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ELECTRONICS

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Jameco Part Number 793426

FEATURES AND SPECIFICATIONS

Features and Benefits

- Blind mating panel mount receptacle
- For wire-to-wire and wire-to-board applications
- Fully isolated terminals to protect contacts from damage
- Uses standard Mini-Fit series terminals

Reference Information

Product Specification: PS-5556-0002

Packaging: Tray and bag

UL File No.: E29179

CSA File No.: LR19980

TUV License No.: R75142

Mates With: [42404](#), [42440](#), [43759](#), [43810](#), [43879](#), [44068](#) and [44474](#) headers or [42475](#) and [43770](#) plugs

Use With: [5556](#) or [44476](#) HCS terminals

Designed In: Millimeters

Electrical

Current: (Used with 16 AWG)

Circuits	2-3	4-6	7-10	12-24
Amperes-BMI	9	8	7	6
Amperes-BMI with HCS	12	11	10	9

Mechanical

Contact Insertion Force: 1.5kg max.

Contact Retention to Housing: 3.0kg min.

Wire Pull-Out Force: 9.0kg min.

Mating Force: 0.7kg (1.54 lb) max.

Unmating Force: 0.35kg (0.7 lb) min.

Normal Force: 200g min.

Durability: 30 cycles

Physical

Housing: 6/6 nylon, UL 94V-2 or 94V-0

Contact: Brass or Phosphor Bronze

Plating: Tin, select Gold or overall Gold

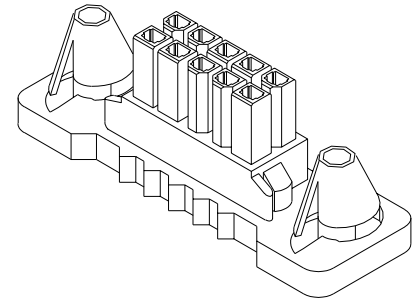
Operating Temperature: -40 to +105°C



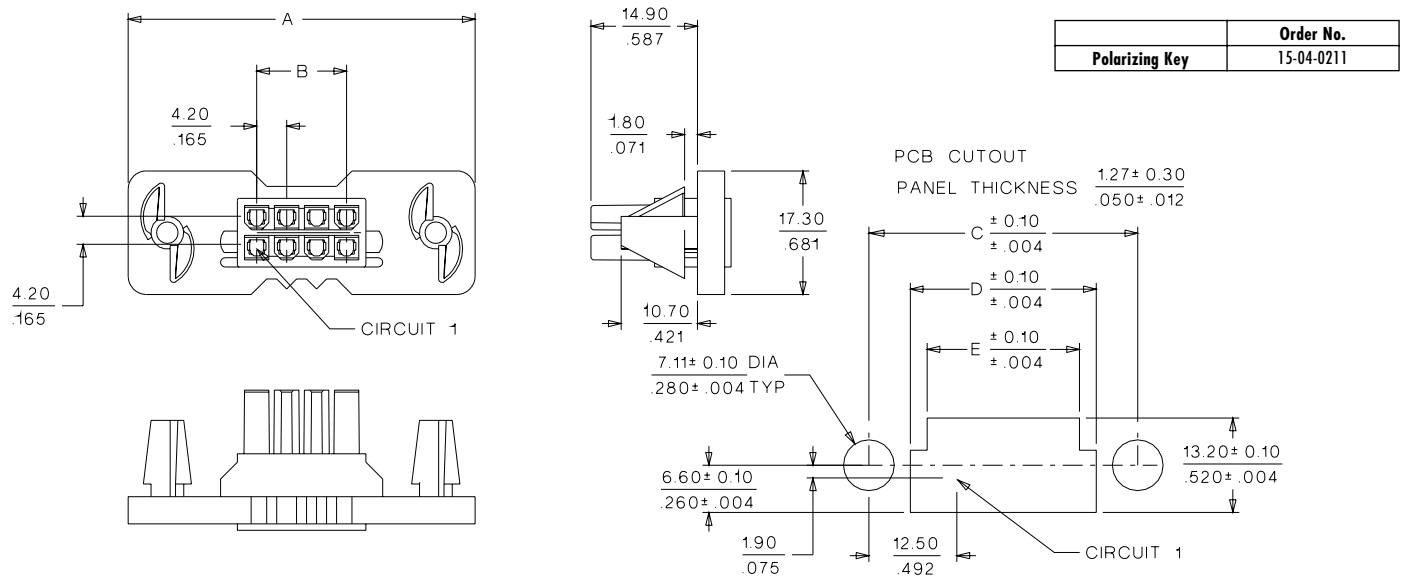
4.20mm (.165") Pitch Mini-Fit, BMI™ Receptacle

42474/43760

Dual Row With Panel Mount Ears



CATALOG DRAWING (FOR REFERENCE ONLY)



ORDERING INFORMATION AND DIMENSIONS

Circuits	Order No.		Dimension				
	94V-2	94V-0	A	B	C	D	E
4	• 15-06-0040	• 15-06-0041	40.20 (1.583)	4.20 (.165)	29.20 (1.150)	17.60 (.693)	12.90 (.508)
6	• 15-06-0060	• 15-06-0061	44.40 (1.748)	8.40 (.331)	33.40 (1.315)	21.80 (.858)	17.10 (.673)
8	• 15-06-0080		48.60 (1.913)	12.60 (.496)	37.60 (1.480)	26.00 (1.023)	21.30 (.838)
10	• 15-06-0100	• 15-06-0101	52.80 (2.078)	16.80 (.661)	41.80 (1.645)	30.20 (1.189)	25.50 (1.004)
14	• 15-06-0140	• 15-06-0141	61.20 (2.409)	25.20 (.992)	50.20 (1.976)	38.60 (1.520)	33.90 (1.335)
18	• 15-06-0180	• 15-06-0181	69.60 (2.740)	33.60 (1.323)	58.60 (2.307)	47.00 (1.850)	42.30 (1.665)
24	• 15-06-0240	• 15-06-0241	82.20 (3.236)	46.20 (1.819)	71.20 (2.803)	59.60 (2.346)	54.90 (2.161)
36	43760-0001		107.40 (4.228)	71.40 (2.811)	96.40 (3.795)	81.50 (3.208)	76.78 (3.023)

• US Standard Product, available through Molex franchised distributors



PRODUCT SPECIFICATION

MINI-FIT BMI

1.0 SCOPE

This Product Specification covers performance requirements for the MINI-FIT BMI 4.20 mm (.165 inch) centerline (pitch) printed circuit board (PCB) connector series with Tin or Gold plating, and The MINI-FIT BMI connector series terminated with 16 to 28 AWG wire using Crimp technology with Tin or Gold plating.

2.0 PRODUCT DESCRIPTION

2.1 PRODUCT NAME AND SERIES NUMBER (S)

<u>PRODUCT NAME</u>	<u>PART NUMBER</u>
Female Crimp Terminal	5556-****
Male Crimp Terminal	5558-****
Receptacle Housing	42474-****
Plug Housing	42475-****
Vertical Header Assembly	42440-****
Right Angle Header Assembly	42404-****
Receptacle Header Assembly	42385-****
Plug Housing	43588-06*1

2.2 DIMENSIONS, MATERIALS, PLATINGS AND MARKINGS

See the appropriate sales drawings for the information on dimensions, materials, platings and markings.

2.3 SAFETY AGENCY APPROVALS

UL File: E29179
CSA Certificate: LR 19980
TUV Certificate: R75142-8

3.0 APPLICABLE DOCUMENTS AND SPECIFICATIONS

See sales drawings and the other sections of this specification for the necessary referenced documents and specifications

4.0 RATINGS

4.1 VOLTAGE

600 Volts AC (RMS) (or 600 Volts DC)

4.2 CURRENT AND APPLICABLE WIRES

Maximum Insulation Diameter and Applicable Wire Gauges	16 AWG: 3.10/. 122 MAXIMUM
	18-24 AWG: 3.10/. 122 MAXIMUM
	22-28 AWG: 1.80/. 071 MAXIMUM

<u>REVISION:</u> D2	<u>EGR/ECN INFORMATION:</u> EC No: UCP2004-2290 DATE: 2004 / 05 / 14	<u>TITLE:</u> PRODUCT SPECIFICATION FOR MINI-FIT BMI CONNECTOR SYSTEM	<u>SHEET No.</u> 1 of 5
<u>DOCUMENT NUMBER:</u> PS-5556-002	<u>CREATED / REVISED BY:</u> BANDURA	<u>CHECKED BY:</u> BANDURA	<u>APPROVED BY:</u> MARGULIS



PRODUCT SPECIFICATION

4.2 CURRENT AND APPLICABLE WIRES (continued)

MAXIMUM CURRENT RATING (Amperes)									
Brass					Phosphor Bronze				
Wire \ Ckt. Size	2 & 3	4 - 6	7 - 10	12 - 24	Wire \ Ckt. Size	2 & 3	4 - 6	7 - 10	12 - 24
AWG #16	9	8	7	6	AWG #16	8	7	6	5
AWG #18	9	8	7	6	AWG #18	8	7	6	5
AWG #20	7	6	5	5	AWG #20	6	5	4	4
AWG #22	5	4	4	4	AWG #22	4	3	3	3
AWG #24	4	3	3	3	AWG #24	3	2	2	2
AWG #26	3	2	2	2	AWG #26	2	1	1	1
AWG #28	2	1	1	1	AWG #28	1	1	1	1

4.3 TEMPERATURE

Operating: * - 40°C to + 105°C

Nonoperating: - 40°C to + 105°C

**Including 30°C terminal temperature at rated current*

5.0 PERFORMANCE

5.1 ELECTRICAL REQUIREMENTS

ITEM	DESCRIPTION	TEST CONDITION	REQUIREMENT
1	Contact Resistance (Low Level)	Mate connectors: apply a maximum voltage of 20 mV and a current of 100 mA. Wire resistance shall be removed from the measured value.	10 milliohms MAXIMUM [initial]
2	Contact Resistance @ Rated Current	Mate connectors: apply a maximum voltage of 20 mV at rated current.	10 milliohms MAXIMUM [initial]
3	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]
4	Insulation Resistance	Mate connectors: apply a voltage of 500 VDC between adjacent terminals and between terminals to ground.	1000 Megohms MINIMUM

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PRODUCT SPECIFICATION

5.1 ELECTRICAL REQUIREMENTS (continued)

ITEM	DESCRIPTION	TEST CONDITION	REQUIREMENT
5	Dielectric Withstanding Voltage	Mate connectors: apply a voltage of 1500 VAC for 1 minute between adjacent terminals and between terminals to ground.	No breakdown. Current leakage < 5 mA
6	Temperature Rise (via Current Cycling)	Mate connectors. Measure the temperature rise at the rated current after 96 hours, during current cycling (45 minutes ON and 15 minutes OFF per hour) for 240 hours, and after final 96-hour steady state.	Temperature rise: +30°C MAXIMUM

5.2 MECHANICAL REQUIREMENTS

ITEM	DESCRIPTION	TEST CONDITION	REQUIREMENT
1	Terminal Mate and Unmate Forces	Insert and withdraw terminal (male to female) at a rate of 25 ± 6 mm (1 ± ¼ inch) per minute.	14.7 N (3.30 lbf) MAXIMUM insertion force & 1.0 N (0.02 lbf) MINIMUM withdrawal force
2	Crimp 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.	30 N (6.74 lbf) MINIMUM retention force
3	Terminal Pin to Header Retention Force	Axial pullout force on the terminal in the housing at a rate of 25 ± 6 mm (1 ± ¼ inch) per minute.	4.45 N (1.00 lbf) MINIMUM retention force
4	Durability	Mate connectors up to 30 cycles at a maximum rate of 10 cycles per minute prior to Environmental Tests.	20 milliohms MAXIMUM
5	Vibration (Random)	Mate connectors and vibrate per EIA 364-28, test condition VII.	10 milliohms MAXIMUM (change from initial) & Discontinuity < 1 microsecond
6	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).	20 milliohms MAXIMUM & Discontinuity < 1 microsecond

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PRODUCT SPECIFICATION

5.2 MECHANICAL REQUIREMENTS (continued)

7	Wire Pullout Force (Axial)	Apply an axial pullout force on the wire at a rate of 25 ± 6 mm (1 ± ¼ inch).	16 Awg = 88.0 N (19.8 lbf) Min. 18 Awg = 88.0 N (19.8 lbf) Min. 20 Awg = 59.0 N (13.3 lbf) Min. 22 Awg = 39.0 N (8.78 lbf) Min. 24 Awg = 29.0 N (6.52 lbf) Min. 26 Awg = 19.0 N (4.27 lbf) Min. 28 Awg = 9.80 N (2.20 lbf) Min.
8	Crimp Terminal Insertion Force (into Housing)	Apply an axial insertion force on the terminal at a rate of 25 ± 6 mm (1 ± ¼ inch).	15.0 N (3.37 lbf) MAXIMUM insertion force
9	Normal Force	Apply a perpendicular force.	0.49 N (50 grams) MINIMUM [Gold (noble) plating] OR 1.47 N (150 grams) MINIMUM [Tin (non-noble) plating]
10	PCB Engagement and Separation Forces	Engage and separate a connector at a rate of 25 ± 6 mm (1 ± ¼ inch) per minute. (Applies to parts with PCB retention features only)	49.0 N (11.0 lbf) MAXIMUM insertion force & 10.0 N (2.24 lbf) MINIMUM withdrawal force
11	Panel Insertion and Withdrawal Forces	Insert and withdraw a connector at a rate of 25 ± 6 mm (1 ± ¼ inch) per minute. (Applies to parts with panel retention features only)	225 N (50.7 lbf) MAXIMUM insertion force & 157 N (35.3 lbf) MINIMUM withdrawal force

5.3 ENVIRONMENTAL REQUIREMENTS

ITEM	DESCRIPTION	TEST CONDITION	REQUIREMENT
1	Thermal Shock	Mate connectors: expose for 5 cycles between temperatures -55 and 105°C; dwell 0.5 hours at each temperature.	20 milliohms MAXIMUM Visual: No Damage Dielectric Strength per 5.1.5 Insulation Resistance per 5.1.4
2	Thermal Aging	Mate connectors; expose to: 96 hours at 105 ± 2°C	20 milliohms MAXIMUM & Visual: No Damage
3	Humidity (Steady State)	Mate connectors: expose to a temperature of 60 ± 2°C with a relative humidity of 90-95% for 96 hours.	20 milliohms MAXIMUM Dielectric Strength per 5.1.5 Insulation Resistance per 5.1.4 Visual: No Damage

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PRODUCT SPECIFICATION

5.3 ENVIRONMENTAL REQUIREMENTS (continued)

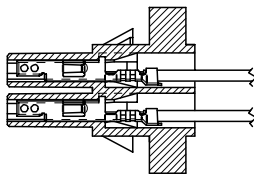
ITEM	DESCRIPTION	TEST CONDITION	REQUIREMENT
4	Solderability	Per SMES-152	Solder coverage: 95% MINIMUM (per SMES-152)
5	Solder Resistance	Dip connector terminal tails in solder: Solder Duration: 5 ± 0.5 seconds; Solder Temperature: $235 \pm 5^\circ\text{C}$	Visual: No Damage to insulator material
6	Cold Resistance	Mate connectors: Duration: 96 hours; Temperature: $-40 \pm 3^\circ\text{C}$	20 milliohms MAXIMUM Visual: No Damage
7	Corrosive Atmosphere: Sulfur Dioxide Gas (SO₂)	Mate connectors: Duration: 24 hours exposure. Atmosphere: 50 parts per million (ppm) SO ₂ Gas. Temperature: $40 \pm 3^\circ\text{C}$	20 milliohms MAXIMUM Visual: No damage

6.0 PACKAGING

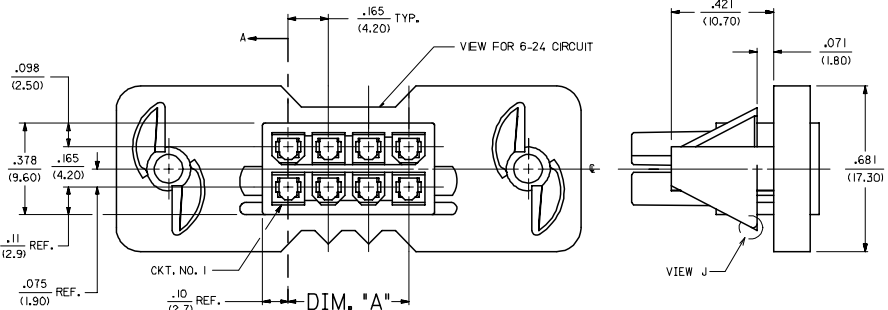
Parts shall be packaged to protect against damage during handling, transit and storage.

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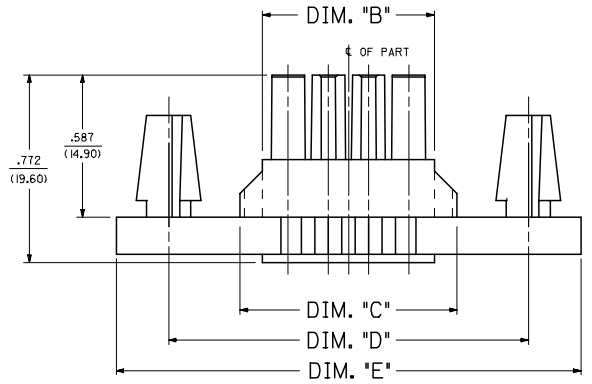
20 19 18 17 16 15 14 13 12 11 10 9 8 7 6 5 4 3 2 1



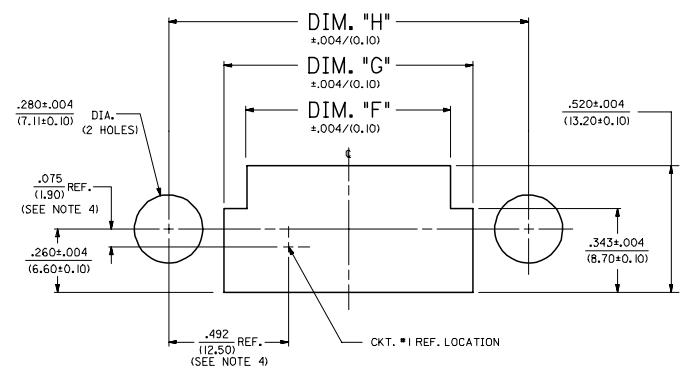
SECTION "A-A"
TERMINAL ORIENTATION



THIS AREA CAN BE SHARP TO .025/(0.64) MAXIMUM RADIUS



2-8 & 12-24 CIRCUIT HEADER
(SEE SHEET 2 FOR 10 CIRCUIT HEADER DESIGN)

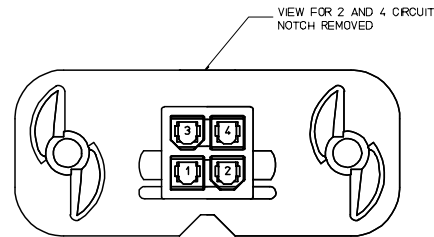


RECOMMENDED PANEL CUT-OUT FOR .050±0.02/(1.27±0.30) THICK PANEL
(SEE NOTE 11)

CKT. SIZE	DIM. "A"	DIM. "B"	DIM. "C"	DIM. "D"	DIM. "E"	DIM. "F"	DIM. "G"	DIM. "H"
2	N/A	.213 (5.40)	.398 (10.10)	.984 (25.00)	1.417 (36.00)	.343 (8.70)	.528 (13.40)	.984 (25.00)
4	N/A	.318 (8.10)	.563 (14.30)	1.150 (29.20)	1.583 (40.20)	.509 (12.90)	.693 (17.60)	1.150 (29.20)
6	.331 (8.40)	.543 (13.80)	.728 (18.50)	1.316 (33.40)	1.748 (44.40)	.673 (17.10)	.858 (21.80)	1.316 (33.40)
8	.496 (12.60)	.709 (18.00)	.894 (22.70)	1.480 (37.60)	1.913 (48.60)	.813 (20.80)	1.024 (26.00)	1.480 (37.60)
10	.661 (16.80)	.874 (22.20)	1.059 (26.90)	1.645 (41.80)	2.078 (52.80)	1.004 (25.50)	1.189 (30.20)	1.645 (41.80)
12	.827 (21.00)	1.039 (26.40)	1.224 (31.10)	1.811 (46.00)	2.244 (57.00)	1.169 (29.70)	1.354 (34.40)	1.811 (46.00)
14	.992 (25.20)	1.205 (30.60)	1.390 (35.30)	1.976 (50.20)	2.409 (61.20)	1.335 (33.90)	1.520 (38.60)	1.976 (50.20)
16	1.157 (29.40)	1.370 (34.80)	1.555 (39.50)	2.142 (54.40)	2.575 (65.40)	1.500 (38.10)	1.685 (42.80)	2.142 (54.40)
18	1.323 (33.60)	1.535 (39.00)	1.720 (43.70)	2.307 (58.60)	2.740 (69.60)	1.665 (42.30)	1.850 (47.00)	2.307 (58.60)
20	1.488 (37.80)	1.701 (43.20)	1.886 (47.90)	2.472 (62.80)	2.906 (73.80)	1.831 (46.50)	2.016 (51.20)	2.472 (62.80)
22	1.653 (42.00)	1.866 (47.40)	2.051 (52.10)	2.638 (67.00)	3.071 (78.00)	1.996 (50.70)	2.181 (55.40)	2.638 (67.00)
24	1.819 (46.20)	2.031 (51.60)	2.217 (56.30)	2.803 (71.20)	3.236 (82.20)	2.161 (54.90)	2.346 (59.60)	2.803 (71.20)

NOTES:

- MATERIAL:
 *1 = NYLON 6/6, 94V-2, COLOR: NATURAL.
 *2 = NYLON 6/6, 94V-0, COLOR: NATURAL.
 *3 = NYLON 6/6, 94V-2, COLOR: BLACK.
 *4 = NYLON 6/6, 94V-0, COLOR: BLACK.
- PART IS DESIGNED IN METRIC.
- PART TO BE USED WITH MOLEX FEMALE TERMINAL #5556.
- THIS DIMENSION TO BE USED FOR ALIGNMENT OF THE MATING CONNECTOR.
- THIS CONNECTOR ALLOWS FOR .050/(1.27) MAX. MISALIGNMENT IN ANY DIRECTION.
- A MAXIMUM TOLERANCE OF .050/(1.27) ALLOWS FOR 2 POINTS OF ELECTRICAL CONTACT. A MAXIMUM TOLERANCE OF .020/(.51) ALLOWS FOR 4 POINTS OF CONTACT.
- PART MATES WITH MINI-FIT B.M.I. PLUG #42475, AND HEADERS 42404, 42440, 43810, 44068 & 43879.
- PRODUCT SPECIFICATION: PS-5556-002
- CONNECTOR ASSEMBLIES ARE NOT TO BE MATED OR UNMATED WHILE CIRCUITS ARE LIVE.
- THIS PART IS INTENDED FOR ONE PANEL INSERTION ONLY; REMOVAL AND RE-INSERTION CAN DAMAGE THE MOUNTING SPIRALS.
- PANEL SHOULD BE PUNCHED IN THE DIRECTION OF CONNECTOR INSERTION.
- BOTH SPIRALS SHOULD BE INSERTED INTO THE PANEL AT THE SAME TIME; ROCKING THE PART INTO PLACE MAY CAUSE SPIRAL DAMAGE.
- THIS PART IS NOT INTENDED TO PROVIDE ANY ALIGNMENT OF CUSTOMER COMPONENTS OR MODULES, SUCH AS POWER SUPPLIES AND CHASSIS.
- IF THIS PRODUCT IS STORED IN AN ENVIRONMENT WITH A RELATIVE HUMIDITY OF LESS THAN 50%, MOISTURE MUST BE ADDED AS PER THE FOLLOWING:
 A) ADD 0.4 oz. OF DEIONIZED WATER PER 1.0 lb. OF PRODUCT
 B) RESEAL PLASTIC BAG AFTER MOISTURIZATION



LEGEND:
 42474 - ** * 1
 BASE NUMBER
 CIRCUIT SIZE (02-24)
 MATERIAL (SEE NOTE 1.)

ADDED 4 CKT VIEW EC NO: UCP2006-0365 2005/08/15 DR: WINDUNNE 2005/08/15 CHK: KOPOLAR 2005/08/16 APPR: J.OMERCI 2005/08/16	QUALITY SYMBOLS ▽=0 ▽=0	GENERAL TOLERANCES (UNLESS SPECIFIED) mm INCH 4 PLACES ±.015 ±.015 3 PLACES ±.030 ±.015 2 PLACES ±.038 ±.015 1 PLACE ±.038 ±.015 ANGULAR ±1/2°	DIMENSION STYLE IN/MM DRAWN BY DATE GEP 8/24/89 CHECKED BY DATE R.J.F. 8/24/89 APPROVED BY DATE RAS 8/2/89	SCALE 4:1 DESIGN UNITS METRIC THIRD ANGLE PROJECTION	TITLE PANEL-MOUNT RECEPTACLE BLIND MATE MINI-FIT JR. SERIES MOLEX INCORPORATED	MATERIAL NO. SD-42474-****	DOCUMENT NO. SHEET NO. 1 OF 2
	DRAFT WHERE APPLICABLE MUST REMAIN WITHIN DIMENSIONS		SEE SHEET 2		THIS DRAWING CONTAINS INFORMATION THAT IS PROPRIETARY TO MOLEX INCORPORATED AND SHOULD NOT BE USED WITHOUT WRITTEN PERMISSION		

