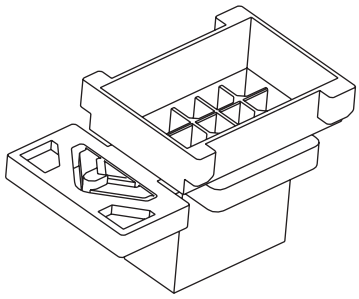
Jameco Part Number 1970931

3.00mm (.118") Micro-Fit 3.0 BMI™ Panel-to-Panel Plug

44300
Dual Row



Features and Benefits
- 4 to 24 circuits for design flexibility
- Use standard Micro-Fit terminals to reduce inventory
- Innovative panel mounting design holds connectors firmly in place
- Fully isolated contacts prevent terminal damage
- Fully polarized to completely prevent mismating

Reference Information
Product Specification: PS-44300
Packaging: Bag
UL File No.: E29179
CSA File No.: LR19980
TUV License No.: R72040445
Mates With: 44133, 44764 and 44769
Use With: 43031
Designed In: Millimeters

Electrical
Dielectric Withstanding Voltage: 1500V AC
Insulation Resistance: 1000 Megohms min.

Mechanical
Contact Insertion Force: 14.7N (3.30 lb)
Contact Retention to Housing: 24.5N (5.51 lb)

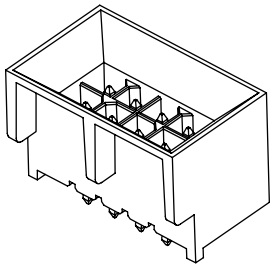
Physical
Housing: Polyester, UL 94V-0

Circuits	Order No.
4	44300-0400
6	44300-0600
8	44300-0800
10	44300-1000
12	44300-1200
14	44300-1400

Circuits	Order No.
16	44300-1600
18	44300-1800
20	44300-2000
22	44300-2200
24	44300-2400

3.00mm (.118") Pitch Micro-Fit BMI CPI™ Board-to-Board and Wire-to-Board Header

45280
Dual Row, Vertical



Features and Benefits
- Solderless board connection
- 4 to 24 circuits for design flexibility
- Fully isolated contacts prevent terminal damage
- Fully polarized to prevent mismating

Reference Information
Product Specification: PS-44300
Packaging: Tray
UL File No.: E29179
CSA File No.: LR19980A
TUV File No.: R72040445
Mates With: 44133, 44764 and 44769
Designed In: Millimeters

Electrical
Voltage: 250V
Current: 5.0A max.
Contact Resistance: 100 milliohms max.
Dielectric Withstanding Voltage: 1500V AC

Mechanical
Insertion Force to PCB: 10.9kgf max. (24 lbf) per terminal
Retention Force to PCB: 3.6kgf max. (8lbf) per terminal
Durability: 30 cycles

Physical
Housing: Glass-filled nylon, UL 94V-0
Contact: Brass
Plating: Contact Area—Tin or Gold
Solder Tail Area—Tin or Tin/Lead
Underplating—Nickel
PCB Thickness: 2.34mm (.092") min.
Operating Temperature: -40 to +105˚C

Circuits	Order No.			Lead-free
	Tin	15µ" Gold	30µ" Gold	
4	45280-0401	45280-0452	45280-0453	Yes
6	45280-0601	45280-0652	45280-0653	
8	45280-0801	45280-0852	45280-0853	
10	45280-1001	45280-1052	45280-1053	
12	45280-1201	45280-1252	45280-1253	
14	45280-1401	45280-1452	45280-1453	
16	45280-1601	45280-1652	45280-1653	
18	45280-1801	45280-1852	45280-1853	
20	45280-2001	45280-2052	45280-2053	
22	45280-2201	45280-2252	45280-2253	
24	45280-2401	45280-2452	45280-2453	

Circuits	Order No.		Lead-free
	15µ" Gold	30µ" Gold	
4	45280-0402	45280-0403	No
6	45280-0602	45280-0603	
8	45280-0802	45280-0803	
10	45280-1002	45280-1003	
12	45280-1202	45280-1203	
14	45280-1402	45280-1403	
16	45280-1602	45280-1603	
18	45280-1802	45280-1803	
20	45280-2002	45280-2003	
22	45280-2202	45280-2203	
24	45280-2402	45280-2403	

PRODUCT SPECIFICATION

MICRO-FIT BMI FLOATING CONNECTOR SYSTEM

1.0 SCOPE

This Product Specification covers the 3.00 mm (.118 inch) centerline (pitch) connector system terminated with 20 to 30 AWG wire using crimp technology with tin plating.

2.0 PRODUCT DESCRIPTION

2.1 PRODUCT NAME AND SERIES NUMBERS

Micro-Fit Dual Row BMI Floating Receptacle: 44133
Micro-Fit Dual Row BMI Panel Mount Plug: 44300
Micro-Fit Dual Row BMI Receptacle: 44764 and 44769
Micro-Fit Dual Row BMI Headers: 44428 and 44432
Micro-Fit Dual Row BMI Vertical CPI Header : 45280
Test Plug: 44242 (recommended for continuity testing only)
Female Crimp Terminal: 43030
Male Crimp Terminal: 43031

2.2 DIMENSIONS, MATERIALS, PLATINGS AND MARKINGS

Crimp Terminals: Phosphor Bronze
Receptacle and Plug: Polyester
Headers: High Temp Nylon
Pins: Brass, Modified Tin/Brass, Phosphor Bronze

2.3 SAFETY AGENCY APPROVALS

UL File Number:…. E29179
CSA:…….. LR19980
TUV……..72040445

3.0 APPLICABLE DOCUMENTS AND SPECIFICATIONS

Test Summary: TS-43045-001

4.0 RATINGS

4.1 VOLTAGE

UL : 250 Volts AC (MAX) {or 176 Volts DC}
TUV : 250Volts

4.2 CURRENT AND APPLICABLE WIRES

AWG	Amps	Outside Insulation Diameter
20	5	1.85 mm (.073 inch)
22	5	1.85 mm (.073 inch)
24	4	1.85 mm (.073 inch)
26	3	1.27 mm (.050 inch)
28	2	1.27 mm (.050 inch)
30	1	1.27 mm (.050 inch)

4.2.1 CURRENT FOR TEST PLUG 44242

2.5 Amps Maximum (Pogo pin current capacity)
(Test plugs are for testing purposes only and not intended for continuous use.)

4.3 TEMPERATURE

Operating: -40°C to +105°C (Including Terminal Temperature Rise)
Nonoperating: -40°C to +105°C

5.0 PERFORMANCE

5.1 ELECTRICAL REQUIREMENTS

DESCRIPTION	TEST CONDITION	REQUIREMENT
Contact Resistance (Low Level)	Mate connectors: apply a maximum voltage of 20 mV and a current of 100 mA.	10 milliohms MAXIMUM [initial]
Contact Resistance @ Rated Current	Mate connectors: apply a maximum voltage of 20 mV at rated current.	30 milliohms MAXIMUM [initial]
Contact Resistance of Wire Termination (Low Level)	Terminate the applicable wire to the terminal and measure wire using a voltage of 20 mV and a current of 100 mA.	5 milliohms MAXIMUM [initial]
Insulation Resistance	Unmate & unmount connectors: apply a voltage of 500 VDC between adjacent terminals and between terminals to ground.	1000 Megohms MINIMUM
Dielectric Withstanding Voltage	Unmate connectors: apply a voltage of {two times the rated voltage plus 1000 volts} VAC for 1 minute between adjacent terminals and between terminals to ground.	No breakdown; current leakage < 5 mA
Capacitance	Measure between adjacent terminals at 1 MHz.	2 picofarads MAXIMUM
Temperature Rise (via Current Cycling)	Mate connectors: measure the temperature rise at the rated current after: 96 hours OR 240 hours (45 minutes ON and 15 minutes OFF per hour).	Temperature rise: +30°C MAXIMUM

5.2 MECHANICAL REQUIREMENTS

DESCRIPTION	TEST CONDITION	REQUIREMENT
Connector Mate and Unmate Forces	Mate and unmate connector (male to female) at a rate of 25 ± 6 mm (1 ± ¼ inch) per minute. (per circuit) (Gage dimensions in Section 7.0)	8.0 N (1.8 lbf) MAXIMUM insertion force & 3.7 N (0.8 lbf) MINIMUM withdrawal force
Terminal Retention Force (in Housing)	Axial pullout force on the terminal in the housing at a rate of 25 ± 6 mm (1 ± ¼ inch) per minute.	24.5 N (5.5 lbf) MINIMUM retention force

5.2 MECHANICAL REQUIREMENTS

DESCRIPTION	TEST CONDITION	REQUIREMENT
Pin Retention Force (in Header)	Axial pullout force on the terminal in the housing at a rate of 25 ± 6 mm (1 ± ¼ inch) per minute.	13.3 N (3.0 lbf) MINIMUM retention force
Terminal Insertion Force (into Housing)	Apply an axial insertion force on the terminal at a rate of 25 ± 6 mm (1 ± ¼ inch).	14.7 N (3.3 lbf) MAXIMUM insertion force
Durability	Mate connectors up to 30 cycles for tin or gold at a maximum rate of 10 cycles per minute prior to Environmental Tests.	10 milliohms MAXIMUM (change from initial)
Vibration (Random)	Mate connectors and vibrate per EIA 364-28, test condition VII.	10 milliohms MAXIMUM (change from initial) & Discontinuity < 1 microsecond
Shock (Mechanical)	Mate connectors and shock at 50 g's with ½ sine wave (11 milliseconds) shocks in the ±X,±Y,±Z axes (18 shocks total).	10 milliohms MAXIMUM (change from initial]) & Discontinuity < 1 microsecond
Wire Pullout Force (Axial) Wire to Terminal	Apply an axial pullout force on the wire at a rate of 25 ± 6 mm (1 ± ¼ inch).	20 Awg: 57.9 N (13.0 lbf) 22 Awg: 35.5 N (8.0 lbf) 24 Awg: 26.6 N (6.0 lbf) 26 Awg: 13.3 N (3.0 lbf) 28 Awg: 8.9 N (2.0 lbf) 30 Awg: 6.6 N (1.5 lbf) MINIMUM pullout force
Normal Force	Apply a perpendicular force.	2.7 N (0.6 lbf) MINIMUM
Panel Retention Forces	Insert and withdraw a connector at a rate of 25 ± 6 mm (1 ± ¼ inch) per minute.	200 N (45 lbf) MINIMUM withdrawal force
Fretting Corrosion (Hammer Shock)	Mate connectors: strike test platform at a rate of 10 cycles per minute with a 0.98 N (100 gram) hammer for 20,000 cycles.	10 milliohms MAXIMUM (change from initial)
Compliant Pin Insertion Force into PCB Hole (45280 Series)	Apply an axial insertion force on the terminal at a rate of 25 ± 6 mm (1 ± ¼ inch).	106.7 N (24 lbf) MAXIMUM Insertion force (Per Terminal)
Compliant Pin Retention Force in PCB Hole (45280 Series)	Apply an axial extraction force on the terminal at a rate of 25 ± 6 mm (1 ± ¼ inch).	35.6 N (8 lbf) MINIMUM Retention force (Per Terminal)

5.3 ENVIRONMENTAL REQUIREMENTS

DESCRIPTION	TEST CONDITION	REQUIREMENT
Fretting Corrosion (Thermal Shock)	Mate connectors: expose for 1,000 cycles between temperatures 25 and 85°C; dwell 0.5 hours at each temperature. {Note: Remove surface moisture and air dry for 1 hour prior to measurements; monitor low level contact resistance every 250 cycles.}	10 milliohms MAXIMUM (change from initial)
Shock (Thermal)	Mate connectors; expose to 5 cycles of: Temperature °C — Duration (Minutes) -40 +0/-3 — 30 +25 ±10 — 5 MAXIMUM +105 +3/-0 — 30 +25 ±10 — 5 MAXIMUM	10 milliohms MAXIMUM (change from initial)
Thermal Aging	Mate connectors; expose to: 96 hours at 105 ± 2°C or 500 hours at 85 ± 2°C	10 milliohms MAXIMUM (change from initial)
Humidity (Steady State)	Mate connectors: expose to a temperature of 85 ± 2°C with a relative humidity of 90-95% for 96 hours. Note: Remove surface moisture and air dry for 1 hour prior to measurements.	10 milliohms MAXIMUM (change from initial) & Dielectric Withstanding Voltage: No Breakdown at 500 VAC & Insulation Resistance: 1000 Megohms MINIMUM
Humidity (Cyclic)	Mate connectors: cycle per EIA-364-31: 10 cycles at temperature 25 ± 3°C at 80 ± 5% relative humidity and 65 ± 3°C at 50 ± 5% relative humidity; dwell time of 1.0 hour; ramp time of 0.5 hours. {Note: Remove surface moisture and air dry for 1 hour prior to measurements.}	10 milliohms MAXIMUM (change from initial) & Dielectric Withstanding Voltage: No Breakdown at 500 VAC & Insulation Resistance: 1000 Megohms MINIMUM

5.3 ENVIRONMENTAL REQUIREMENTS		
Solderability	Per SMES-152	Solder coverage: 95% MINIMUM (per SMES-152)
Solder Resistance	Dip connector terminal tails in solder: Solder Duration: 5 ± 0.5 seconds; Solder Temperature: 260°C MAX (This simulates a Wave Solder Process)	Visual: No Damage to insulator material
Cold Resistance	Mate connectors: Duration: 96 hours; Temperature: -40 ± 3°C	10 milliohms MAXIMUM (change from initial)
Corrosive Atmosphere: Flowing Mixed Gas (FMG)	Mate connectors: Test per EIA-364-65, method 2A	10 milliohms MAXIMUM (change from initial)

6.0 PACKAGING

Parts shall be packaged to protect against damage during handling, transit and storage per the packaging specifications listed below:

BMI Floating Receptacle: PK-44133-002
BMI Panel Mount Plug: PK-44300-001, PK-44300-002
BMI Receptacles: PK-44764-001, PK-44769-001
BMI Headers: PK-44428-001, PK-44432-001
BMI Vertical CPI Header: PK-44432-001

7.0 GAGES AND FIXTURES

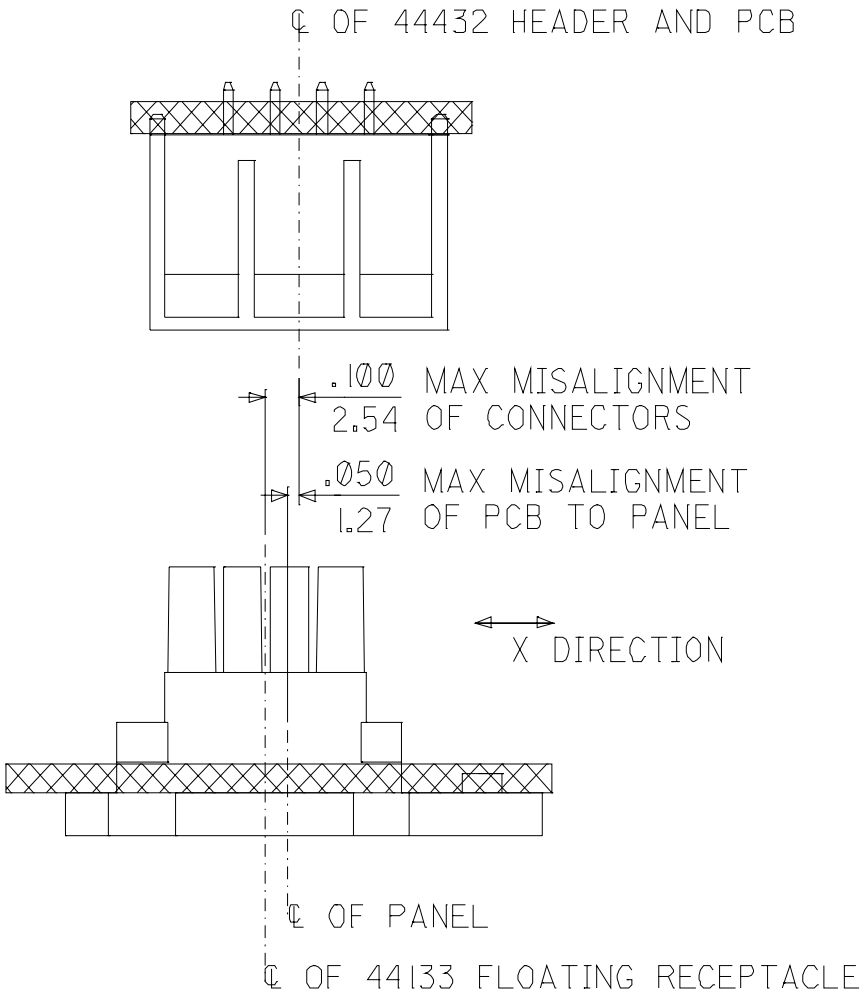
It is recommended that test plugs (Series 44242) be used for continuity testing of receptacles. Standard mating parts should not be used for continuity testing.

8.0 CONNECTOR ALIGNMENT

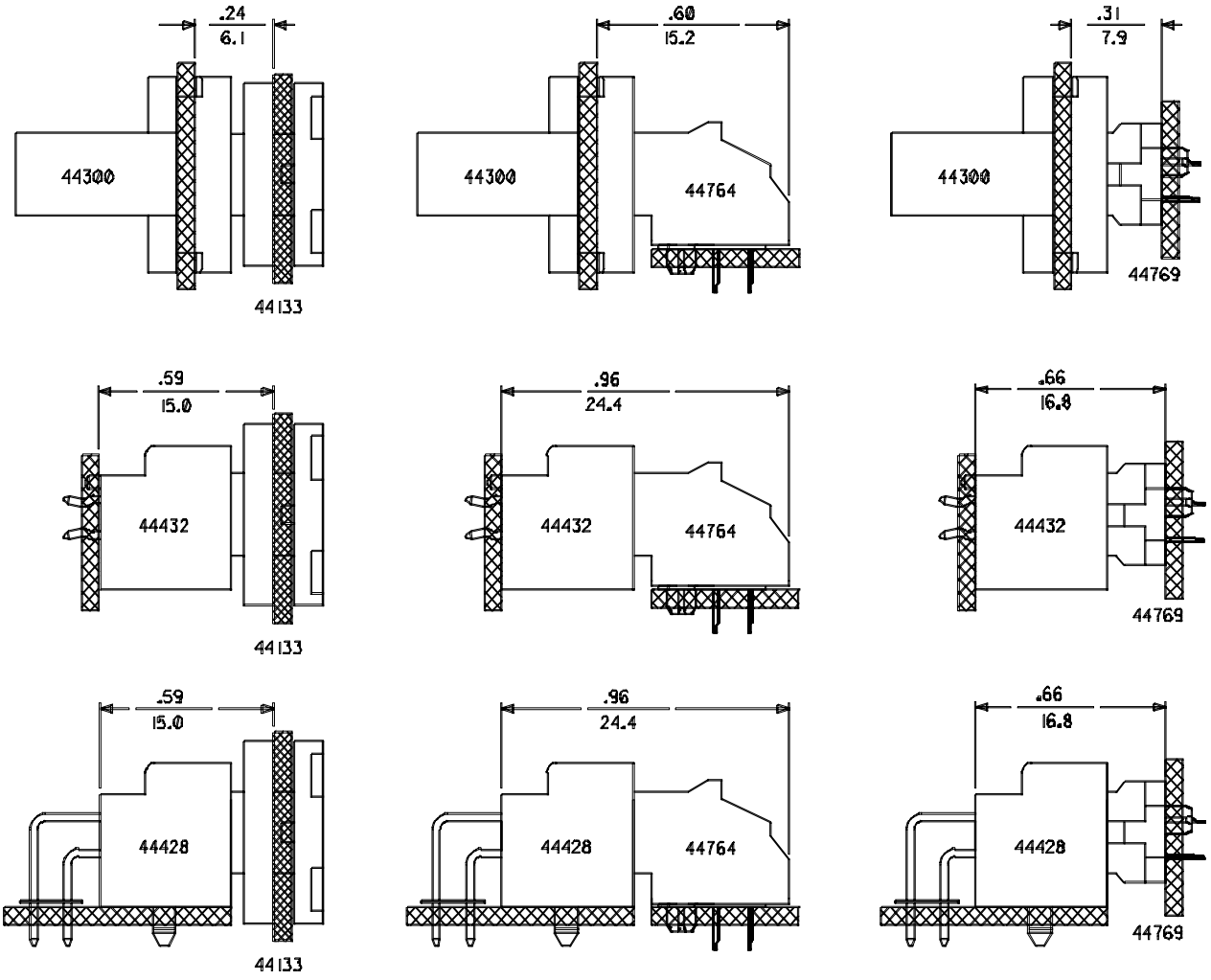
See next sheet

8.0 CONNECTOR ALIGNMENT

8.1 Misalignment applies to "X" and "Y" directions

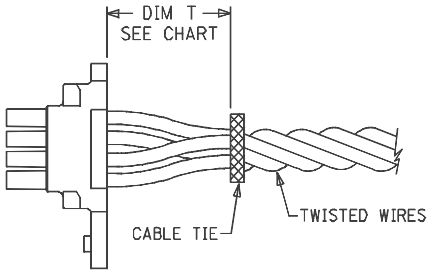


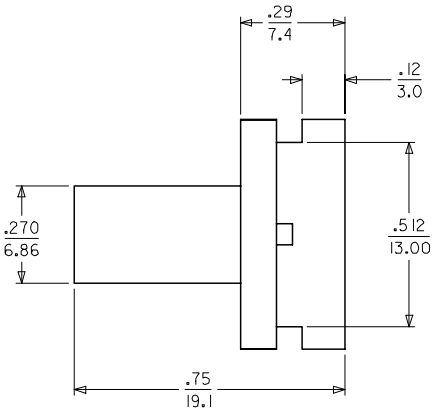
8.2 Mated Dimensions

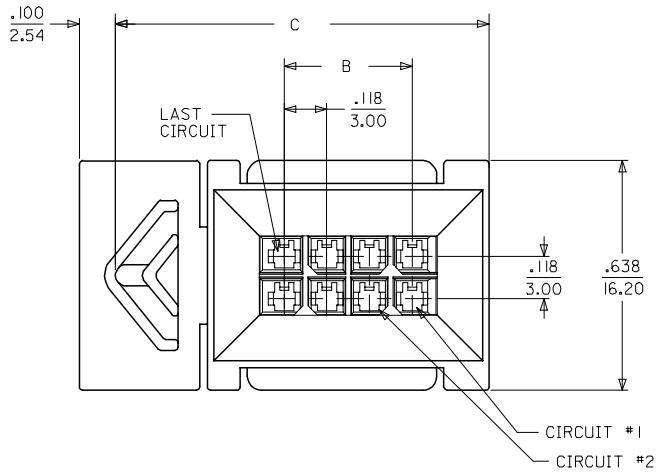


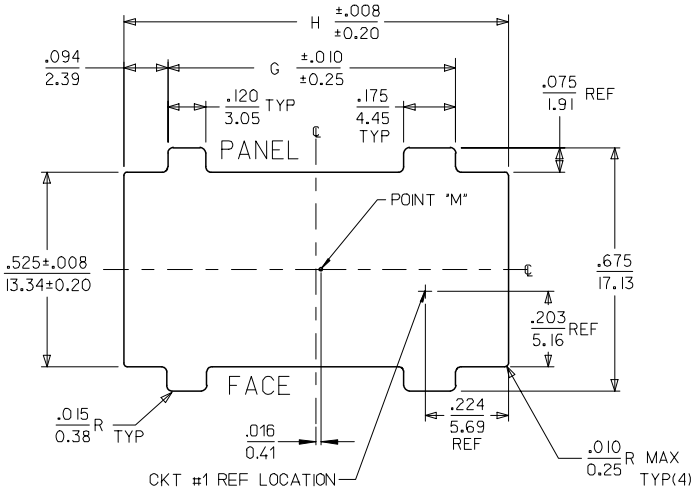
8.3 TIE WRAP AND/OR WIRE TWISTING PLACEMENT

CKT Sizes	Dim T Min.
2-8	.500 (12.70)
10-16	.750 (19.10)
18-24	1.000 (25.40)

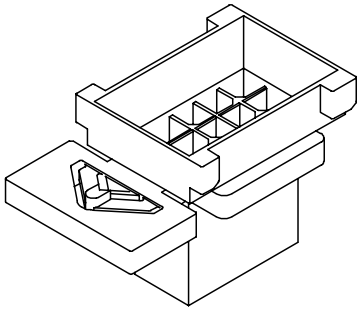


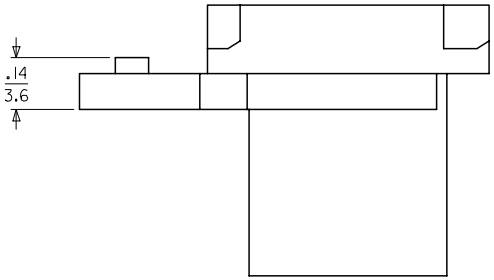


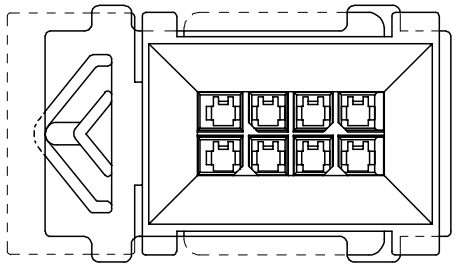




RECOMMENDED PANEL CUTOUT
(SEE NOTE #7 & #8)







PLUG SHOWN MOUNTED IN PANEL

CKT SIZE	MATERIAL NUMBER	DIM "B"	DIM "C"	DIM "G"	DIM "H"	PACKAGING (SEE NOTE 4)
4	44300-0400	.118 / 3.00	.80 / 20.3	.585 / 14.85	.821 / 20.85	BP
6	44300-0600	.236 / 6.00	.92 / 23.3	.703 / 17.85	.939 / 23.85	
8	44300-0800	.354 / 9.00	1.04 / 26.3	.821 / 20.85	1.057 / 26.85	
10	44300-1000	.472 / 12.00	1.16 / 29.3	.939 / 23.85	1.175 / 29.85	
12	44300-1200	.591 / 15.00	1.28 / 32.3	1.057 / 26.85	1.293 / 32.85	
14	44300-1400	.709 / 18.00	1.39 / 35.3	1.175 / 29.85	1.411 / 35.85	TP
16	44300-1600	.827 / 21.00	1.51 / 38.3	1.293 / 32.85	1.530 / 38.85	BP
18	44300-1800	.945 / 24.00	1.63 / 41.3	1.411 / 35.85	1.648 / 41.85	
20	44300-2000	1.063 / 27.00	1.75 / 44.3	1.530 / 38.85	1.766 / 44.85	
22	44300-2200	1.181 / 30.00	1.87 / 47.3	1.648 / 41.85	1.884 / 47.85	
24	44300-2400	1.299 / 33.00	1.98 / 50.3	1.766 / 44.85	2.002 / 50.85	TP

NOTES:
1. MATERIAL:
   UNFILLED POLYESTER (PBT), UL94V-0,
   COLOR: BLACK
2. FINISH: N/A
3. PRODUCT SPECIFICATION: PS-44300-001
4. PACKAGING SPECIFICATION:
   BP - BULK PACKED PER PK-44300-001
   TP - TRAY PACKED PER PK-44300-002
5. THIS PLUG MATES WITH MOLEX BMI RECEPTACLE 44133.
   (MOLEX DRAWING SD-44133-001)
6. THIS PLUG TO BE USED WITH MOLEX MALE CRIMP
   TERMINALS ONLY. (MOLEX DRAWING SD-43031-****)
7. THIS PLUG IS DESIGNED FOR USE WITH .062/1.57 MAX. TO .050/1.27 MINIMUM THICK PANELS.
8. WHEN MATING WITH 44133 SERIES, POINT "M" MUST ALIGN WITH THE PANEL CUT-OUT CENTERLINES
   DEFINED BY MOLEX DRAWING SD-44133-001.
9. HOUSING MAY EXHIBIT A SURFACE IMPERFECTION KNOWN AS "SINK MARKS" UP TO .024/0.60 MAX.
   THIS IS COSMETIC DEFECT AND DOES NOT EFFECT FUNCTION OF THE CONNECTOR.

REVISE PACKAGING
EC NO: UCP2007-2862 2007/05/15
DRWN:MKIPPER 2007/06/01
CHKD:SSOUSEK 2007/06/04
APPR:FSMITH
DESCRIPTION
REV
J1

QUALITY SYMBOLS
▼=0
▽=0

GENERAL TOLERANCES (UNLESS SPECIFIED)

	mm	INCH
4 PLACES	± ---	± ---
3 PLACES	± ---	± .010
2 PLACES	± 0.25	± .014
1 PLACE	± 0.35	± ---
ANGULAR ±1/2°		

DRAFT WHERE APPLICABLE MUST REMAIN WITHIN DIMENSIONS

DIMENSION STYLE: IN/MM
SCALE: 4:1
DESIGN UNITS: METRIC
THIRD ANGLE PROJECTION

DRAWN BY: SOMMER DATE: 1998/11/25
CHECKED BY: SOMMER DATE: 1998/11/25
APPROVED BY: EDGLEY DATE: 1998/11/25

TITLE: MICRO-FIT 3.0 DUAL ROW BMI PANEL MOUNT PLUG

MOLEX INCORPORATED

MATERIAL NO.: SEE CHART
DOCUMENT NO.: SD-44300-001
SHEET NO.: 1 OF 1
SIZE: C