

Series image - Reference only

EU RoHS

China RoHS

ELV and RoHS Compliant



Duration at Max. Process Temperature (seconds) 5

Lead-free Process Capability

Wave Capable (TH only)

Max. Cycles at Max. Process Temperature

1

Process Temperature max. C

235

Search Parts in this Series

[7478 Series](#)

Mates With

[2695](#), [6471](#), [7880](#), [4455](#), [7720](#)

Part Number: **0022122034**

Status: **Active**

Description: 2.54mm (.100") Pitch KK® Solid Header, Right Angle, with Friction Lock, 3 Circuits, 0.51µm (20µ") Gold (Au) Plating

Documents:

- [Drawing \(PDF\)](#)
- [Product Specification PS-10-07 \(PDF\)](#)
- [3D Model](#)
- [Packaging Specification \(PDF\)](#)
- [Related Catalog Page \(PDF\)](#)

Order Products:

○ [Check Distributor Inventory](#)

Part Detail: [\(show all\)](#)○ **General**○ **Physical**○ **Electrical**○ **Material Info**○ **Reference - Drawing Numbers****General**

Product Family	PCB Headers
Series	<u>7478</u>
Application	Wire-to-Board
Product Name	KK®

Physical

Breakaway	No
Circuits (Loaded)	3
Circuits (maximum)	3
Color - Resin	Natural (White)
Durability (mating cycles) min	50 cycles
Flammability	94V-0
Lock to Mating Part	Yes
Material - Metal	Brass
Material - Plating Mating	Gold
Material - Resin	Nylon
Number of Rows	1
Orientation	Right Angle
PC Tail Length (in)	0.141 In
PC Tail Length (mm)	3.58 mm
PCB Locator	No
PCB Retention	None
PCB Thickness Recommended (in)	0.062 In
PCB Thickness Recommended (mm)	1.60 mm
Packaging Type	Bag
Pitch - Mating Interface (in)	0.100 In
Pitch - Mating Interface (mm)	2.54 mm
Polarized to Mating Part	Yes
Polarized to PCB	Yes
Shrouded	Partial
Stackable	Yes
Temperature Range - Operating	0°C to +75°C
Termination Interface: Style	Through Hole

Electrical

CSA	LR19980
Current - Maximum	4.00 Amp
UL	E29179
Voltage - Maximum	250V

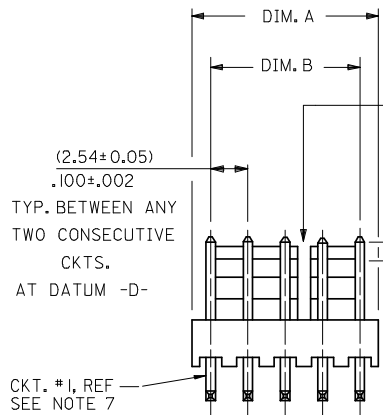
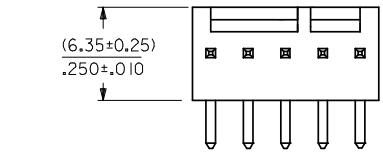
Material Info

Old Part Number	A-7478-03A501
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Reference - Drawing Numbers

Product Specification	PS-10-07
Sales Drawing	SDA-7478

	13	12	11	10	9	8	7	6	5	4	3	2	1
J	28	(71.12 / 70.61) 2.800 / 2.780	(68.58 ± 0.25) 2.700 ± .010	4 , 5 24 , 25									
	27	(68.58 / 68.07) 2.700 / 2.680	(66.04 ± 0.25) 2.600 ± .010	4 , 5 24 , 25									
	26	(66.04 / 65.53) 2.600 / 2.580	(63.50 ± 0.25) 2.500 ± .010	4 , 5 20 , 21									
	25	(63.50 / 62.99) 2.500 / 2.480	(60.96 ± 0.25) 2.400 ± .010	4 , 5 20 , 21									
I	24	(60.96 / 60.45) 2.400 / 2.380	(58.42 ± 0.25) 2.300 ± .010	4 , 5 20 , 21									
	23	(58.42 / 57.96) 2.300 / 2.282	(55.88 ± 0.23) 2.200 ± .009	4 , 5 20 , 21									
	22	(55.88 / 55.42) 2.200 / 2.182	(53.34 ± 0.23) 2.100 ± .009	4 , 5 16 , 17									
H	21	(53.34 / 52.88) 2.100 / 2.082	(50.80 ± 0.23) 2.000 ± .009	4 , 5 16 , 17									
	20	(50.80 / 50.34) 2.000 / 1.982	(48.26 ± 0.23) 1.900 ± .009	4 , 5 16 , 17									
	19	(48.26 / 47.80) 1.900 / 1.882	(45.72 ± 0.23) 1.800 ± .009	4 , 5 16 , 17									
G	18	(45.72 / 45.31) 1.800 / 1.784	(43.18 ± 0.20) 1.700 ± .008	4 , 5 12 , 13									
	17	(43.18 / 42.77) 1.700 / 1.684	(40.64 ± 0.20) 1.600 ± .008	4 , 5 12 , 13									
	16	(40.64 / 40.23) 1.600 / 1.584	(38.10 ± 0.20) 1.500 ± .008	4 , 5 12 , 13									
F	15	(38.10 / 37.69) 1.500 / 1.484	(35.56 ± 0.20) 1.400 ± .008	4 , 5 12 , 13									
	14	(35.56 / 35.20) 1.400 / 1.386	(33.02 ± 0.18) 1.300 ± .007	4 , 5 8 , 9									
	13	(33.02 / 32.66) 1.300 / 1.286	(30.48 ± 0.18) 1.200 ± .007	4 , 5 8 , 9									
	12	(30.48 / 30.12) 1.200 / 1.186	(27.94 ± 0.18) 1.100 ± .007	4 , 5 8 , 9									
E	11	(27.94 / 27.58) 1.100 / 1.086	(25.40 ± 0.18) 1.000 ± .007	4 , 5 8 , 9									
	10	(25.40 / 25.04) 1.000 / .986	(22.86 ± 0.15) .900 ± .006	4 , 5									
	9	(22.86 / 22.50) .900 / .886	(20.32 ± 0.15) .800 ± .006	4 , 5									
D	8	(20.32 / 19.96) .800 / .786	(17.78 ± 0.15) .700 ± .006	4 , 5									
	7	(17.78 / 17.42) .700 / .686	(15.24 ± 0.13) .600 ± .005	4 , 5									
	6	(15.24 / 14.88) .600 / .586	(12.70 ± 0.13) .500 ± .005	4 , 5									
C	5	(12.70 / 12.40) .500 / .488	(10.16 ± 0.13) .400 ± .005	NONE									
	4	(10.16 / 9.86) .400 / .388	(7.62 ± 0.13) .300 ± .005	NONE									
	3	(7.62 / 7.32) .300 / .288	(5.08 ± 0.10) .200 ± .004	NONE									
	2	(5.08 / 4.78) .200 / .188	(2.54 ± 0.05) .100 ± .002	NONE									
B	NO. OF CKTS.	DIM. A	DIM. B	SLOTS LOC.									
A													



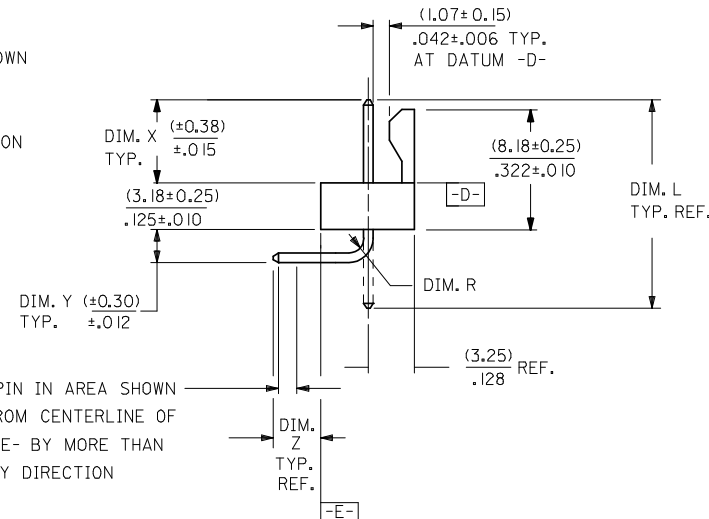
NOTES:

- MATERIAL: NYLON, UL94V-0, COLOR: WHITE
- FINISH:
 - (102) - OVERALL TIN: (0.00508)/.000200 MIN., OVERALL COPPER UNDERPLATE: (0.00254)/.000100 MIN.
 - (154) - OVERALL TIN: (0.00254)/.000100 MIN., OVERALL NICKEL UNDERPLATE: (0.00127)/.000050 MIN.
 - (501) - OVERALL GOLD: (0.00051)/.000020 MIN., OVERALL NICKEL UNDERPLATE: (0.00076)/.000030 MIN.
 - (503) - OVERALL GOLD: (0.00076)/.000030 MIN., OVERALL NICKEL UNDERPLATE: (0.00127)/.000050 MIN.
 - (531) - OVERALL GOLD: (0.000381)/.000015 MIN., OVERALL NICKEL UNDERPLATE: (0.00076)/.000030 MIN.
- PARTS CONFORM TO PRODUCT SPECIFICATION PS-10-07.
- PACKAGING INFORMATION: SEE LEGEND.
- PARTS ARE STACKABLE END TO END ON (2.54)/.100 CENTERS.
- PIN PUSH OUT FORCE: 2 LBS. MIN.
- CIRCUIT ONE DESIGNATION IS USED TO DEFINE VOID LOCATION. CIRCUIT ONE MAY OR MAY NOT LINE UP WITH CIRCUIT ONE ON THE HOUSING.
- THIS PART CONFORMS TO CLASS B REQUIREMENTS OF COSMETIC SPECIFICATION PS-45499-002.

SLOTS LOCATED BETWEEN CIRCUITS (SEE CHART)

CENTERLINE OF PIN IN AREA SHOWN NOT TO VARY FROM CENTERLINE OF PIN AT DATUM -D- BY MORE THAN (0.20)/.008 IN ANY DIRECTION

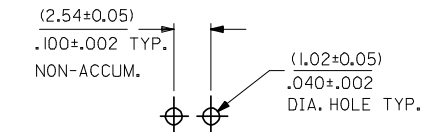
CENTERLINE OF PIN IN AREA SHOWN NOT TO VARY FROM CENTERLINE OF PIN AT DATUM -E- BY MORE THAN (0.13)/.005 IN ANY DIRECTION



SECONDARY OPERATIONS		
CODE	PACKAGE	KINKED PIN
BLANK	BULK PK-7478-001	NO
B	BULK PK-7478-001	ES-42003
T	TUBE PER PK-44743-001	NO

A-7478-N***
NO. OF CKTS.
VERSION LETTER CHANGES WHEN PIN NO. OR PRESS DIM. CHANGES

PLATING SEE NOTE 2



RECOMMENDED P.C. BOARD HOLE LAYOUT

7	Y4
6	W1
5	Y8
4	Y7
3	Y9
2	Y9
1	Y10
SHT	REV

ADD SLOTS LOC. EC NO: UCP2008-1289 DRWN: ADERR 2007/12/07 CHKD: JBELL 2007/12/10 APPR: FSM/TH 2007/12/10	QUALITY SYMBOLS ▽=0 ▽=0	GENERAL TOLERANCES (UNLESS SPECIFIED)	DIMENSION STYLE MM/IN	SCALE 4:1	DESIGN UNITS INCH	THIRD ANGLE PROJECTION
		4 PLACES ±--- ±--- 3 PLACES ±--- ±.010 2 PLACES ±0.25 ±.015 1 PLACE ±0.38 ±--- ANGULAR ±1/2°	DRAWN BY GUZIC 1987/07/30 CHECKED BY PATEL 1987/07/30 APPROVED BY LENZ 1987/07/30	DATE DATE DATE	TITLE FRICTION LOCK HEADER ASY .100 CL BENT SQ PINS 7478 SERIES DWG	
DRAFT WHERE APPLICABLE MUST REMAIN WITHIN DIMENSIONS	MATERIAL NO. SEE CHART	DOCUMENT NO. SDA-7478	SHEET NO. 1 OF 7			
THIS DRAWING CONTAINS INFORMATION THAT IS PROPRIETARY TO MOLEX INCORPORATED AND SHOULD NOT BE USED WITHOUT WRITTEN PERMISSION						

	13	12	11	10	9	8	7	6	5	4	3	2	1				
J	ENG. NO.	PIN NO.	DIM. L	DIM. X	DIM. Z	DIM. Y	DIM. W	DIM. R	ENG. NO.	PIN NO.	DIM. L	DIM. X	DIM. Z	DIM. Y	DIM. W	DIM. T	J
	A-7478-NA102	2766-41(I102)	(18.69) .736	(6.60) .260	(3.58) .141	(3.05) .120	90°	(1.17) .046									
	A-7478-NA50I	2766-41(I50I)	(18.69) .736	(6.60) .260	(3.58) .141	(3.05) .120	90°	(1.17) .046									
I	A-7478-NA50IT	2766-41(I50IT)	(18.69) .736	(6.60) .260	(3.58) .141	(3.05) .120	90°	(1.17) .046									I
	A-7478-NA102T	2766-41(I102T)	(18.69) .736	(6.60) .260	(3.58) .141	(3.05) .120	90°	(1.17) .046									
H																	H
G																	G
F																	F
E																	E
D																	D
C																	C

B	ADD A-7478-NA102T EC NO: UCP2006-1815 DRAWN: ADERR 2006/02/06 CHKD: AELHAG 2006/02/06 APPR: FSM TH 2006/02/09	DESCRIPTION	QUALITY SYMBOLS ▽=0 ▽=0	GENERAL TOLERANCES (UNLESS SPECIFIED)		DIMENSION STYLE IN/MM		SCALE ---	DESIGN UNITS INCH	THIRD ANGLE PROJECTION		TITLE FRICTION LOCK HEADER ASY .100 CL BENT SQ PINS 7478 SERIES DWG	DOCUMENT NO. SDA-7478	SHEET NO. 2 OF 7	A
				4 PLACES ± ---	± ---	DRAWN BY GUZIK	DATE 1987/07/10	MATERIAL NO.		MOLEX INCORPORATED					
A	Y9			DRAFT WHERE APPLICABLE MUST REMAIN WITHIN DIMENSIONS		SEE CHART		THIS DRAWING CONTAINS INFORMATION THAT IS PROPRIETARY TO MOLEX INCORPORATED AND SHOULD NOT BE USED WITHOUT WRITTEN PERMISSION							

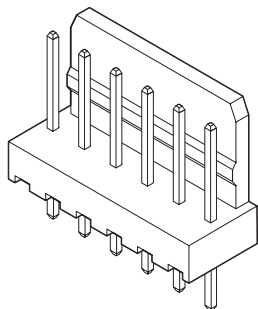
	13	12	11	10	9	8	7	6	5	4	3	2	1	
	A-7478-NA102		A-7478-NA501		A-7478-NA501T		A-7478-NA102T							
J	PART NO.	ENG. NO.	PART NO.	ENG. NO.	PART NO.	ENG. NO.	PART NO.	ENG. NO.	PART NO.	ENG. NO.	PART NO.	ENG. NO.	PART NO.	ENG. NO.
	22-05-3021	* A-7478-2A102	22-12-2024	* A-7478-2A501	50-29-1710	A-7478-2A501T	50-34-8500	A-7478-2A102T						
	22-05-3031	* A-7478-3A102	22-12-2034	* A-7478-3A501	50-29-1711	A-7478-3A501T	50-34-8501	A-7478-3A102T						
	22-05-3041	* A-7478-4A102	22-12-2044	* A-7478-4A501	50-29-1705	A-7478-4A501T	50-34-8502	A-7478-4A102T						
I	22-05-3051	* A-7478-5A102	22-12-2054	* A-7478-5A501	50-29-1712	A-7478-5A501T								
	22-05-3061	* A-7478-6A102	22-12-2064	* A-7478-6A501	50-29-1713	A-7478-6A501T								
	22-05-3071	* A-7478-7A102	22-12-2074	* A-7478-7A501	50-29-1714	A-7478-7A501T								
	22-05-3081	* A-7478-8A102	22-12-2084	* A-7478-8A501	50-29-1715	A-7478-8A501T								
	22-05-3091	* A-7478-9A102	22-12-2094	* A-7478-9A501	50-29-1716	A-7478-9A501T								
H	22-05-3101	* A-7478-10A102	22-12-2104	* A-7478-10A501	50-29-1717	A-7478-10A501T								
	22-05-3111	* A-7478-11A102	22-12-2114	* A-7478-11A501	50-29-1718	A-7478-11A501T								
	22-05-3121	* A-7478-12A102	22-12-2124	* A-7478-12A501	50-29-1719	A-7478-12A501T								
	22-05-3131	* A-7478-13A102	22-12-2134	* A-7478-13A501	50-29-1720	A-7478-13A501T								
	22-05-3141	* A-7478-14A102	22-12-2144	* A-7478-14A501	50-29-1721	A-7478-14A501T								
	22-05-3151	* A-7478-15A102	22-12-2154	* A-7478-15A501	50-29-1722	A-7478-15A501T								
G	22-05-3161	* A-7478-16A102	22-12-2164	* A-7478-16A501	50-29-1723	A-7478-16A501T								
	22-05-3171	* A-7478-17A102	22-12-2174	* A-7478-17A501	50-29-1724	A-7478-17A501T								
	22-05-3181	* A-7478-18A102	22-12-2184	* A-7478-18A501	50-29-1725	A-7478-18A501T								
	22-05-3191	* A-7478-19A102	22-12-2194	* A-7478-19A501	50-29-1726	A-7478-19A501T								
	22-05-3201	* A-7478-20A102	22-12-2204	* A-7478-20A501	50-29-1727	A-7478-20A501T								
	22-05-3211	* A-7478-21A102	22-12-2214	* A-7478-21A501	50-29-1728	A-7478-21A501T								
F	22-05-3221	* A-7478-22A102	22-12-2224	* A-7478-22A501	50-29-1729	A-7478-22A501T								
	22-05-3231	* A-7478-23A102	22-12-2234	* A-7478-23A501	50-29-1730	A-7478-23A501T								
	22-05-3241	* A-7478-24A102	22-12-2244	* A-7478-24A501	50-29-1731	A-7478-24A501T								
	22-05-3251	* A-7478-25A102	22-12-2254	* A-7478-25A501	50-29-1732	A-7478-25A501T								
	22-05-3261	* A-7478-26A102	22-12-2264	* A-7478-26A501	50-29-1733	A-7478-26A501T								
E	22-05-3271	* A-7478-27A102	22-12-2274	* A-7478-27A501	50-29-1734	A-7478-27A501T								
	22-05-3281	* A-7478-28A102	22-12-2284	* A-7478-28A501	50-29-1735	A-7478-28A501T								



ADD P/N'S FCC NO. UCP2006-1815 DRAWN/ADDER CHKD: AELHAG APPR: FSM TH Y9	DESCRIPTION 2006/02/06 2006/02/06 2006/02/09	QUALITY SYMBOLS = 0.05 = 0.1	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>± ---</td> </tr> <tr> <td>2 PLACES</td> <td>± ---</td> <td>± ---</td> </tr> <tr> <td>1 PLACE</td> <td>± ---</td> <td>± ---</td> </tr> </table>		mm	INCH	4 PLACES	± ---	± ---	3 PLACES	± ---	± ---	2 PLACES	± ---	± ---	1 PLACE	± ---	± ---	DIMENSION STYLE IN/MM	SCALE ---	DESIGN UNITS INCH	THIRD ANGLE PROJECTION
			mm	INCH																		
		4 PLACES	± ---	± ---																		
		3 PLACES	± ---	± ---																		
2 PLACES	± ---	± ---																				
1 PLACE	± ---	± ---																				
		DRAWN BY GUZIK	DATE 1987/07/10	TITLE FRICTION LOCK HEADER ASY .100 CL BENT SQ PINS 7478 SERIES DWG.																		
		CHECKED BY PATEL	DATE 1987/07/10	MOLEX INCORPORATED																		
		APPROVED BY LENZ	DATE 1987/07/10	MATERIAL NO. SEE CHART	DOCUMENT NO. SDA-7478	SHEET NO. 3 OF 7																

2.54mm (.100") Pitch KK[®] Header

6410 Vertical Friction Lock



Features and Benefits

- Sizes 2 to 28 circuits
- Friction lock provides passive lock to connector with ramp
- Good in high vibration applications
- Higher backwall than the 6373 Series
- Various pin lengths available

Reference Information

Product Specification: PS-10-07
 Packaging: Bag
 UL File No.: E29179
 CSA File No.: LR19980
 Mates With: 2695 with locking ramp, 6471 and 7880
 Designed In: Inches

Electrical

Voltage: 250V
 Current: 4.0A
 Contact Resistance: 20 milliohms max.
 Dielectric Withstanding Voltage: 1500V
 Insulation Resistance: 50K Megohms min.

Physical

Housing: Nylon, UL 94V-0
 Contact: Brass, 0.64mm (.025") square
 Plating: See Table
 Operating Temperature: 0 to +75°C

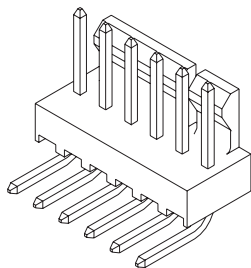
Circuits	Order No.		Lead-free
	Tin	Gold	
2	22-27-2021	22-29-2021	Yes
3	22-27-2031	22-29-2031	
4	22-27-2041	22-29-2041	
5	22-27-2051	22-29-2051	
6	22-27-2061	22-29-2061	
7	22-27-2071	22-29-2071	
8	22-27-2081	22-29-2081	
9	22-27-2091	22-29-2091	
10	22-27-2101	22-29-2101	

Circuits	Order No.		Lead-free
	Tin	Gold	
11	22-27-2111	22-29-2111	Yes
12	22-27-2121	22-29-2121	
13	22-27-2131	22-29-2131	
14	22-27-2141	22-29-2141	
15	22-27-2151	22-29-2151	
16	22-27-2161	22-29-2161	
17	22-27-2171	22-29-2171	
18	22-27-2181	22-29-2181	
19	22-27-2191	22-29-2191	

Circuits	Order No.		Lead-free
	Tin	Gold	
20	22-27-2201	22-29-2201	Yes
21	22-27-2211	22-29-2211	
22	22-27-2221	22-29-2221	
23	22-27-2231	22-29-2231	
24	22-27-2241	22-29-2241	
25	22-27-2251	22-29-2251	
26	22-27-2261	22-29-2261	
27	22-27-2271	22-29-2271	
28	22-27-2281	22-29-2281	

2.54mm (.100") Pitch KK[®] Solid Header

7478 Right Angle, Friction Lock



Features and Benefits

- Sizes 2 to 28 circuits
- Friction lock provides passive lock to connector with ramp
- 7478 with voids is 7832 Series
- Various pin lengths available
- End-to-end stackable
- Edge mount only

Reference Information

Product Specification: PS-10-07
 Packaging: Bag
 UL File No.: E29179
 CSA File No.: LR19980
 Mates With: 2695, 4455, 6471, 7720 and 7880
 Designed In: Inches

Electrical

Voltage: 250V
 Current: 4.0A
 Contact Resistance: 20 milliohms max.
 Dielectric Withstanding Voltage: 1500V
 Insulation Resistance: 50K Megohms min.

Mechanical

Durability: Tin—25 cycles max.
 Gold—100 cycles max.

Physical

Housing: Nylon, UL 94V-0
 Contact: Brass, 0.64mm (.025") square
 Plating: See Table
 Operating Temperature: 0 to +75°C

Circuits	Order No.		Lead-free
	Tin	Gold	
2	22-05-3021	22-12-2024	Yes
3	22-05-3031	22-12-2034	
4	22-05-3041	22-12-2044	
5	22-05-3051	22-12-2054	
6	22-05-3061	22-12-2064	
7	22-05-3071	22-12-2074	
8	22-05-3081	22-12-2084	
9	22-05-3091	22-12-2094	
10	22-05-3101	22-12-2104	

Circuits	Order No.		Lead-free
	Tin	Gold	
11	22-05-3111	22-12-2114	Yes
12	22-05-3121	22-12-2124	
13	22-05-3131	22-12-2134	
14	22-05-3141	22-12-2144	
15	22-05-3151	22-12-2154	
16	22-05-3161	22-12-2164	
17	22-05-3171	22-12-2174	
18	22-05-3181	22-12-2184	
19	22-05-3191	22-12-2194	

Circuits	Order No.		Lead-free
	Tin	Gold	
20	22-05-3201	22-12-2204	Yes
21	22-05-3211	22-12-2214	
22	22-05-3221	22-12-2224	
23	22-05-3231	22-12-2234	
24	22-05-3241	22-12-2244	
25	22-05-3251	22-12-2254	
26	22-05-3261	22-12-2264	
27	22-05-3271	22-12-2274	
28	22-05-3281	22-12-2284	

Note: Circuit 1 designation is used to orient the header to locate the voided circuit. Review mating connector to assure correct mating orientation.