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ELECTRONICS

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Jameco Part Number 1303661

FEATURES AND SPECIFICATIONS

Features and Benefits

- Sizes 6 to 64 circuits
- Contact and plating orientation according to DIN 41651
- North/south contact orientation avoids overstress
- High pin retention
- Polarized
- Friction lock

Reference Information

Product Specification: PS-99020-0001
 Packaging: Tray
 Mates With: 90142
 Designed In: Inches

Electrical

Voltage: 350V max.
 Current: 3.0A
 Contact Resistance: 20mΩ max.
 Insulation Resistance: 1000 MΩ min.

Mechanical

Contact Retention to Housing: 20N (2.0kgf) min.
 Mating Force: 1N max. Gold and 3N max. Tin
 Unmating Force: 0.2N min. Gold and 0.2N min. Tin
 Nominal Force: 1N

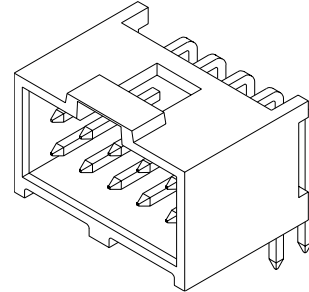
Physical

Housing: Black glass-filled polyester, UL 94V-0
 Contact: Copper Alloy, 0.64mm (.025") square pins
 Plating: See Table
 Operating Temperature: -55 to +125°C

molex® 2.54mm (.100") Pitch C-Grid III™ Shrouded Header

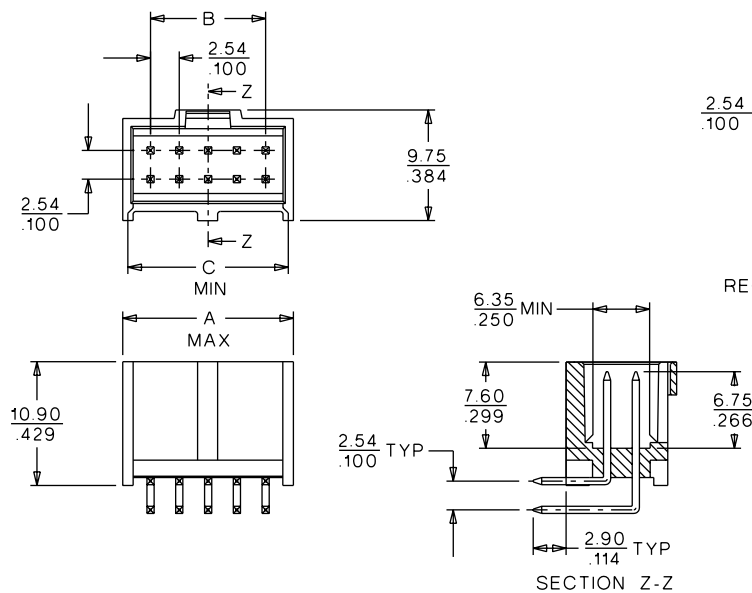
90130

Dual Row, Right Angle Fully Loaded

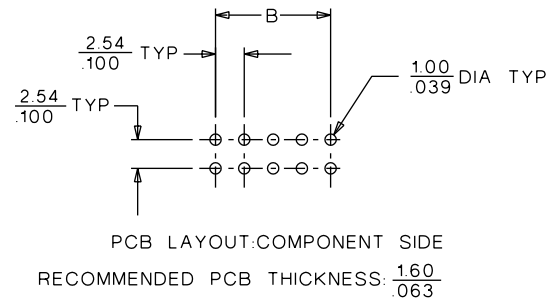


2.54mm (.100") Pitch

CATALOG DRAWING (FOR REFERENCE ONLY)



Not For Use With Molex SL™ Components



ORDERING INFORMATION AND DIMENSIONS

Circuits	Order No.			Dimension		
	Plating A	Plating E	Plating F	A	B	C
6	90130-3106	90130-3206	90130-3306	10.34 (.407)	5.08 (.200)	7.92 (.312)
8	90130-3108	90130-3208	90130-3308	12.88 (.507)	7.62 (.300)	10.46 (.412)
10	90130-3110	90130-3210	90130-3310	15.42 (.607)	10.16 (.400)	13.00 (.512)
12	90130-3112	90130-3212	90130-3312	17.96 (.707)	12.70 (.500)	15.54 (.612)
14	90130-3114	90130-3214	90130-3314	20.50 (.807)	15.24 (.600)	18.08 (.712)
16	90130-3116	90130-3216	90130-3316	23.04 (.907)	17.78 (.700)	20.62 (.812)
18	90130-3118	90130-3218	90130-3318	25.58 (1.007)	20.32 (.800)	23.16 (.912)
20	90130-3120	90130-3220	90130-3320	28.12 (1.107)	22.86 (.900)	25.70 (1.012)
24	90130-3124	90130-3224	90130-3324	33.20 (1.307)	27.94 (1.100)	30.78 (1.212)

Circuits	Order No.			Dimension		
	Plating A	Plating E	Plating F	A	B	C
26	90130-3126	90130-3226	90130-3326	35.74 (1.407)	30.48 (1.200)	33.32 (1.312)
30	90130-3130	90130-3230	90130-3330	40.82 (1.607)	35.56 (1.400)	38.40 (1.512)
34	90130-3134	90130-3234	90130-3334	45.90 (1.807)	40.64 (1.600)	43.48 (1.712)
38	90130-3138	90130-3238	90130-3338	50.98 (2.007)	45.72 (1.800)	48.56 (1.912)
40	90130-3140	90130-3240	90130-3340	53.52 (2.107)	48.26 (1.900)	51.10 (2.012)
50	90130-3150	90130-3250	90130-3350	66.22 (2.607)	60.96 (2.400)	63.80 (2.512)
60	90130-3160	90130-3260	90130-3360	78.92 (3.107)	73.66 (2.900)	76.50 (3.012)
64	90130-3164	90130-3264	90130-3364	84.00 (3.307)	78.74 (3.100)	81.58 (3.212)

For other available circuit sizes contact Molex

Plating A: 4µm (160µ") Tin/Lead over Nickel

Plating E: 0.38µm (15µ") selective Gold over Nickel and 4µm (160µ") Tin/Lead over Nickel

Plating F: 0.76µm (30µ") selective Gold over Nickel and 4µm (160µ") Tin/Lead over Nickel



PRODUCT SPECIFICATION

LANGUAGE

ENGLISH

4.0 ELECTRICAL SPECIFICATIONS

- 4.1 Operating Voltage according to IEC 130-1: $\leq 350 \text{ V DC/AC}$
- 4.2 Current Carrying Capacity: $\leq 3\text{A}$
- 4.3 Contact Resistance: $\leq 20\text{m}\Omega$ initial,
 $\leq 10\text{m}\Omega$ max. change after each test
- 4.4 Insulation Resistance at 500 VDC after each test:
 - shrouded and unshrouded headers: $\geq 5000\text{M}\Omega$
 - PCB connectors, crimp housings and modules: $\geq 1000\text{M}\Omega$
- 4.5 Dielectric Withstand Voltage: $\geq 1000\text{V}$

5.0 MECHANICAL SPECIFICATIONS

- 5.1 Contact Retention in housing according to IEC 512-8 test 15b:
 - shrouded and unshrouded headers:
 - straight (two directions): $\geq 20\text{N}$
 - right angle (one direction): $\geq 20\text{N}$
 - PCB connectors:
 - 90147, 90148, 90151: $\geq 15 \text{ N}$
 - 90152: ≥ 8.8
 - 90119 loaded in crimp housings and modules: $\geq 15 \text{ N}$

REVISE ON PC ONLY		TITLE	
J	VARIOUS MODS. E2003-0443 02.10.11 MS	C-GRID III	
	DESCRIPTION		
REV		THIS DOCUMENT CONTAINS INFORMATION THAT IS PROPRIETARY TO MOLEX INC. AND SHOULD NOT BE USED WITHOUT WRITTEN PERMISSION	
DOCUMENT NO. PS-99020-0001		FILE NAME PS99020_0001.DOC	SHEET 2 of 8
ES-400000-3996 REV.A SHEET 4 95/MAR/10 EC U5-0926 DCBRD03.SAM			



PRODUCT SPECIFICATION

LANGUAGE

ENGLISH

5.2 Insertion Force per contact according to IEC 512-7 test 13b using gauge P11 in Appendix 1:
 - PCB connectors (90147, 90148, 90151 & 90152)
 and 90119 loaded in crimp modules and housings

-Gold plated: ≤ 1 N

-Tin plated: ≤ 3 N

5.3 Withdrawal Force per contact according to IEC 512-7 test 13b using gauge P12 in Appendix 1:
 - PCB connectors (90147,90148,90151 & 90152)
 and 90119 loaded in crimp modules and housings

-Gold plated: ≥ 0.2 N

-Tin plated: ≥ 0.2 N

5.4 Durability according to IEC 512-5 test 9a:

Class 1: 30 cycles

Class 2: 100 cycles

Class 3: 200 cycles

Class 4: 500 cycles

5.5 Solderability according to IEC 512-6 test 12a method 1:
 235°C/2s

95% of immersed area must not show voids, pinholes, etc.

5.6 Resistance to Soldering Heat according to IEC 512-6 test 12d: 260°C/10s

There shall be no damage that will impair normal operation.

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5.7 Shock according to IEC 512-4 test 6c:

50g/11ms

5.8 Vibration according to IEC 512-4 test 6d with mountings per Appendix 2:

Class 1:

10 - 500 Hz, 0.35mm or 5g

Duration: 2 hours each, 3 Directions

Class 2,3,4:

10 - 2000 Hz, 1.50mm or 20g

Duration: 2 hours each, 3 directions

5.9 Tensile Strength of crimp termination according to IEC 512-8 test 16d:

75% of wire tensile strength

6.0 ENVIRONMENTAL SPECIFICATIONS

6.1 Operating Temperature:

- unshrouded and shrouded headers and PCB connectors:

-55°C to +125°C

- crimp modules and housings:

-55°C to +105°C

6.2 Damp Heat according to IEC 512-6 test 11c:

Class 1,2:55°C

90- 95% R.H.

Duration: 21 days

Class 3,4:55°C

90 - 95% R.H.

Duration: 56 days

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PRODUCT SPECIFICATION

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6.3 Dry Heat according to IEC 512-6 test 11i:

- unshrouded and shrouded headers and PCB connectors: 125°C Duration: 16 hours
- crimp modules and housings: 105°C Duration: 16 hours

6.4.1 Industrial Atmosphere according to IEC 68-2-43 test Kd:

Class	SO ₂ at 10ppm
1:	Not Applicable
2,3:	4 days
4:	10 days

6.4.2 Industrial Atmosphere according to IEC 68-2-42 test Kc:

Class	H ₂ S at 1ppm
1:	Not Applicable
2,3:	4 days
4:	10 days

6.4.3 Thermal Shock according to IEC 512-6 test 11d:

- unshrouded and shrouded headers and PCB connectors: -55°C to +125°C, 10 cycles
- crimp modules and housings: -55°C to +105°C, 10 cycles

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PRODUCT SPECIFICATION

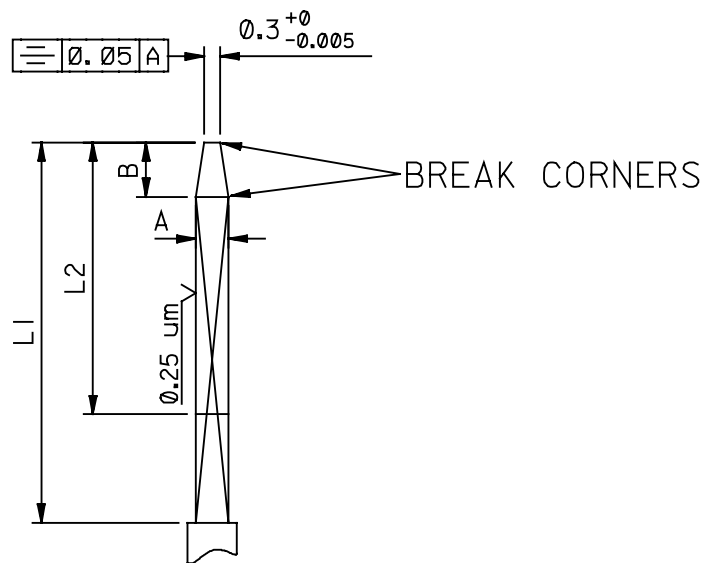
LANGUAGE

ENGLISH

APPENDIX 1

INSERTION AND WITHDRAWAL GAUGES

GAUGE	A	B	L1	L2(MIN)	WEIGHT
P11	$0.65^{+0.0005}_0$	$1^{+0}_{-0.10}$	$7^{+0}_{-0.10}$	5	20 g
P12	$0.60^{+0}_{-0.0005}$	$1^{+0}_{-0.10}$	$6.5^{+0}_{-0.10}$	5	-



MATERIAL: HARDENED STEEL



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	DESCRIPTION		
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ES-400000-3996 REV.A SHEET 4 95/MAR/10 EC U5-0926 DCBRD03.SAM			



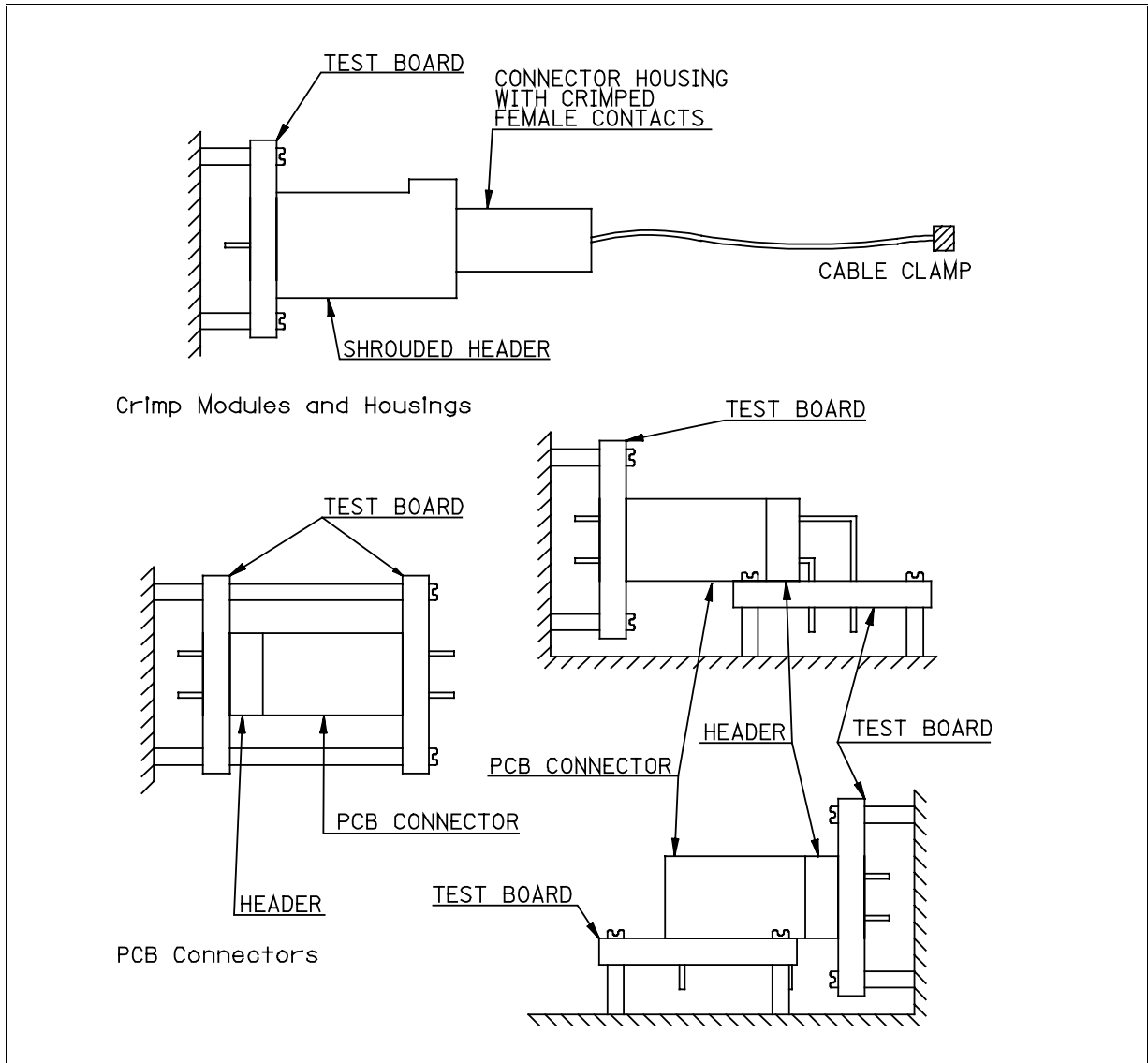
PRODUCT SPECIFICATION

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APPENDIX 2

VIBRATION MOUNTINGS



Crimp Modules and Housings

PCB Connectors

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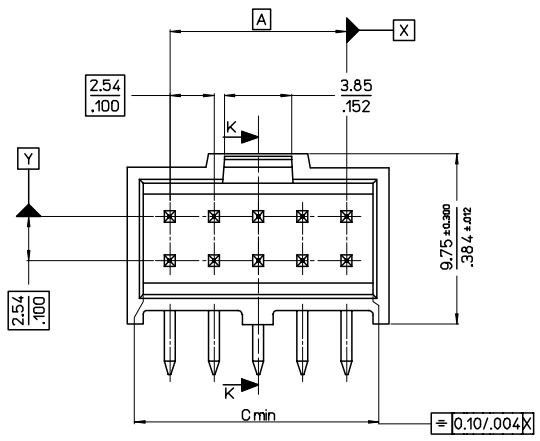
ENGLISH

APPENDIX 3 C-GRID III PRODUCT RANGE

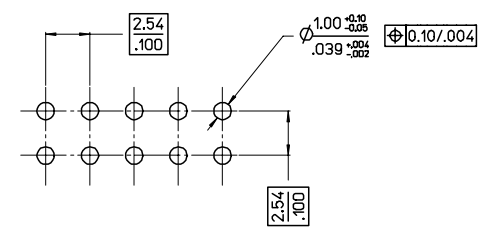
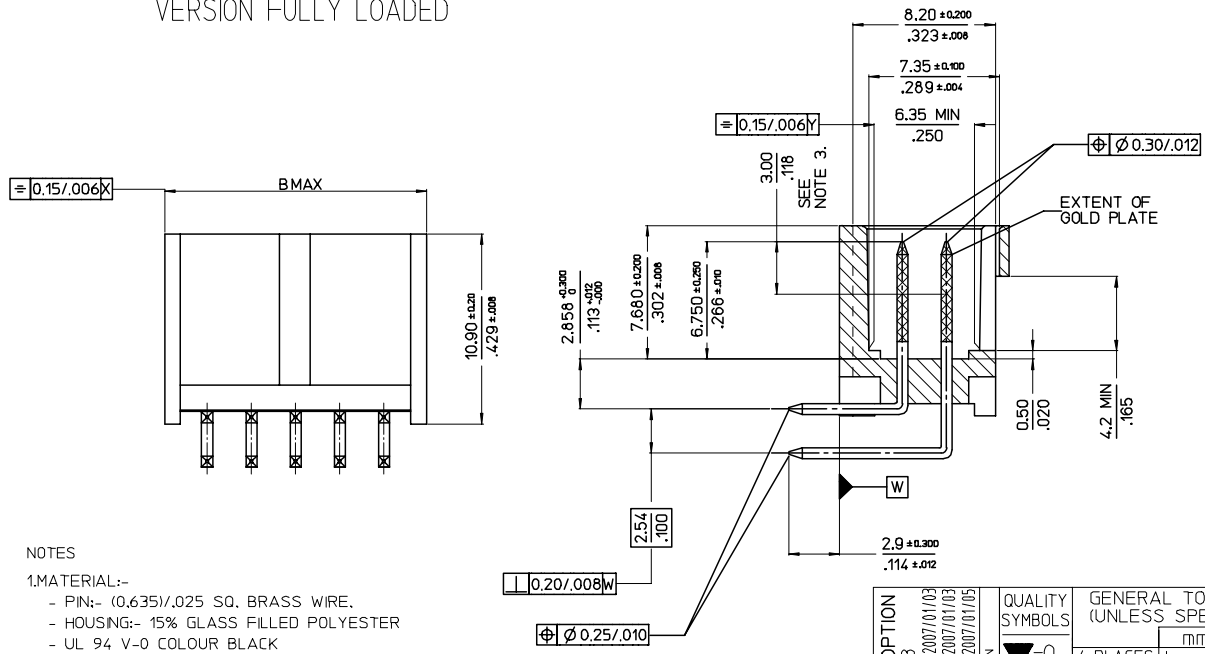
PRODUCT TYPE	SERIES	
QF50	5320	FEMALE
	5576	HEADER VERTICAL
	5578	HEADER RIGHT ANGLE
SHROUDED HEADERS	70246	DUAL ROW LOW PROFILE
	70247	DUAL ROW LOW PROFILE RIGHT ANGLE
	87256	WITH ALTERNATIVE POLARISATION PEGS
	90130-1	DUAL ROW VERTICAL FULLY LOADED
	90130-2	DUAL ROW VERTICAL VOIDED PINS
	90130-3	DUAL ROW RIGHT ANGLE FULLY LOADED
	90130-4	DUAL ROW RIGHT ANGLE VOIDED PINS
	90136-1	SINGLE ROW VERTICAL
KINKED PIN HEADERS	90627	SINGLE ROW VERTICAL
	90629	SINGLE ROW RIGHT ANGLE
	90628	DUAL ROW VERTICAL
	90630	DUAL ROW RIGHT ANGLE
UNSHROUDED HEADERS	90120	SINGLE ROW VERTICAL
	90121	SINGLE ROW RIGHT ANGLE
	90122	DUAL ROW RIGHT ANGLE
	90131	DUAL ROW VERTICAL
	90294	DUAL ROW VERTICAL DOUBLE BODY
	90547	SINGLE ROW VERTICAL DOUBLE BODY
CRIMP TERMINALS	90119	FEMALE CRIMP
PCB CONNECTORS	90147	SINGLE ROW VERTICAL
	90148	SINGLE ROW HORIZONTAL
	90151	DUAL ROW VERTICAL
	90152	DUAL ROW HORIZONTAL
MODULAR HOUSINGS	90123	SINGLE ROW CRIMP
	90143	DUAL ROW
CRIMP HOUSINGS	90142	DUAL ROW
	90156	SINGLE ROW
	90160	DUAL ROW

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	DESCRIPTION		
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ES-400000-3996 REV.A SHEET 4 95/MAR/10 EC U5-0926 DCBRD03.SAM			

HSG CKT SIZE	A	B	C
6	(5.08) .200	(10.34) .407	(7.92) .312
8	(7.62) .300	(12.88) .507	(10.46) .412
10	(10.16) .400	(15.42) .607	(13.00) .512
12	(12.70) .500	(17.96) .707	(15.54) .612
14	(15.24) .600	(20.50) .807	(18.08) .712
16	(17.78) .700	(23.04) .907	(20.62) .812
18	(20.32) .800	(25.58) 1.007	(23.16) .912
20	(22.86) .900	(28.12) 1.107	(25.70) 1.012
22	(25.40) 1.000	(30.66) 1.207	(28.24) 1.112
24	(27.94) 1.100	(33.20) 1.307	(30.78) 1.212
26	(30.48) 1.200	(35.74) 1.407	(33.32) 1.312
28			
30	(35.56) 1.400	(40.82) 1.607	(38.40) 1.512
32			
34	(40.64) 1.600	(45.90) 1.807	(43.48) 1.712
36			
38	(45.72) 1.800	(50.98) 2.007	(48.56) 1.912
40	(48.26) 1.900	(53.52) 2.107	(51.10) 2.012
42			
44	(53.34) 2.100	(58.60) 2.307	(56.18) 2.212
46			
48			
50	(60.96) 2.400	(66.22) 2.607	(63.80) 2.512
52			
54	(66.04) 2.600	(71.30) 2.807	(68.88) 2.712
56			
58			
60	(73.66) 2.900	(78.92) 3.107	(76.50) 3.012
62			
64	(78.74) 3.100	(84.00) 3.307	(81.58) 3.212
66			
68	(83.82) 3.300	(89.08) 3.507	(86.66) 3.412



VERSION FULLY LOADED



RECOMMENDED P.C. BOARD HOLE PATTERN

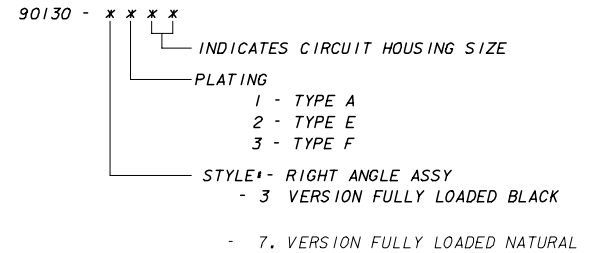
- NOTES
- MATERIAL:-
 - PIN:- (0.635)/.025 SQ. BRASS WIRE.
 - HOUSING:- 15% GLASS FILLED POLYESTER
 - UL 94 V-0 COLOUR BLACK
 - FOR PLATING VERSIONS AND VOID VERSIONS SEE SHEET 2.
 - MEASUREMENT POINT FOR MINIMUM PLATING THICKNESS.

REMOVE VOID OPTION ELC NO: E2007-0553 DRAWN: BIRNES 2007/01/03 CHKD: APPR: EDWARDS 2007/01/03 APPR: EDWARDS 2007/01/03	QUALITY SYMBOLS 	GENERAL TOLERANCES (UNLESS SPECIFIED) <table border="1"> <tr><th></th><th>mm</th><th>INCH</th></tr> <tr><td>4 PLACES</td><td>± ---</td><td>± ---</td></tr> <tr><td>3 PLACES</td><td>± ---</td><td>± .004</td></tr> <tr><td>2 PLACES</td><td>± 0.10</td><td>± ---</td></tr> <tr><td>1 PLACE</td><td>± ---</td><td>± ---</td></tr> </table>		mm	INCH	4 PLACES	± ---	± ---	3 PLACES	± ---	± .004	2 PLACES	± 0.10	± ---	1 PLACE	± ---	± ---	DIMENSION STYLE MM ONLY	SCALE 5:1	DESIGN UNITS METRIC	THIRD ANGLE PROJECTION
		mm	INCH																		
4 PLACES	± ---	± ---																			
3 PLACES	± ---	± .004																			
2 PLACES	± 0.10	± ---																			
1 PLACE	± ---	± ---																			
DRAFT WHERE APPLICABLE MUST REMAIN WITHIN DIMENSIONS	SEE CHART	SDA-90130	MOLEX INCORPORATED	SHEET NO. 3 OF 160																	

NO OF CKTS	HSG CKT SIZE	PART NUMBER		
		PLATING TYPE A	PLATING TYPE E	PLATING TYPE F
6	6	90130-X106	90130-X206	90130-X306
8	8	X108	X208	X308
10	10	X110	X210	X310
12	12	X112	X212	X312
14	14	X114	X214	X314
16	16	X116	X216	X316
18	18	X118	X218	X318
20	20	X120	X220	X320
22	22	X122	X222	X322
24	24	X124	X224	X324
26	26	X126	X226	X326
28	28			
30	30	X130	X230	X330
32	32			
34	34	X134	X234	X334
36	36			
38	38	X138	X238	X338
40	40	X140	X240	X340
42	42			
44	44	X144	X244	X344
46	46			
48	48			
50	50	X150	X250	X350
52	52			
54	54	X154	X254	X354
56	56			
58	58			
60	60	X160	X260	X360
62	62			
64	64	X164	X264	X364
66	66			
68	68	90130-X168	90130-X268	90130-X368

NOTES:

1. FOR ASSY SEE SHEET 3.
2. FOR PLATING DETAILS SEE SDES-99000-0003



VERSION FULLY LOADED

REMOVED VOID OPTION ECN NO: E2007-0553 DRAWN BY: DRW:BJBYRNES CHKD: 2007/01/03 APPR: EOMAHONY 2007/01/05	QUALITY SYMBOLS	GENERAL TOLERANCES (UNLESS SPECIFIED)	DIMENSION STYLE	SCALE	DESIGN UNITS	THIRD ANGLE PROJECTION	
	▽=0 ▽=0	mm INCH	MM ONLY	---	METRIC		
		4 PLACES ± --- ± --- 3 PLACES ± --- ± --- 2 PLACES ± --- ± --- 1 PLACE ± --- ± ---	DRAWN BY DATE KS 1987/09/10	TITLE C-GRID III DUAL ROW RIGHT ANGLE SHROUDED HEADER			
		ANGULAR ± --- °	CHECKED BY DATE APPROVED BY DATE	MOLEX INCORPORATED			
	DRAFT WHERE APPLICABLE MUST REMAIN WITHIN DIMENSIONS	SEE CHART	MATERIAL NO.	DOCUMENT NO.	SHEET NO. 4 OF 5		
			SDA-90130				
			THIS DRAWING CONTAINS INFORMATION THAT IS PROPRIETARY TO MOLEX INCORPORATED AND SHOULD NOT BE USED WITHOUT WRITTEN PERMISSION				