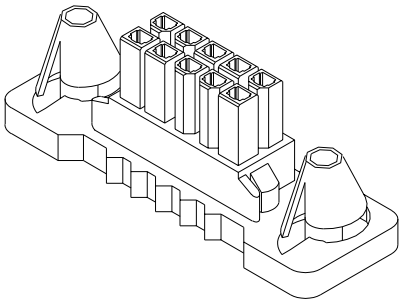
Jameco Part Number 741351

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

42474/43760

Dual Row With Panel Mount Ears



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

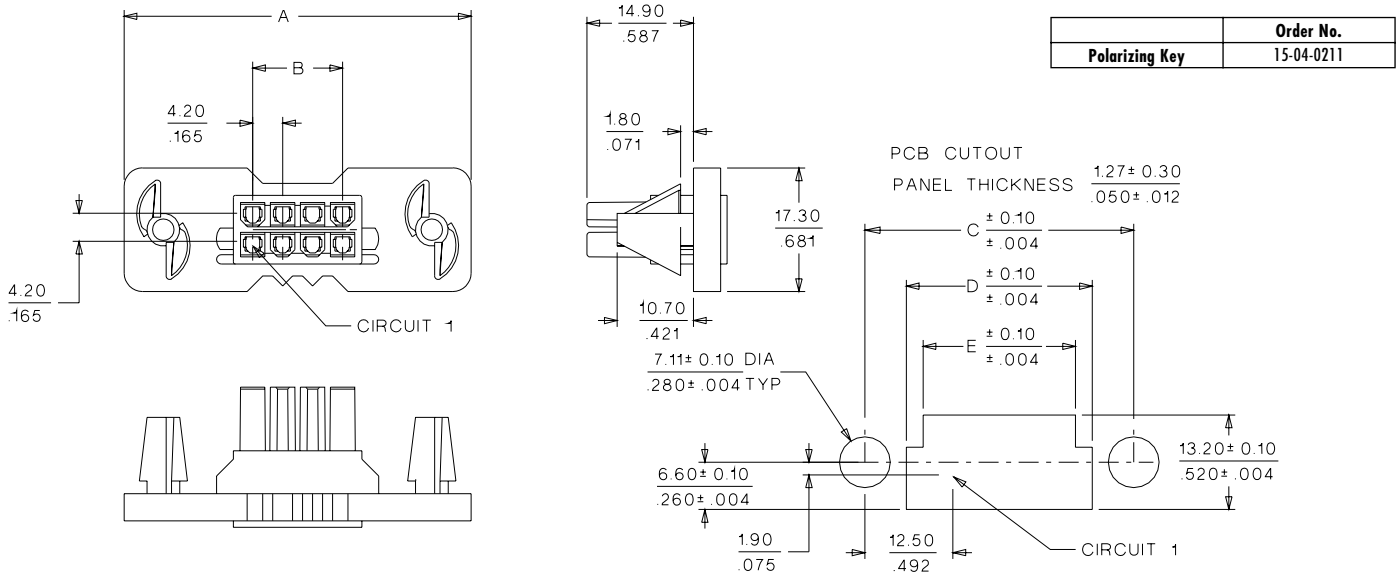
Mechanical

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

CATALOG DRAWING (FOR REFERENCE ONLY)



	Order No.
Polarizing Key	15-04-0211

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 HCS
(High Current System)

1.0 SCOPE

This Product Specification covers performance requirements for the MINI-FIT HCS 4.20 mm (.165 inch) centerline (pitch) printed circuit board (PCB) connector series with Tin or Gold plating, and The MINI-FIT HCS 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)

PRODUCT NAME	PART NUMBER
Female Crimp Terminal (Mini-Fit HCS)	44476-****
Male Crimp Terminal (Mini-Fit HCS)	44478-****
Receptacle Housing (Mini-Fit Jr.)	5557-****
Receptacle Housing (Mini-Fit PTA)	30067-****
Receptacle Housing (Mini-Fit BMI)	42474-****
Receptacle Header Assembly (Mini-Fit BMI)	44475-****
Plug Housing (Mini-Fit Jr.)	5559-****
Plug Housing (Mini-Fit TPA)	30068-****
Plug Housing (Mini-Fit BMI)	42475-****
Vertical Header Assembly (Mini-Fit HCS)	44472-****
Vertical Header Assembly (Mini-Fit TPA)	44473-****
Vertical Header Assembly (Mini-Fit (BMI)	44474-****
Vertical Header Assembly (Mini-Fit SMC)	44068-****
Right Angle Header Assembly (Mini-Fit Jr.)	5569-****
Right Angle Header Assembly (Mini-Fit TPA)	30070-****
Right Angle Header Assembly (Mini-Fit BMI)	42404-****
Right Angle Header Assembly (Mini-Fit SMC)	43810-****

Mating the Mini-Fit receptacles to Mini-Fit plugs or Mini-Fit headers using 44476 or 44478 terminals allow it to qualify as a Mini-Fit HCS system.

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

NGS

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

MAXIMUM CURRENT RATING (Amperes)				
Ckt. Size / Wire	2 & 3	4 - 6	7 - 10	12 - 24
AWG #16	12	11	10	9
AWG #18	12	11	10	9
AWG #20	9	9	8	8

4.3 TEMPERATURE

Operating: * - 40°C to + 105°C

Nonoperating: - 40°C to + 105°C

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

4.0 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

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	**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	**Durability**	Mate connectors up to 30 cycles at a maximum rate of 10 cycles per minute prior to Environmental Tests.	20 milliohms MAXIMUM
4	**Vibration (Random)**	Mate connectors and vibrate per EIA 364-28, test condition VII.	10 milliohms MAXIMUM (change from initial) & Discontinuity < 1 microsecond
5	**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

6	**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.

5.2 MECHANICAL REQUIREMENTS (continued)

7	**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
8	**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]
9	**PCB Engagement and Separation Forces**	Engage and separate a connector at a rate of 25 ± 6 mm (1 ± ¼ inch) per minute.	49.0 N (11.0 lbf) MAXIMUM insertion force & 10.0 N (2.24 lbf) MINIMUM withdrawal force
10	**Panel Insertion and Withdrawal Forces**	Insert and withdraw a connector at a rate of 25 ± 6 mm (1 ± ¼ inch) per minute.	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

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 ± 5°C	Visual: No Damage to insulator material

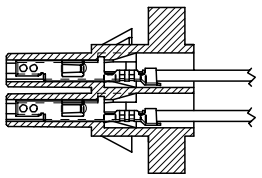
5.3 ENVIRONMENTAL REQUIREMENTS (continued)

ITEM	DESCRIPTION	TEST CONDITION	REQUIREMENT
6	**Cold Resistance**	Mate connectors: Duration: 96 hours; Temperature: -40 ± 3°C	20 milliohms MAXIMUM Visual: No Damage
7	**Corrosive Atmosphere: Sulfur Dioxide Gas (SO_2)**	Mate connectors: Duration: 24 hours exposure. Atmosphere: 50 parts per million (ppm) SO_2 Gas. Temperature: 40 ± 3°C	20 milliohms MAXIMUM Visual: No damage

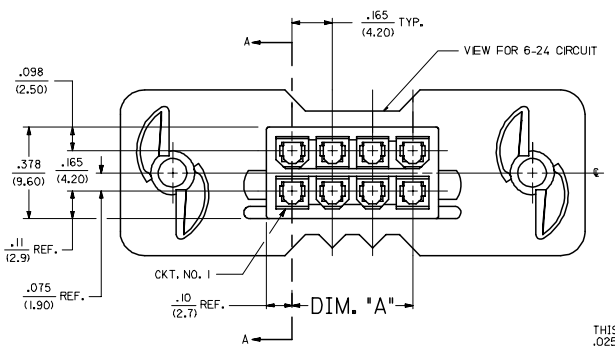
5.0 PACKAGING

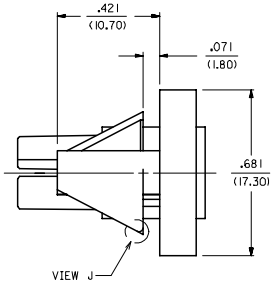
Parts shall be packaged to protect against damage during handling, transit and storage.

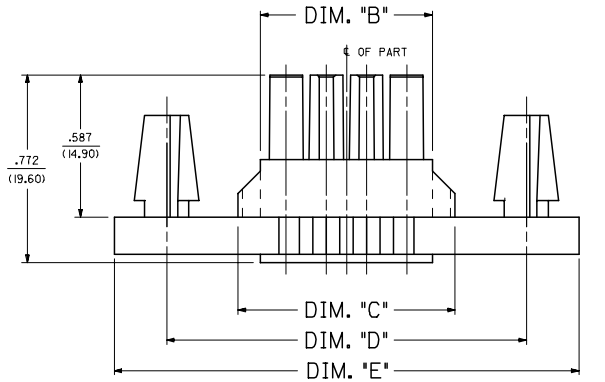
CKT. SIZE	DIM. "A"	DIM. "B"	DIM. "C"	DIM. "D"	DIM. "E"	DIM. "F"	DIM. "G"	DIM. "H"
2	N/A	.213 (5.40)	.398 (10.10)	.984 (25.00)	1.417 (36.00)	.343 (8.70)	.528 (13.40)	.984 (25.00)
4	.165 (4.20)	.378 (9.60)	.563 (14.30)	1.150 (29.20)	1.583 (40.20)	.508 (12.90)	.693 (17.60)	1.150 (29.20)
6	.331 (8.40)	.543 (13.80)	.728 (18.50)	1.315 (33.40)	1.748 (44.40)	.673 (17.10)	.858 (21.80)	1.315 (33.40)
8	.496 (12.60)	.709 (18.00)	.894 (22.70)	1.480 (37.60)	1.913 (48.60)	.839 (21.30)	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)



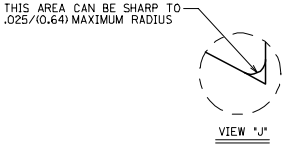
SECTION "A-A"
TERMINAL ORIENTATION

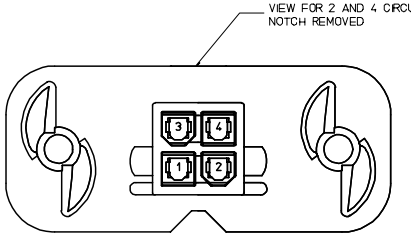


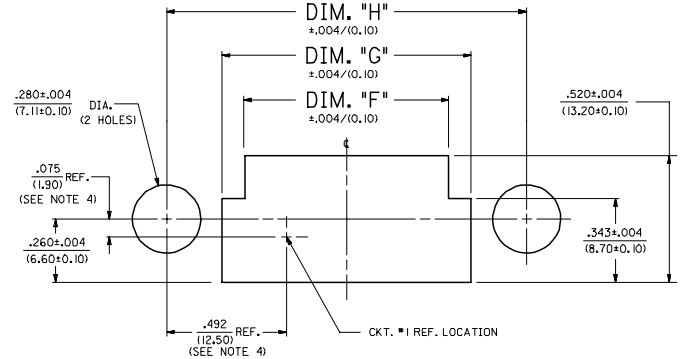




2-8 & 12-24 CIRCUIT HEADER
(SEE SHEET 2 FOR 10 CIRCUIT HEADER DESIGN)







RECOMMENDED PANEL CUT-OUT FOR .050±.012/(1.27±0.30) THICK PANEL
(SEE NOTE 11)

NOTES:

1. 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.
2. PART IS DESIGNED IN METRIC.
3. PART TO BE USED WITH MOLEX FEMALE TERMINAL #5556.
4. THIS DIMENSION TO BE USED FOR ALIGNMENT OF THE MATING CONNECTOR.
5. THIS CONNECTOR ALLOWS FOR .050/(1.27) MAX. MISALIGNMENT IN ANY DIRECTION.
6. 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.
7. PART MATES WITH MINI-FIT B.M.I. PLUG #42475, AND HEADERS 42404, 42440, 43810, 44068 & 43879.
8. PRODUCT SPECIFICATION: PS-5556-002
9. CONNECTOR ASSEMBLIES ARE NOT TO BE MATED OR UNMATED WHILE CIRCUITS ARE LIVE.
10. THIS PART IS INTENDED FOR ONE PANEL INSERTION ONLY. REMOVAL AND RE-INSERTION CAN DAMAGE THE MOUNTING SPIRALS.
11. PANEL SHOULD BE PUNCHED IN THE DIRECTION OF CONNECTOR INSERTION.
12. BOTH SPIRALS SHOULD BE INSERTED INTO THE PANEL AT THE SAME TIME. ROCKING THE PART INTO PLACE MAY CAUSE SPIRAL DAMAGE.
13. THIS PART IS NOT INTENDED TO PROVIDE ANY ALIGNMENT OF CUSTOMER COMPONENTS OR MODULES, SUCH AS POWER SUPPLIES AND CHASSIS.
14. 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.)

REV	DESCRIPTION	DRWN	CHKD	APPR.	ECN
0	ADDED 4 CKT VIEW	NOUNE	GPOLGAR	JCOMERCI	UCP2006-0365
		2005/08/15	2005/08/15	2005/08/16	

QUALITY SYMBOLS
▼=0
Ⓒ=0

GENERAL TOLERANCES (UNLESS SPECIFIED)

	mm	INCH
4 PLACES	± ---	±.---
3 PLACES	± ---	±.015
2 PLACES	± 0.38	±.---
1 PLACE	± ---	±.---
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 / DATE	GEP 8/24/89
CHECKED BY / DATE	RJF 8/24/89
APPROVED BY / DATE	RAS 8/2/89
TITLE	PANEL-MOUNT RECEPTACLE BLIND MATE MINI-FIT JR. SERIES
	MOLEX INCORPORATED
MATERIAL NO.	SEE SHEET 2
DOCUMENT NO.	SD-42474-****
SHEET NO.	1 OF 2
SIZE	D

2	L8
1	0

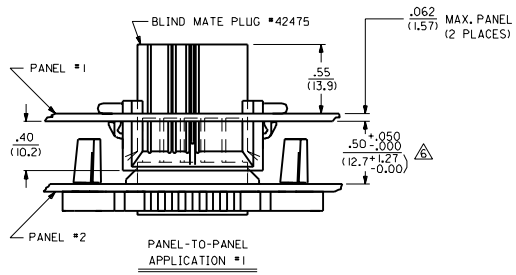
42474

PART NUMBER	ENG. NUMBER	CKT. SIZE	MATERIAL (SEE NOTE 1.)
NOT TOOLED	42474-0211	2	94V-2
15-06-0040	42474-0411	4	94V-2
15-06-0060	42474-0611	6	94V-2
15-06-0080	42474-0811	8	94V-2
15-06-0100	42474-1011	10	94V-2
NOT TOOLED	42474-1211	12	94V-2
15-06-0140	42474-1411	14	94V-2
NOT TOOLED	42474-1611	16	94V-2
15-06-0180	42474-1811	18	94V-2
NOT TOOLED	42474-2011	20	94V-2
NOT TOOLED	42474-2211	22	94V-2
15-06-0240	42474-2411	24	94V-2

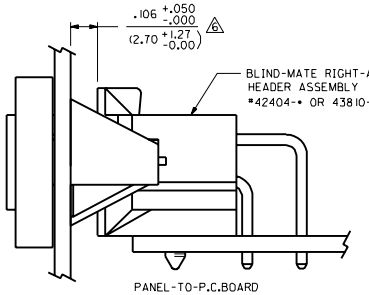
PART NUMBER	ENG. NUMBER	CKT. SIZE	MATERIAL (SEE NOTE 1.)
NOT TOOLED	42474-0221	2	94V-0
15-06-0041	42474-0421	4	94V-0
15-06-0061	42474-0621	6	94V-0
NOT TOOLED	42474-0821	8	94V-0
15-06-0101	42474-1021	10	94V-0
NOT TOOLED	42474-1221	12	94V-0
15-06-0141	42474-1421	14	94V-0
NOT TOOLED	42474-1621	16	94V-0
15-06-0181	42474-1821	18	94V-0
NOT TOOLED	42474-2021	20	94V-0
NOT TOOLED	42474-2221	22	94V-0
15-06-0241	42474-2421	24	94V-0

ITEM NUMBER	CKT. SIZE	MATERIAL (SEE NOTE 1.)
NOT TOOLED	2	94V-2
42474-0431	4	94V-2
42474-0631	6	94V-2
42474-0831	8	94V-2
42474-1031	10	94V-2
NOT TOOLED	12	94V-2
42474-1431	14	94V-2
NOT TOOLED	16	94V-2
42474-1831	18	94V-2
NOT TOOLED	20	94V-2
NOT TOOLED	22	94V-2
42474-2431	24	94V-2

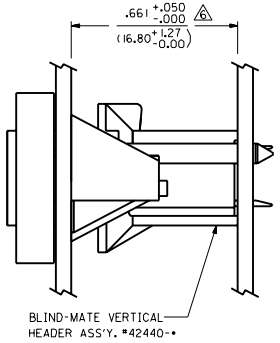
ITEM NUMBER	CKT. SIZE	MATERIAL (SEE NOTE 1.)
NOT TOOLED	2	94V-0
42474-0441	4	94V-0
42474-0641	6	94V-0
NOT TOOLED	8	94V-0
42474-1041	10	94V-0
NOT TOOLED	12	94V-0
42474-1441	14	94V-0
NOT TOOLED	16	94V-0
42474-1841	18	94V-0
NOT TOOLED	20	94V-0
NOT TOOLED	22	94V-0
42474-2441	24	94V-0



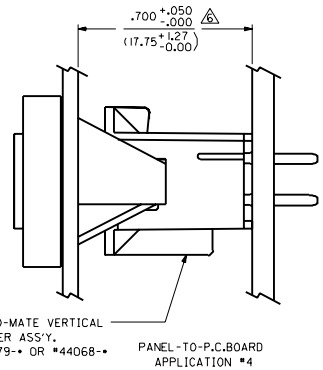
PANEL-TO-PANEL APPLICATION #1



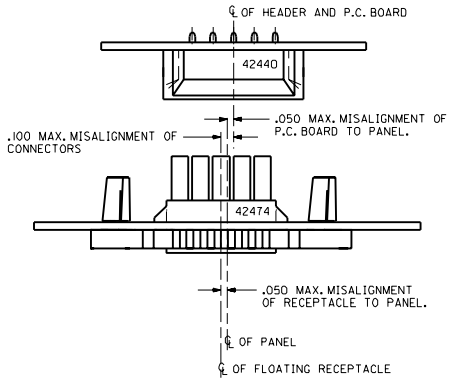
PANEL-TO-P.C.BOARD APPLICATION #3



PANEL-TO-P.C.BOARD APPLICATION #2



PANEL-TO-P.C.BOARD APPLICATION #4



ALIGNMENT TOLERANCES FOR .050 MAX. BOARD-TO-PANEL MISALIGNMENT (±.050 RECEPTACLE FLOAT)

LTR.	REVISIONS	LTR.	REVISIONS
		L8	SEE SHEET #1
		L7	SEE SHEET #1
		L6	SEE SHEET #1
		L5	SEE SHEET #1

DIMENSIONS SHOWN (METRIC) INCH
UNLESS OTHERWISE SPECIFIED TOLERANCES: ANGULAR ± 5°

	INCH	METRIC
3 PLACE	± ---	---
2 PLACE	± ---	± ---
1 PLACE	---	± ---

DRAFT WHERE APPLICABLE MUST REMAIN WITHIN DIMENSIONS

DRWG. BY LEM | CHK'D. BY MB
APP'D. BY RE | SCALE :

▽ = 0 ▼ = 0 REVISE ONLY ON CAD SYSTEM

TITLE: PANEL-MOUNT RECEPTACLE, BLIND MATE, MINI-FIT SERIES

MOLEX INCORPORATED LISLE,ILL. 60532 U.S.A. | SHEET NO. 2 | DATE 99/03/24

PART NO. SEE CHART | DRWG. NO. SD-42474-••••

FILE NAME S42474X1.DGN

DIV. CP | SIZE C

42474