

# METPAK 2™

**MP2 — R XXX — 5 1 X X — XXXX**

METPAK 2 Series  
Socket, Inverse Signal Type

Plating:  
TR, TR30, R30  
(R30-P2 only)

Tail Length  
1 = 4.30mm (Press-fit or Solder Tail)  
2 = 13.00mm (Press-fit Only)

5 Row Grid

Contact Arrangement  
1 = All Positions Filled  
2 = Rows A, B, C, D Filled

P = Press-Fit Tail Termination  
S = Solder Tail Termination

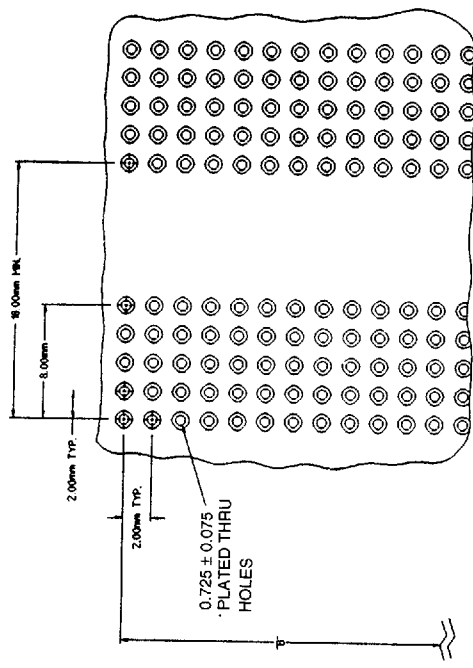
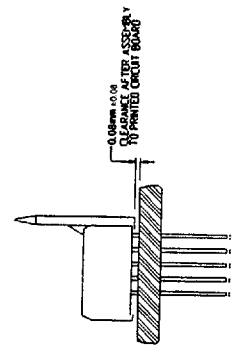
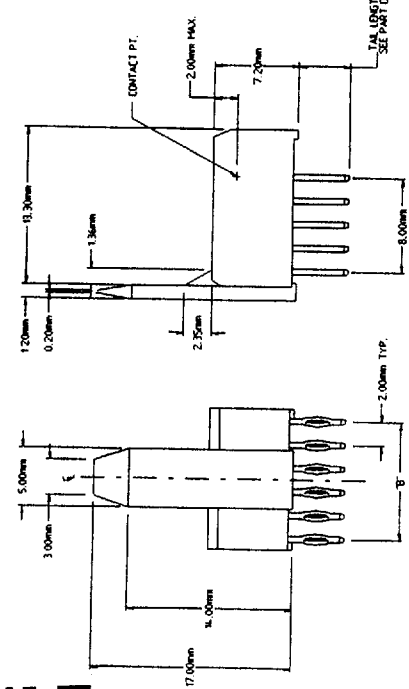
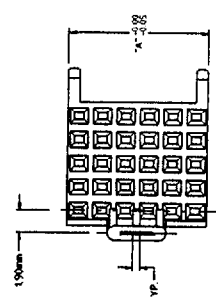
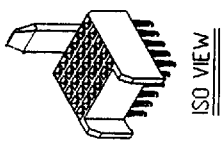
Number of Positions  
(all rows filled)

|              |
|--------------|
| 030 (5 x 6)  |
| 060 (5 x 12) |
| 090 (5 x 18) |
| 120 (5 x 24) |
| 150 (5 x 30) |
| 180 (5 x 36) |
| 210 (5 x 42) |
| 240 (5 x 48) |
| 270 (5 x 54) |
| 300 (5 x 60) |

Number of Positions  
(Rows A, B, C, & D only)

|              |
|--------------|
| 024 (4 x 6)  |
| 048 (4 x 12) |
| 072 (4 x 18) |
| 096 (4 x 24) |
| 120 (4 x 30) |
| 144 (4 x 36) |
| 168 (4 x 42) |
| 192 (4 x 48) |
| 216 (4 x 54) |
| 240 (4 x 60) |

| Description        | "A"    | "B"    | Description        | "A"    | "B"    |
|--------------------|--------|--------|--------------------|--------|--------|
| MP2-R030-51PX-XXXX | 12.00  | 10.00  | MP2-R024-52PX-XXXX | 12.00  | 10.00  |
| MP2-R060-51PX-XXXX | 24.00  | 22.00  | MP2-R048-52PX-XXXX | 24.00  | 22.00  |
| MP2-R090-51PX-XXXX | 36.00  | 34.00  | MP2-R072-52PX-XXXX | 36.00  | 34.00  |
| MP2-R120-51PX-XXXX | 48.00  | 46.00  | MP2-R096-52PX-XXXX | 48.00  | 46.00  |
| MP2-R150-51PX-XXXX | 60.00  | 58.00  | MP2-R120-52PX-XXXX | 60.00  | 58.00  |
| MP2-R180-51PX-XXXX | 72.00  | 70.00  | MP2-R144-52PX-XXXX | 72.00  | 70.00  |
| MP2-R210-51PX-XXXX | 84.00  | 82.00  | MP2-R168-52PX-XXXX | 84.00  | 82.00  |
| MP2-R240-51PX-XXXX | 96.00  | 94.00  | MP2-R192-52PX-XXXX | 96.00  | 94.00  |
| MP2-R270-51PX-XXXX | 108.00 | 106.00 | MP2-R216-52PX-XXXX | 108.00 | 106.00 |
| MP2-R300-51PX-XXXX | 120.00 | 118.00 | MP2-R240-52PX-XXXX | 120.00 | 118.00 |

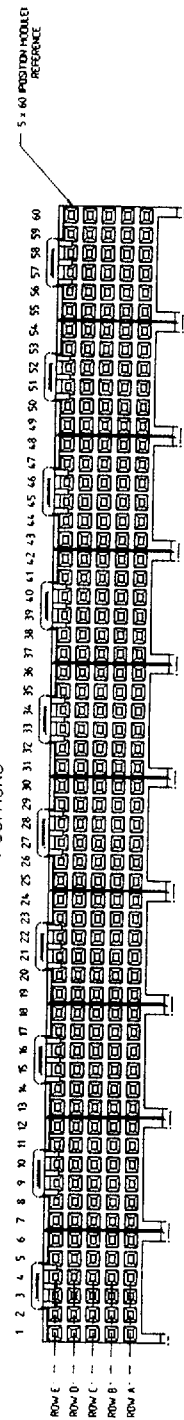


**CUSTOMER DRAWING SHEET 101**

**ALL DIMENSIONS IN MILLIMETERS**

**RECOMMENDED P.C.B. MOUNTING HOLE PATTERN**

Drilled Hole Dia. 0.81 - 0.86mm (.031 - .034 in)  
Copper Plating Thickness: 0.025mm (.001 in) Min.  
Tin/Lead Plating Thickness: 0.015 (.0005 in) Max.  
Hole DIA after plating 0.65 - 0.80 (.026 - .032 in)



- Notes:**
- This connector is designed to comply with IEC 1076-4-001, 48B and EIA/SP-3179 2mm 2-part connectors
  - Mating Products: Right angle solder signal type headers: MP2-PXXX-5PRX-XX Stacking header: MP2-PSXXX-51S1-XX
  - Press-fit product (P1 & P2 options) require application tooling. Push tool order number MP2-PT-FXXX-X (Page 289)

**Robinson Nugent**


812/945-0211  
812/945-0805 FAX

**METPAK 2™ MP2-FXXX-5XPX-XX**  
(Inverse Female, Signal, Straight, Press-fit/Solder, 5-Row Grid)

## MATERIALS

|                      |   |                      |   |
|----------------------|---|----------------------|---|
| <b>Housing:</b>      | High temperature, 30% glass-filled, liquid crystal polymer                                      | <b>Plating: TR =</b> | 10 $\mu$ inch ROBEX® [7 $\mu$ inch (.178 $\mu$ m) minimum Palladium Nickel with 3 $\mu$ inch (.076 $\mu$ m) minimum Gold flash on contact area. 100 $\mu$ inch (2.54 $\mu$ m) minimum Tin/Lead on terminal area.  |
| <b>Contacts:</b>     | Standard Header - Phosphor Bronze<br>Inverse Header - Copper Alloy<br>Socket - Beryllium Copper | <b>TR30 =</b>        | 30 $\mu$ inch ROBEX® [27 $\mu$ inch (.686 $\mu$ m) minimum Palladium Nickel with 3 $\mu$ inch (.076 $\mu$ m) minimum Gold flash on contact area. 100 $\mu$ inch (2.54 $\mu$ m) minimum Tin/Lead on terminal area. |
| <b>Packaging:</b>    | Anti-static PVC tubes   |                      |   |
| <b>Flammability:</b> | UL 94V-0  |                      | All options include an underplate of 50 $\mu$ inch (1.27 $\mu$ m) minimum Nickel.   |

## MECHANICAL

|  |               |                      |             |   |
|--|---------------|----------------------|-------------|---|
| <b>Insertion Force:</b> (average/contact)  | 33 grams      | <b>Power Contact</b> | 110 grams   | <b>Agency Approvals</b><br> #73746 |
| <b>Withdrawal Force:</b> (minimum/contact) | 20 grams      |                      | 30 grams    |   |
| <b>Normal Force:</b> (average/beam)        | 70 grams      |                      | 100 grams   |   |
| <b>Durability:</b> TR Plating:             | 500 cycles    |                      | 500 cycles  |   |
|  | TR30 Plating: | 5000 cycles          | 5000 cycles |   |
|  | R30 Plating:  | 5000 cycles          | 5000 cycles |   |

## ELECTRICAL

**Current Rating:** 3.0 Amps per signal socket/header contact\*  
6.50 Amps per power socket/header contact\*  
at 70°C.

**Insulation Resistance:** 5000 megohms initial  
1000 megohms after exposure  
(per module) (Per signal/power socket/header module)

**Dielectric Withstanding:** 1500 Volts AC

**Capacitance:** Maximum 1 pF capacitive coupling between adjacent contacts per mated (socket & header assembled) signal module  
Maximum 3 pF capacitive coupling between one line and all other surrounding lines grounded, per mated signal module

**Inductance:** Total inductance for adjacent contact pairs, all inductances in nH (4 row connector)

|       | Row A | Row B | Row C | Row D |
|-------|-------|-------|-------|-------|
| Row A | 14.1  | 15.6  |       |       |
| Row B |       | 16.8  | 17.5  |       |
| Row C |       |       | 18.9  | 19.2  |
| Row D |       |       |       | 20.9  |

Total inductance for a contact in the given row with all other surrounding contacts (grounded), in nH (4 row connector)

| Row A | Row B | Row C | Row D |
|-------|-------|-------|-------|
| 10.0  | 10.6  | 11.8  | 14.3  |

**Propagation Delay:**

Propagation delay in picoseconds (4-row connector)

| Row A | Row B | Row C | Row D |
|-------|-------|-------|-------|
| 159   | 171   | 191   | 221   |

Skew in picoseconds (4-row connector)

| Row A-B | Row B-C | Row C-D |
|---------|---------|---------|
| 12      | 20      | 30      |

**Resistance Per Row: (Signal Contacts)**

| Row | Resistance in milliohms |
|-----|-------------------------|
| A   | 14                      |
| B   | 16                      |
| C   | 18                      |
| D   | 20                      |
| E   | 22                      |

**Single Line Crosstalk -**

**Near End:**

Maximum 5% in any row or column combination per mated signal module

**Single Line Crosstalk -**

**Far End:**

Maximum 2.5% per mated signal module

**Characteristic Impedance:**

Minimum 50 ohms per mated signal module  
Maximum 60 ohms per mated signal module when mounted in a 50 Ohm system and excited by a 1 nanosecond risetime step signal. Contacts are allocated in a 3 : 1 S : G ratio.

Note: Electrical performance data have been simulated with a SPICE model for the METPAK 2™ connector. \*Current ratings are for benchmarking purposes only, specific current carrying capabilities are system design related. Detailed electrical, mechanical and environmental specifications are available upon request (See Page 251).