pm 0.05 \text{ mm}$
Drill diameter : $2.185 \text{ dia.} \pm 0.025 \text{ mm}$

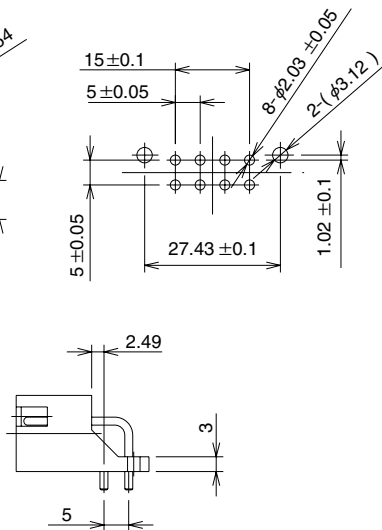
| Part Number | CL No. |
|----------------|------------|
| MCN51-30S3-PFA | 589-0196-0 |

■Pin Header: Right-Angle Through-hole

●2-row type

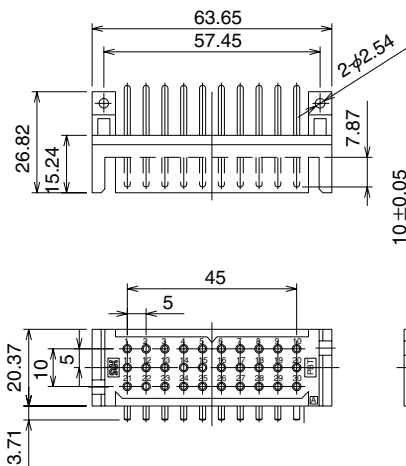


PCB mounting pattern

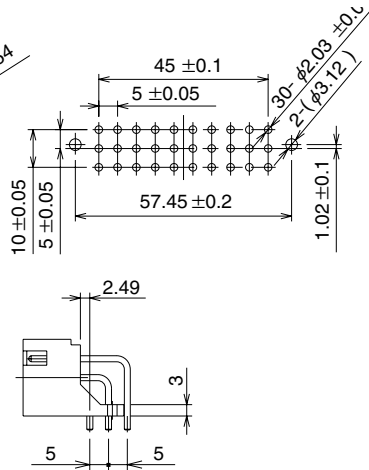


| Part Number | CL No. |
|--------------|------------|
| MCN51-8P2-DS | 589-0202-1 |

●3-row type



PCB mounting pattern



| Part Number | CL No. |
|---------------|------------|
| MCN51-30P3-DS | 589-0195-8 |