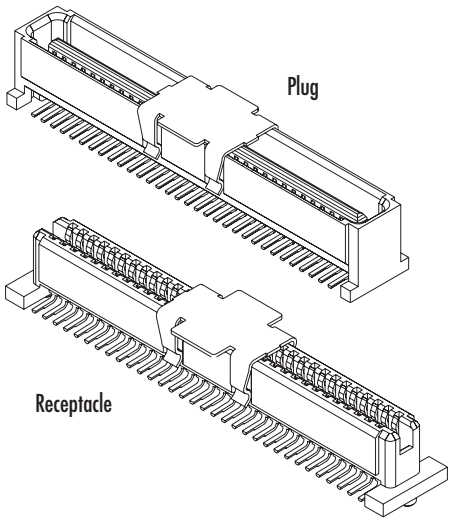
Jameco Part Number 1933742

1.00mm (.039") Mezzanine IEEE 1386 Board-to-Board Plug/Receptacle

71436/71439
Dual Row, SMT Vertical Stacking



Features and Benefits
- Mated heights: 8, 9, 10, 11, 12, 13, 14 and 15mm
- Size 64 circuits
- Leaf-style design protects pins
- Low insertion force
- For use in combinations of 1 to 4 mated pairs
- High-temperature LCP housing for use with lead-free processing temps

Reference Information
Product Specification: PS-71436-9999
Packaging: Tube or tape and reel
UL File No.: E29179
Designed In: Millimeters

Electrical
Voltage: 100V
Current: 1.0A
Contact Resistance: 30 milliohms max.
Dielectric Withstanding Voltage: 250V
Insulation Resistance: 1000 Megohms min.

Mechanical
Contact Retention to Housing: 0.4kgf min.
Mating Force: 50g max. per contact
Unmating Force: 25g min. per contact

Physical
Housing: Glass-filled LCP, UL 94V-0
Contact: Phosphor Bronze
Plating: 30µ" Gold min.
Operating Temperature: -55 to +85˚C

Circuits	Mated Stack Height	Pegs	Packaging	Order No.		Lead-free
				Plug	Receptacle	
64	8.00mm (.315")	Yes	Tape and Reel	71436-0464	71439-0464	Yes
			Tube	71436-0164	71439-0164	
		No	Tape and Reel	71436-0864	71439-0864	
			Tube	71436-0564	Contact Molex	
	9.00mm (.354")	Yes	Tape and Reel	71436-1464	71439-0464	
			Tube	71436-1164	71439-0164	
		No	Tape and Reel	71436-1864	71439-0864	
			Tube	71436-1564	Contact Molex	
	10.00mm (.394")	Yes	Tape and Reel	71436-2464	71439-0464	
			Tube	71436-2164	71439-0164	
		No	Tape and Reel	71436-2864	71439-0864	
			Tube	71436-2564	Contact Molex	
	11.00mm (.433")	Yes	Tape and Reel	71436-1464	71439-1464	
			Tube	71436-1164	71439-1164	
		No	Tape and Reel	71436-1864	71439-1864	
			Tube	71436-1564	71439-1564	
	12.00mm (.472")	Yes	Tape and Reel	71436-2464	71439-1464	
			Tube	71436-2164	71439-1164	
		No	Tape and Reel	71436-2864	71439-1864	
			Tube	71436-2564	71439-1564	
	13.00mm (.512")	Yes	Tape and Reel	71436-2464	71439-2464	
			Tube	71436-2164	71439-2164	
		No	Tape and Reel	71436-2864	71439-2864	
			Tube	71436-2564	Contact Molex	
	14.00mm (.551")	Yes	Tape and Reel	71436-1464	71439-3464	
			Tube	71436-1164	71439-3164	
		No	Tape and Reel	71436-1864	71439-3864	
			Tube	71436-1564	71439-3564	
	15.00mm (.591")	Yes	Tape and Reel	71436-2464	71439-3464	
			Tube	71436-2164	71439-3164	
		No	Tape and Reel	71436-2864	71439-3864	
			Tube	71436-2564	71439-3564	

Note: These order numbers are the recommended plug and receptacle combinations for mated stack heights per EIA standard 700 AAAB. Per EIA standard, board stack height measured from facing surfaces of parallel circuit boards includes solder thickness allowance of 0.1mm (.004") per side.

PRODUCT SPECIFICATION

TABLE OF CONTENTS

1.0 SCOPE

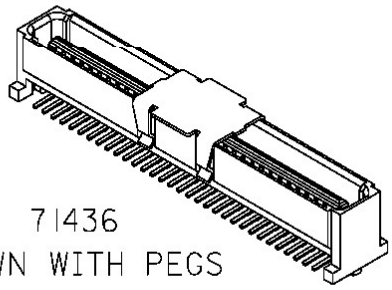
This Product Specification covers the 1.0mm pitch board-to-board plug and receptacle connectors.

2.0 PRODUCT DESCRIPTION

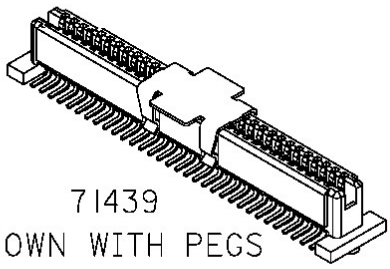
2.1 The 71436 plug and the 71439 receptacle connectors have been designed in accordance with EIA standard 700 AAAB for 1.0mm two-part connectors for use with parallel printed boards.

2.1.1 All 1.0mm connectors are available with or without locating pegs.

2.1.2 All 1.0mm connectors can be supplied with a vacuum cap for robotic placement.



71436
SHOWN WITH PEGS
AND VACUUM CAP



71439
SHOWN WITH PEGS
AND VACUUM CAP

2.0 PRODUCT DESCRIPTION (CONT'D)

2.2 Product Name and Item Numbers
See figure 1 and table 1.

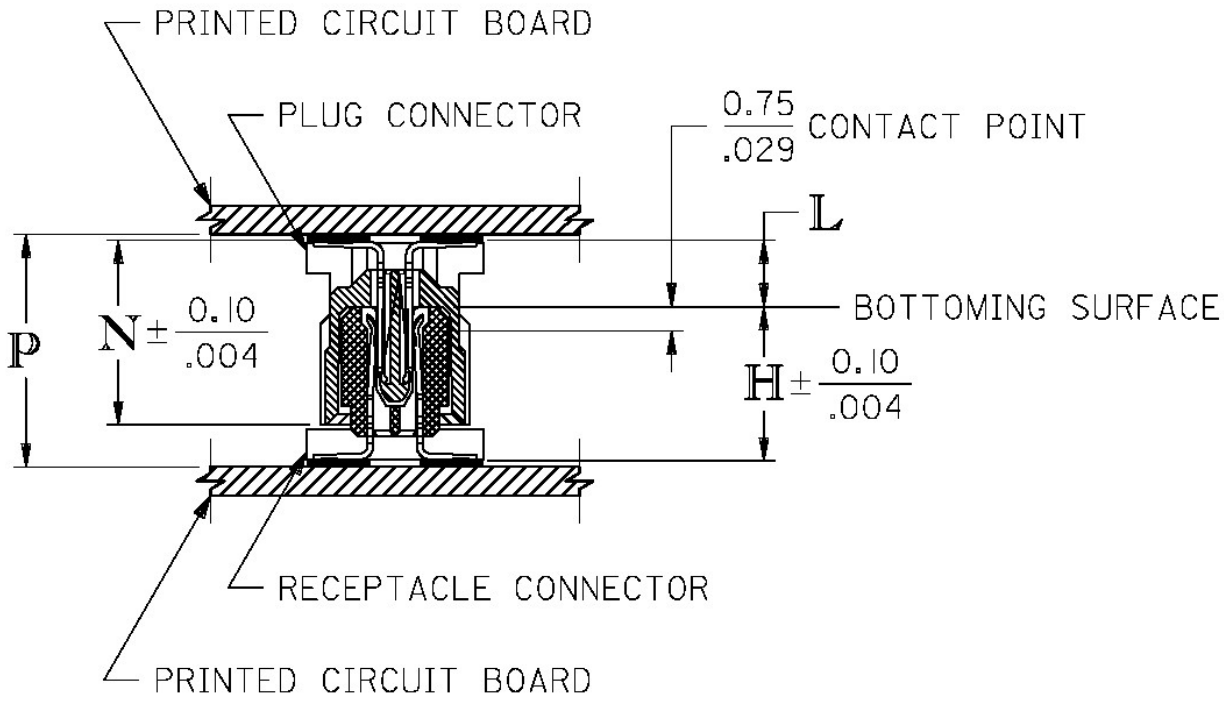


Figure 1

PLUG CONNECTOR				RECEPTACLE CONNECTOR			**STACK HEIGHT DIMENSION P +0.00/-0.40 mm +.000/-.016 Inch**
ITEM NO.	DIM. N	DIM. L		ITEM NO.	DIM. H		
71436-0***	6.35/.250	2.30/.090		71439-0***	5.30/.209		**8.00/.315**
71436-1***	7.35/.289	3.30/.130		71439-0***	5.30/.209		**9.00/.354**
71436-2***	8.35/.329	4.30/.169		71439-0***	5.30/.209		**10.00/.394**
71436-1***	7.35/.289	3.30/.130		71439-1***	7.30/.287		**11.00/.433**
71436-2***	8.35/.329	4.30/.169		71439-1***	7.30/.287		**12.00/.472**
71436-2***	8.35/.329	4.30/.169		71439-2***	8.30/.327		**13.00/.512**
71436-1***	7.35/.289	3.30/.130		71439-3***	10.30/.406		**14.00/.551**
71436-2***	8.35/.329	4.30/.169		71439-3***	10.30/.406		**15.00/.591**

Table 1

2.3 Dimensions, Materials, and Platings:
See appropriate sales drawings for information on dimensions, materials, and platings.

3.0 APPLICABLE DOCUMENTS AND SPECIFICATIONS

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

3.2 Recognized Agency Approvals:

3.2.1 Underwriters Laboratories Inc.: File Number E29179

4.0 RATINGS

4.1 VOLTAGE
250Volts AC (RMS) (contact to contact)

4.2 CURRENT (30°C Temperature rise)
0.5 Amps maximum, all circuits wired in series ; 1.0 Amps maximum, five adjacent circuits wired in series

4.3 TEMPERATURE
Operating: - 55°C to + 85°C

5.0 PERFORMANCE

5.1 ELECTRICAL REQUIREMENTS

ITEM	DESCRIPTION	TEST CONDITION	REQUIREMENT
1	**Contact Resistance (Low Level)**	Mate connectors, measure by dry circuit: apply a maximum voltage of **20** mV and a current of **10** mA.	**30** milliohms MAXIMUM [initial]
2	**Contact Resistance @ Rated Current**	Mate connectors: apply a maximum voltage of **20** mV at rated current.	**15** milliohms MAXIMUM [initial]
3	**Insulation Resistance**	Apply 250±50 VDC, measure resistance between adjacent terminals.	**100** megaohms MINIMUM
4	**Dielectric Withstanding Voltage**	Apply 250VAC for 1 minute between adjacent terminals.	No breakdown;

5.2 MECHANICAL REQUIREMENTS

ITEM	DESCRIPTION	TEST CONDITION	REQUIREMENT
5	**Terminal Retention Force**	Apply axial force on terminal in housing at rate of 25±6mm (1 ± ¼ inch) per minute.	3.9 N (0.4 Kgf) MINIMUM retention force
6	**Connector Mate and Unmate Forces**	Mate and unmate connectors (male to female) at a rate of 25 ± 6 mm (1 ± ¼ inch) per minute.	Mate Force: 60g X no. of circuits maximum & Un-Mate Force: 23g X no. of circuits, minimum
7	**Durability**	Mate connectors up to 100 cycles at a maximum rate of 10mm (0.40in) per second; rest 30 seconds minimum (when unmated).	Maximum contact resistance change: 15 milliohms
8	**Vibration (Random)**	Amplitude: 1.9mm (.076in) peak-to-peak; Sweep: 10-55-10 Hz in one minute; Duration: 2 hours in each axis x, y and z.	Maximum contact resistance change: 15 milliohms & Discontinuity < **1** microsecond
10	**Shock (Mechanical)**	490 m/s^2 (50g) peak saw-tooth, 11 milliseconds duration; one shock each direction in each axis x, y and z.	Maximum contact resistance change: 15 milliohms & Discontinuity < **1** microsecond

5.3 ENVIRONMENTAL REQUIREMENTS

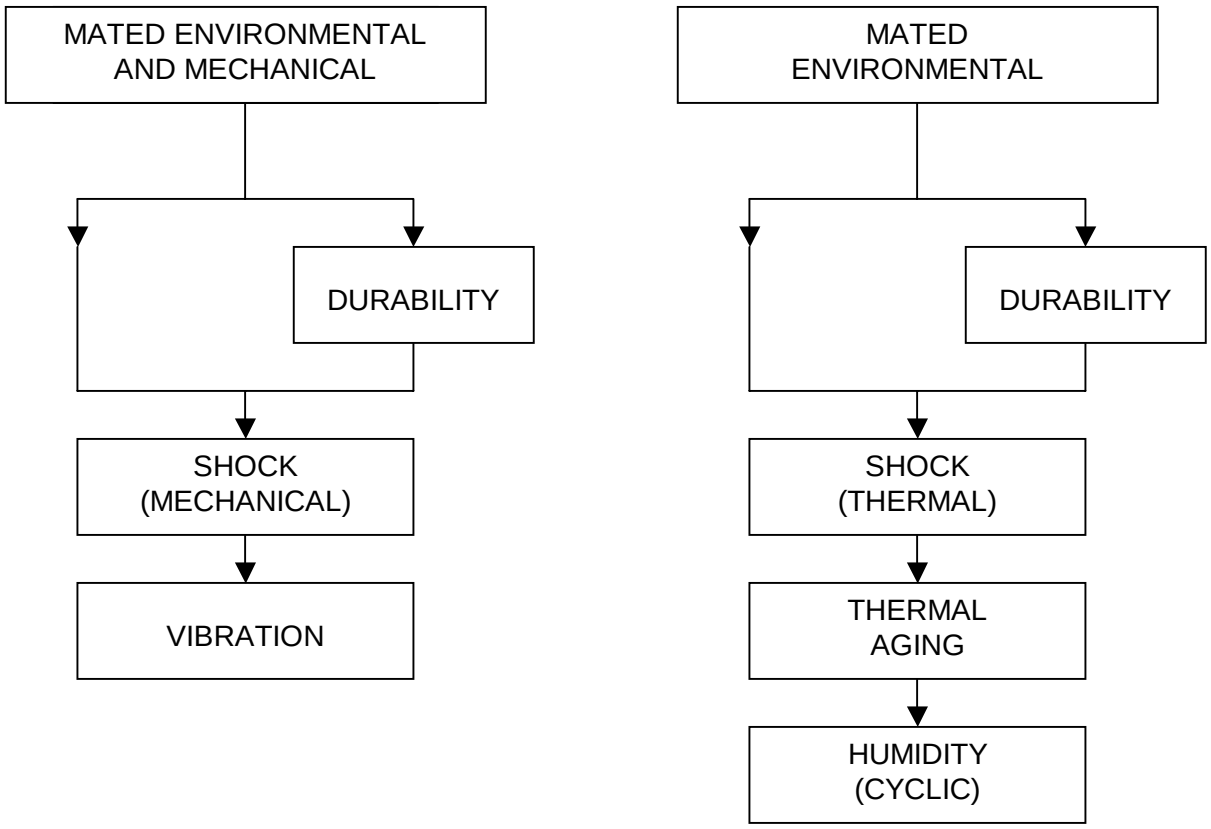
ITEM	DESCRIPTION	TEST CONDITION	REQUIREMENT
11	**Shock (Thermal)**	Mate connectors; expose to 5 cycles of: Temperature °C — Duration (Minutes) -40 +0/-3 — 30 +105 +3/-0 — 30	Maximum contact resistance change: 15 milliohms & Visual: No Damage
12	**Thermal Aging**	Mate connectors; expose to: 250 hours at 85 ± 2°C	Maximum contact resistance change: 15 milliohms & Visual: No Damage

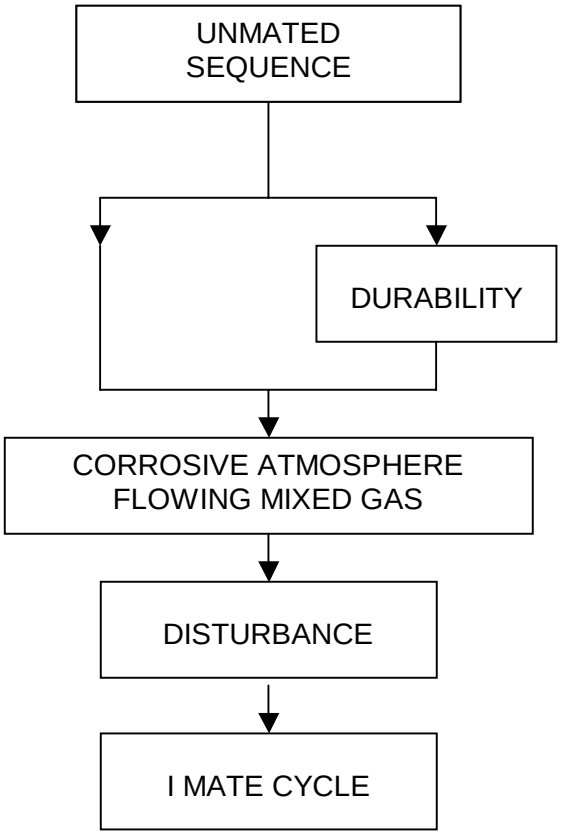
5.3 ENVIRONMENTAL REQUIREMENTS (continued)

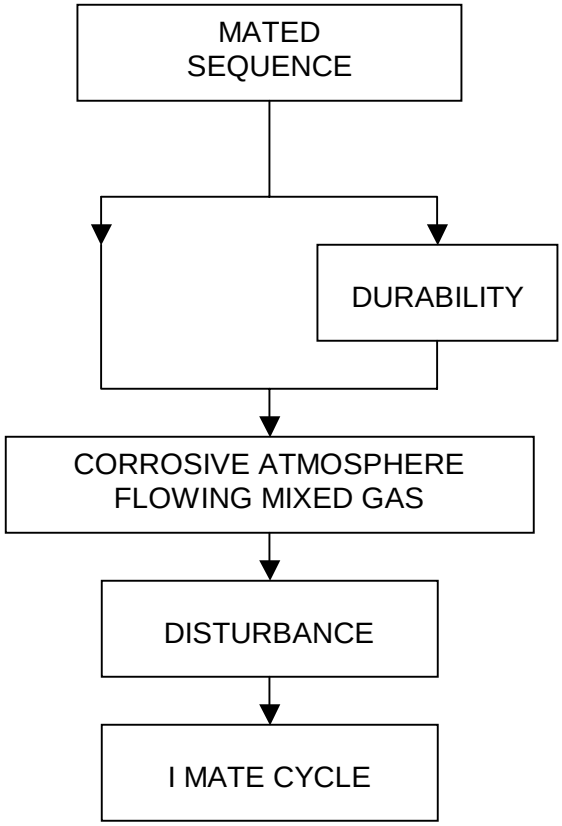
ITEM	DESCRIPTION	TEST CONDITION	REQUIREMENT
27	**Humidity (Steady State)**	Mate connectors: expose to a temperature of 40 ± 2°C with a relative humidity of 90-95% for 240 hours. Per MIL-STD-202F, Method 103B, Test Condition A.	Maximum contact resistance change: 15 milliohms & Visual: No Damage
28	**Humidity (Cyclic)**	Test mated connectors per MIL-STD-202F, Method 106E, excluding steps 7a and 7b.	Maximum contact resistance change: 15 milliohms & Visual: No Damage
30	**Temperature Rise and Current Cycling**	Measure Temperature rise of mated connectors at rated current after 96 hours, then after 45 minutes ON, 15 minutes OFF for 240 hours, and finally after 96 hours at rated current.	Maximum Temperature rise: 30°C over ambient Maximum contact resistance change: 15 milliohms
36	**Mixed Flowing Gas**	Environmental Class II, 7 days unmated.	Maximum contact resistance change: 15 milliohms

6.0 PROCESSING GUIDLINES

PROCESSING STEPS	RECOMMENDATION	COMMENTS
Resistance to Soldering Heat	Peak soldering temperature to be 265 degrees C. Maximum time within 5 degrees of peak temperature to be 40 seconds. Note: Connectors must be dried for 8 hours @ 70°C prior to processing at temperatures over 245°C. Connectors may be left in the tape and reel or tubes during the drying operation.	Appearance: No Physical Damage


MATED ENVIRONMENTAL AND MECHANICAL
DURABILITY
SHOCK (MECHANICAL)
VIBRATION
MATED ENVIRONMENTAL
DURABILITY
SHOCK (THERMAL)
THERMAL AGING
HUMIDITY (CYCLIC)


UNMATED
SEQUENCE
DURABILITY
CORROSIVE ATMOSPHERE
FLOWING MIXED GAS
DISTURBANCE
I MATE CYCLE


MATED
SEQUENCE
DURABILITY
CORROSIVE ATMOSPHERE
FLOWING MIXED GAS
DISTURBANCE
I MATE CYCLE

molex®	**SINGLE LINE MODEL (SLM)**	molex®

LANGUAGE

ENGLISH

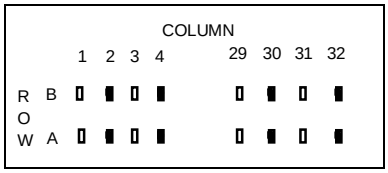
INTERCONNECT

Trade Name: Mezzanine Connector

Configuration: 71436/71439

MODEL DESCRIPTION

This Single Line Model (SLM) can be used for most basic electrical analysis. This SLM will only represent the connector response to Gaussian waveforms with risetimes at **400 picoseconds** and slower. This SLM should not be used to evaluate crosstalk or ground bounce. This SLM can be used in simulation programs that support IBIS (Input/output Buffer Information Specification) or SPICE (Simulation Program with Integrated Circuit Emphasis). For analysis with faster risetime simulations, please contact Molex Incorporated for availability of a Multi-Line Model (MLM).



Pin Layout

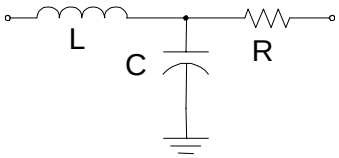
Note: Solid squares represent grounded pins and open squares represent signal pins.

REV	A					
SHT	1 - 2					
REVISE ON PC ONLY		TITLE	**Mezzanine Connector**			
A	Release UDT# 2002-0648		**71436/71439**			
		THIS DOCUMENT CONTAINS INFORMATION THAT IS PROPRIETARY TO MOLEX INC. AND SHOULD NOT BE USED WITHOUT WRITTEN PERMISSION				
REV	DESCRIPTION					
DESIGN CONTROL UDT	STATUS M	WRITTEN BY: J.Capadona	CHECKED BY: D.Dunham	APPROVED BY: G.Panella	DATE: YR / MO / DAY 2000/06/13	

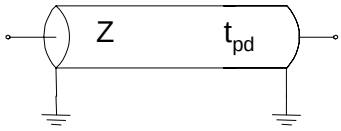
DOCUMENT NO. **SLM - 71436 - 001**	FILE NAME SLM71436001.lwp	SHT NO. 1 OF 2

MODEL INFORMATION

Lumped



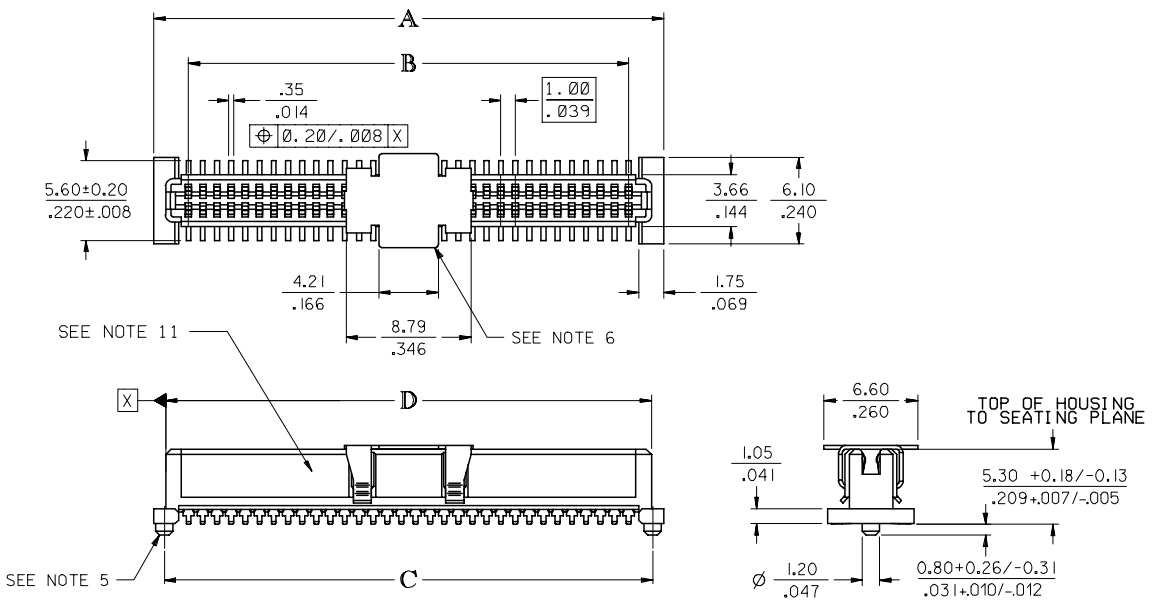
Distributed



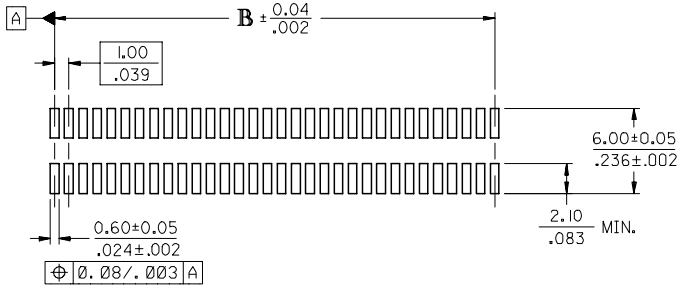
Row	Column	Signal to Ground Ratio[1] S:G	Loop Inductance L (nH)	Capacitance C (pF)	Resistance R (mΩ)	Data Source[2]	Impedance $Z = \sqrt{\frac{L}{C}}$ (Ω)	Propagation Delay $t_{pd} = \sqrt{LC}$ (ps)
3	3	1:1	2.28	0.79	42.00	E	53.70	42.44

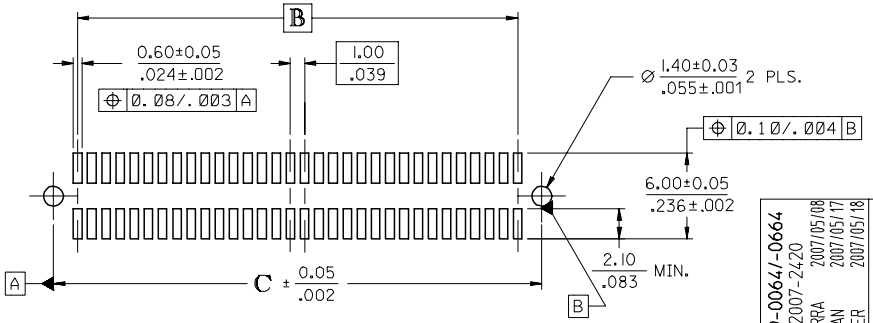
(1) N/A = Not Applicable due to ground plane (when present).
(2) E = Empirical (measured); T = Theoretical (mathematical).
(3) Mated = Board Effects Included.

REVISE ON PC ONLY		TITLE	Mezzanine Connector
A	SEE SHEET 1		71436/71439
REV	DESCRIPTION	THIS DOCUMENT CONTAINS INFORMATION THAT IS PROPRIETARY TO MOLEX INC. AND SHOULD NOT BE USED WITHOUT WRITTEN PERMISSION	



CIRCUIT SIZE	DIM. A	DIM. B	DIM. C	DIM. D
20	13.90 .547	9.00 .354	12.40 .488	12.22 .481
30	18.90 .744	14.00 .551	17.40 .685	17.22 .678
40	23.90 .941	19.00 .748	22.40 .882	22.22 .875
50	28.90 1.138	24.00 .945	27.40 1.079	27.22 1.072
60	33.90 1.335	29.00 1.142	32.40 1.276	32.22 1.269
64	35.90 1.413	31.00 1.220	34.40 1.354	34.22 1.347
70	38.90 1.531	34.00 1.339	37.40 1.472	37.22 1.465
80	43.90 1.728	39.00 1.535	42.40 1.669	42.22 1.662
84	45.90 1.807	41.00 1.614	44.40 1.748	44.22 1.741
90	48.90 1.925	44.00 1.732	47.40 1.866	47.22 1.859
100	53.90 2.122	49.00 1.929	52.40 2.063	52.22 2.056
110	58.90 2.319	54.00 2.126	57.40 2.260	57.22 2.253
120	63.90 2.516	59.00 2.323	62.40 2.457	62.22 2.450





RECOMMENDED PCB LAYOUT (WITH AND WITHOUT PEGS)

RECOMMENDED PCB THICKNESS: 1.00±0.10/.039±.004

NOTES:

1. HOUSING MATERIAL: GLASS FILLED THERMOPLASTIC; UL 94V-0; SEE SHEET 2 FOR COLOR.
   TERMINAL MATERIAL: PHOSPHOR BRONZE; 0.205/.0080 THICK
   VACUUM CAP MATERIAL: STAINLESS STEEL; 0.255/.0100 THICK
2. CONTACT PLATING FINISH: REFER TO CHART ON SHEET 2
3. THIS PART, WHEN MATED WITH MOLEX 1.0mm PLUG CONNECTOR SERIES 71439, CONFORMS TO MOLEX PRODUCT SPECIFICATION PS-71436-9999. REFER TO CHART ON SHEET 2 FOR MATED STACK HEIGHTS FOR THIS RECEPTACLE.
4. PACKAGING SPECIFICATIONS: REFER TO CHART ON SHEET 2.
5. PEGS ARE OPTIONAL. REFER TO CHART ON SHEET 2.
6. VACUUM PICK & PLACE CAP IS OPTIONAL. REFER TO CHART ON SHEET 2.
7. THIS PART CONFORMS TO EIA STANDARD 700 AAAB FOR 1.0mm TWO-PART CONNECTORS FOR USE WITH PARALLEL PRINTED BOARDS.
8. COPLANARITY OF SMT TAILS: 0.10 MM/.004 INCH MAXIMUM
9. 64-CIRCUIT RECEPTACLE ASSEMBLY WITH PEGS AND VACUUM CAP SHOWN FOR ILLUSTRATION PURPOSES ONLY.
10. INCH DIMENSIONS SHOWN FOR REFERENCE ONLY.
11. ASSEMBLY TO HAVE DATE CODE: XX XX
    WEEK — YEAR

SHT	REV
2	L
1	L

ADD 71439-0064/-0664 2007/05/08
EC NO: UCP2007-2420 2007/05/17
DRWN:MSIBARRA CHKD:DMORGAN APPR:SMILLER 2007/05/18
DESCRIPTION REV

QUALITY SYMBOLS
▼=0
▽=0

GENERAL TOLERANCES (UNLESS SPECIFIED)

	mm	INCH
4 PLACES	± ---	± ---
3 PLACES	± ---	± .005
2 PLACES	± 0.13	± .01
1 PLACE	± 0.25	± ---
ANGULAR ±1/2°		

DRAFT WHERE APPLICABLE MUST REMAIN WITHIN DIMENSIONS

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

DRAWN BY	REED	DATE 1995/03/23
CHECKED BY	REED	DATE 1995/03/23
APPROVED BY	BIXLER	DATE 1995/03/23

TITLE: SALES ASSY, 1.0MM BOARD TO BOARD RECEP CONNECTOR 5.30/.209 HIGH

MOLEX INCORPORATED

MATERIAL NO.: SEE TABLE
DOCUMENT NO.: SDA-71439-0***
SHEET NO.: 1 OF 2

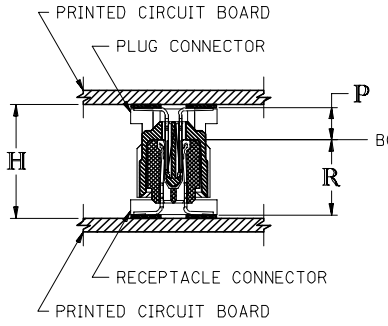
SIZE C

WHITE (NATURAL) MATERIAL

PART NUMBER	CIRCUIT SIZE	CONTACT PLATING SEE NOTE BELOW CHARTS	PEGS	PICK & PLACE CAP	PACKAGING SPEC. NUMBER	PACKAGING TYPE
71439-0164	64	30 GOLD	YES	NO	PK-70873-0601	TUBE
71439-0264	64	50 GOLD	NO	YES	PK-70873-063	TAPE & REEL
71439-0364	64	30 GOLD	YES	YES	PK-70873-0607	TUBE
71439-0464	64	30 GOLD	YES	YES	PK-70873-063	TAPE & REEL
71439-0564	64	30 GOLD	NO	NO	PK-70873-0683	TUBE
71439-0764	64	30 GOLD	NO	YES	PK-70873-0606	TUBE
71439-0864	64	30 GOLD	NO	YES	PK-70873-063	TAPE & REEL
71439-0664	64	50 GOLD	YES	NO	PK-70873-0601	TUBE
71439-0064	64	50 GOLD	NO	NO	PK-70873-0601	TUBE

BLACK MATERIAL WITH MATTE PICK & PLACE CAP

PART NUMBER	CIRCUIT SIZE	CONTACT PLATING SEE NOTE BELOW CHARTS	PEGS	PICK & PLACE CAP	PACKAGING SPEC. NUMBER	PACKAGING TYPE
71439-0964	64	30 GOLD	NO	YES	PK-70873-063	TAPE & REEL



PLUG STACK HEIGHT
+ RECEPTACLE STACK HEIGHT
+ 0.40/.016 (SOLDER PASTE ALLOWANCE)
= MATED STACK HEIGHT

P = PLUG STACK HEIGHT
R = RECEPTACLE STACK HEIGHT
H = MATED STACK HEIGHT

CONTACT PLATING:

30 GOLD - 0.76 MICROMETER/30 MICROINCH MINIMUM GOLD IN CONTACT AREA AND 1.91 MICROMETER/75 MICROINCH MINIMUM TIN IN SOLDER TAIL AREA. NICKEL UNDERPLATE OVER ENTIRE TERMINAL.

50 GOLD - 1.27 MICROMETER/50 MICROINCH MINIMUM GOLD IN CONTACT AREA AND 1.91 MICROMETER/75 MICROINCH MINIMUM TIN IN SOLDER TAIL AREA. NICKEL UNDERPLATE OVER ENTIRE TERMINAL.

RECOMMENDED PLUG/RECEPTACLE COMBINATION FOR MATED STACK HEIGHT PER EIA STANDARD 700 AAAB

MATED STACK HEIGHT	RECEPTACLE HEIGHT	RECEPTACLE SERIES NO.	PLUG HEIGHT	PLUG SERIES NO.
8.00/.315	5.30/.209	71439-0***	2.30/.090	71436-0***
9.00/.354	5.30/.209	71439-0***	3.30/.130	71436-1***
10.00/.394	5.30/.209	71439-0***	4.30/.169	71436-2***

ADD 71439-0064/-0664
EC NO: UCP2007-2420 2007/05/08
DRWN:MSIBARRA 2007/05/17
CHKD:DMORGAN
APPR:SMILLER 2007/05/18
DESCRIPTION
REV

QUALITY SYMBOLS
▼=0
▽=0

GENERAL TOLERANCES (UNLESS SPECIFIED)

	mm	INCH
4 PLACES	± ---	± ---
3 PLACES	± ---	± ---
2 PLACES	± ---	± ---
1 PLACE	± ---	± ---
ANGULAR ±1/2°		

DRAFT WHERE APPLICABLE MUST REMAIN WITHIN DIMENSIONS

DIMENSION STYLE: MM/IN
SCALE: ---
DESIGN UNITS: INCH
THIRD ANGLE PROJECTION

		DATE
DRAWN BY	REED	1995/03/23
CHECKED BY	REED	1995/03/23
APPROVED BY	BIXLER	1995/03/23

TITLE: SALES ASSY, 1.0MM BOARD TO BOARD RECEP CONNECTOR 5.30/.209 HIGH

MOLEX INCORPORATED

MATERIAL NO.: SEE TABLE
DOCUMENT NO.: SDA-71439-0***
SHEET NO.: 2 OF 2
SIZE: C