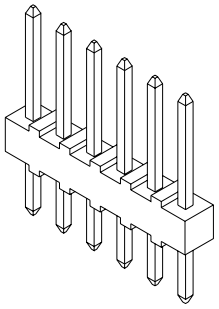
FEATURES AND SPECIFICATIONS

2.54mm (.100") Pitch KK® Solid Header

4030 Vertical



Features and Benefits
- Sizes 2 to 28 circuits
- 4030 with voids is 4380 Series
- Various pin lengths available
- Voided circuits available (contact Molex)

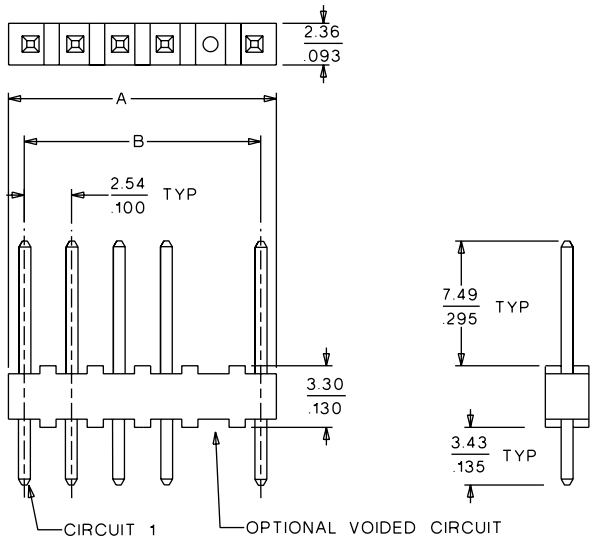
Reference Information
Product Specification: PS-10-07
Packaging: Bag
UL File No.: E29179
CSA File No.: LR19980
Mates With: 2695, 4455, 6471, 7720 and 7880
Designed In: Inches

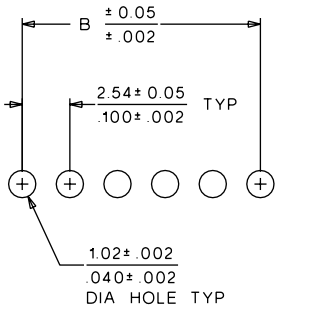
Electrical
Voltage: 250V
Current: 4.0A
Contact Resistance: 20mΩ max.
Dielectric Withstanding Voltage: 1500V
Insulation Resistance: 50K MΩ min.

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

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

CATALOG DRAWING (FOR REFERENCE ONLY)





ORDERING INFORMATION AND DIMENSIONS

Circuits	Order No. 4030 Tin	Order No. 4030 Gold	Dimension A	Dimension B
2	• 22-03-2021	• 22-10-2021	4.83 (.190)	2.54 (.100)
3	• 22-03-2031	• 22-10-2031	7.37 (.290)	5.08 (.200)
4	• 22-03-2041	• 22-10-2041	9.91 (.390)	7.62 (.300)
5	• 22-03-2051	• 22-10-2051	12.45 (.490)	10.16 (.400)
6	• 22-03-2061	• 22-10-2061	14.99 (.590)	12.70 (.500)
7	• 22-03-2071	• 22-10-2071	17.53 (.690)	15.24 (.600)
8	• 22-03-2081	• 22-10-2081	20.07 (.790)	17.78 (.700)
9	• 22-03-2091	• 22-10-2091	22.61 (.890)	20.32 (.800)
10	• 22-03-2101	• 22-10-2101	25.15 (.990)	22.86 (.900)
11	• 22-03-2111	• 22-10-2111	27.69 (1.090)	25.40 (1.000)
12	• 22-03-2121	• 22-10-2121	30.23 (1.190)	27.94 (1.100)
13	• 22-03-2131	• 22-10-2131	32.77 (1.290)	30.48 (1.200)
14	• 22-03-2141	• 22-10-2141	35.31 (1.390)	33.02 (1.300)
15	• 22-03-2151	• 22-10-2151	37.85 (1.490)	35.56 (1.400)
16	• 22-03-2161	• 22-10-2161	40.39 (1.590)	38.10 (1.500)
17	• 22-03-2171	• 22-10-2171	42.93 (1.690)	40.64 (1.600)
18	• 22-03-2181	• 22-10-2181	45.47 (1.790)	43.18 (1.700)
19	• 22-03-2191	• 22-10-2191	48.01 (1.890)	45.72 (1.800)
20	• 22-03-2201	• 22-10-2201	50.55 (1.990)	48.26 (1.900)
21	• 22-03-2211	• 22-10-2211	53.09 (2.090)	50.80 (2.000)
22	• 22-03-2221	• 22-10-2221	53.63 (2.190)	53.34 (2.100)
23	• 22-03-2231	• 22-10-2231	58.17 (2.290)	55.88 (2.200)
24	• 22-03-2241	• 22-10-2241	60.71 (2.390)	58.42 (2.300)
25	• 22-03-2251	• 22-10-2251	63.25 (2.490)	60.96 (2.400)
26	• 22-03-2261	• 22-10-2261	65.79 (2.590)	63.50 (2.500)
27	• 22-03-2271	• 22-10-2271	68.33 (2.690)	66.04 (2.600)
28	22-03-2281	22-10-2281	70.87 (2.790)	68.58 (2.700)

• US Standard Product, available through Molex franchised distributors

Note: In the Far East, the polyester product has different Engineering No. and Order No.
Circuit 1 designation is used to orient the header to locate the voided circuit. Review mating connector to assure correct mating orientation.

PRODUCT SPECIFICATION

1.0 SCOPE

This Product Specification covers the 2.54 mm (.100 inch) centerline (pitch) 0.64 mm (.025) square pin headers when mated with either printed circuit board (PCB) connectors or connectors terminated with 22 to 28 AWG wire using crimp technology.

2.0 PRODUCT DESCRIPTION

2.1 PRODUCT NAME AND SERIES NUMBERS

Crimp Terminals: 2759, 41572, 6459
Crimp Housings: 2695
PCB Connectors: 4455, 42625
Headers: 4030, 4094, 6373, 7478, 42225, 42226, 42227, 42228, 42152, 42153, 42375, 42376, 42377, 42624.
Other products conforming to this specification are noted on the individual drawings.

2.2 DIMENSIONS, MATERIALS, PLATINGS AND MARKINGS

Terminal Material: Brass or Phos. Bronze (for Max performance use phos bronze material.)
Housing: Nylon or Polyester
Pins: Brass or Phos. Bronze
For more information on dimensions, materials, and plating see the individual drawings.

2.3 SAFETY AGENCY APPROVALS

UL File Number …….. E29179
CSA ……...LR19980

3.0 APPLICABLE DOCUMENTS AND SPECIFICATIONS

None

4.0 RATINGS

4.1 VOLTAGE

250 Volts

4.2 CURRENT AND APPLICABLE WIRES

(Current is dependent on connector size, contact material, plating, ambient temperature, printed circuit board characteristics and related factors. Actual current rating is application dependent and should be evaluated for each application.)

AWG	Amps (Max)	Outside Insulation Diameter
22	4.00	See Drawings
24	3.75	See Drawings
26	3.50	See Drawings
28	3.00	See Drawings

4.3 TEMPERATURE (ambient + 30° temp rise)

Operating: 0°C to +75°C
Nonoperating: - 40°C to +105°C

5.0 PERFORMANCE

5.1 ELECTRICAL REQUIREMENTS

DESCRIPTION	TEST CONDITION	REQUIREMENT
Contact Resistance (Low Level)	Mate connectors: apply a maximum voltage of 20 mV and a current of 100 mA.	10 milliohms MAXIMUM [initial]
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.	2 milliohms MAXIMUM [initial]
Insulation Resistance	Unmate & unmount connectors: apply a voltage of 500 VDC between adjacent terminals and between terminals to ground.	1000 Megohms MINIMUM
Dielectric Withstanding Voltage	Unmate connectors: apply a voltage of {two times the rated voltage plus 1000 volts} VAC for 1 minute between adjacent terminals and between terminals to ground.	No breakdown
Capacitance	Measure between adjacent terminals at 1 MHz.	2 picofarads MAXIMUM
Temperature Rise (via Current Cycling)	Mate connectors: measure the temperature rise at the rated current after: 1) 96 hours (steady state) 2) 240 hours (45 minutes ON and 15 minutes OFF per hour) 3) 96 hours (steady state)	Temperature rise: +30°C MAXIMUM

5.2 MECHANICAL REQUIREMENTS

DESCRIPTION	TEST CONDITION	REQUIREMENT
Connector Mate and Unmate Forces	Per circuit when mated to an .025 Sq. pin. Mate and unmate connector (male to female) at a rate of 25 ± 6 mm (1 ± ¼ inch) per minute.	1.95 N (0.438 lbf) MAXIMUM insertion force & 0.56 N (0.125 lbf) MINIMUM withdrawal force
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. (Forces will change with platings and materials.)	17.8 N (4.0 lbf) MINIMUM withdrawal force
Terminal Insertion Force (into Housing)	Apply an axial insertion force on the terminal at a rate of 25 ± 6 mm (1 ± ¼ inch). (Forces will change with platings and materials.)	6.67 N (1.5 lbf) MAXIMUM insertion force
Durability	Mate connectors up to 25 cycles at a maximum rate of 10 cycles per minute prior to Environmental Tests.	10 milliohms MAXIMUM (change from initial)
Vibration (Random)	Mate connectors and vibrate per EIA 364-28, test condition VII.	10 milliohms MAXIMUM (change from initial) & Discontinuity < 1 microsecond
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).	10 milliohms MAXIMUM (change from initial]) & Discontinuity < 1 microsecond
Wire Pullout Force (Axial)	Apply an axial pullout force on the wire at a rate of 25 ± 6 mm (1 ± ¼ inch). (For maximum performance use Molex application tooling with stranded tinned copper wire)	22 awg = 44 N (10 lbf) 24 awg = 35 N (8 lbf) 26 awg = 26 N (6 lbf) 28 awg = 17 N (4 lbf) 30 awg = 13 N (3 lbf)
Normal Force	Apply a perpendicular force.	2.94 N (300 grams) average

5.3 ENVIRONMENTAL REQUIREMENTS

DESCRIPTION	TEST CONDITION	REQUIREMENT
Shock (Thermal)	Mate connectors; expose to 5 cycles of: Temperature °C — Duration (Minutes) -40 +0/-3 — 30 +25 ±10 — 5 MAXIMUM +105 +3/-0 — 30 +25 ±10 — 5 MAXIMUM	10 milliohms MAXIMUM (change from initial) & Visual: No Damage
Thermal Aging	Mate connectors; expose to: 96 hours at 105 ± 2°C	10 milliohms MAXIMUM (change from initial]) & Visual: No Damage
Humidity (Steady State)	Mate connectors: expose to a temperature of 40 ± 2°C with a relative humidity of 90-95% for 96 hours. Note: Remove surface moisture and air dry for 1 hour prior to measurements.	10 milliohms MAXIMUM (change from initial) & Dielectric Withstanding Voltage: No Breakdown at 500 VAC & Insulation Resistance: 1000 Megohms MINIMUM & Visual: No Damage
Humidity (Cyclic)	Mate connectors: cycle per EIA-364-31: 24 cycles at temperature 25 ± 3°C at 80 ± 5% relative humidity and 65 ± 3°C at 50 ± 5% relative humidity; dwell time of 1.0 hour; ramp time of 0.5 hours. {Note: Remove surface moisture and air dry for 1 hour prior to measurements.}	10 milliohms MAXIMUM (change from initial) & Dielectric Withstanding Voltage: No Breakdown at 500 VAC & Insulation Resistance: 1000 Megohms MINIMUM & Visual: No Damage
Solderability	Per SMES-152	Solder coverage: 95% MINIMUM (per SMES-152)

5.3 ENVIRONMENTAL REQUIREMENTS

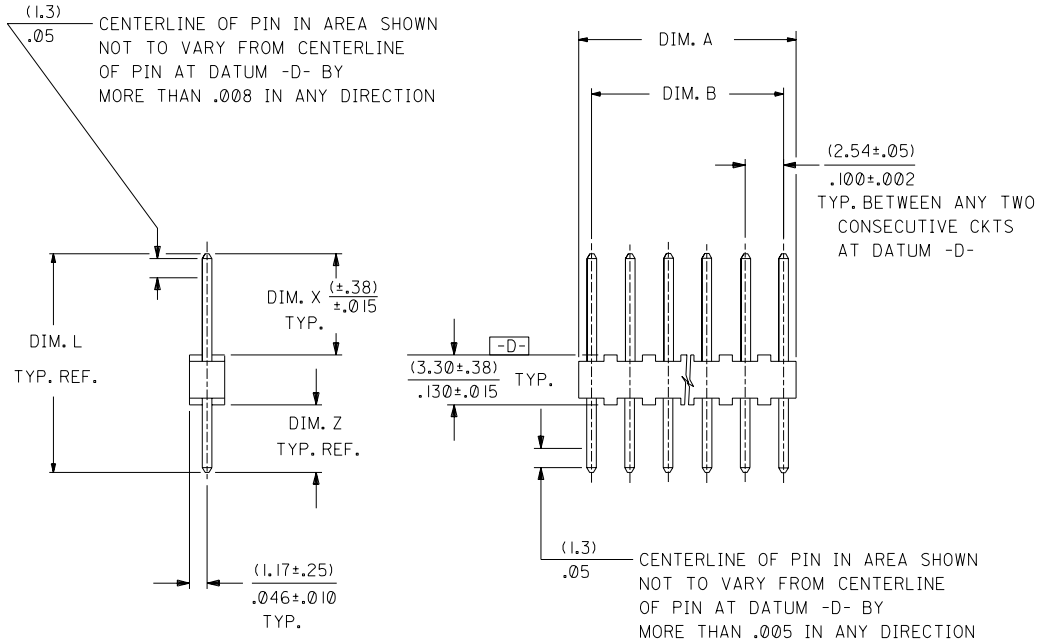
DESCRIPTION	TEST CONDITION	REQUIREMENT
Solder Resistance	Dip connector terminal tails in solder: Solder Duration: 5 ± 0.5 seconds; Solder Temperature: 230 ± 5°C	Visual: No Damage to insulator material
Salt Spray	Mate connectors: Duration: 48 hours exposure; Atmosphere: salt spray from a 5% solution; Temperature: 35 +1/-2°C	10 milliohms MAXIMUM (change from initial) & Visual: No Damage
Cold Resistance	Mate connectors: Duration: 96 hours; Temperature: -40 ± 3°C	10 milliohms MAXIMUM (change from initial) & Visual: No Damage
Corrosive Atmosphere: Flowing Mixed Gas (FMG)	Mate connectors: Test per EIA-364-65, method 2A	10 milliohms MAXIMUM (change from initial) & Visual: No Damage

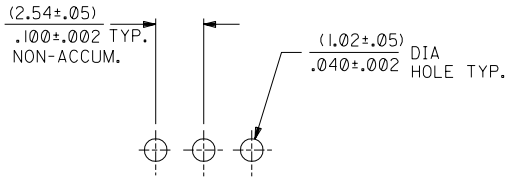
6.0 PACKAGING

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

7.0 GAGES AND FIXTURES

8.0 OTHER





RECOMMENDED P.C. BOARD HOLE DIMENSIONS

4030

CKTS. NO. OF	DIM. B	DIM. A
2	.100 ± .002 (2.54 ± .05)	.190 ± .008 (4.83 ± .20)
3	.200 ± .005 (5.08 ± .13)	.290 ± .008 (7.37 ± .20)
4	.300 ± .005 (7.62 ± .13)	.390 ± .008 (9.91 ± .20)
5	.400 ± .005 (10.16 ± .13)	.490 ± .008 (12.45 ± .20)
6	.500 ± .006 (12.70 ± .15)	.590 ± .009 (14.99 ± .23)
7	.600 ± .006 (15.24 ± .15)	.690 ± .009 (17.53 ± .23)
8	.700 ± .006 (17.78 ± .15)	.790 ± .009 (20.07 ± .23)
9	.800 ± .007 (20.32 ± .18)	.890 ± .010 (22.61 ± .25)
10	.900 ± .007 (22.86 ± .18)	.990 ± .010 (25.15 ± .25)
11	1.000 ± .007 (25.40 ± .18)	1.090 ± .010 (27.69 ± .25)
12	1.100 ± .008 (27.94 ± .20)	1.190 ± .011 (30.23 ± .28)
13	1.200 ± .008 (30.48 ± .20)	1.290 ± .011 (32.77 ± .28)
14	1.300 ± .008 (33.02 ± .20)	1.390 ± .011 (35.31 ± .28)
15	1.400 ± .008 (35.56 ± .20)	1.490 ± .011 (37.85 ± .28)
16	1.500 ± .008 (38.10 ± .20)	1.590 ± .011 (40.39 ± .28)
17	1.600 ± .009 (40.64 ± .23)	1.690 ± .012 (42.93 ± .30)
18	1.700 ± .009 (43.18 ± .23)	1.790 ± .012 (45.47 ± .30)
19	1.800 ± .009 (45.72 ± .23)	1.890 ± .012 (48.01 ± .30)
20	1.900 ± .009 (48.26 ± .23)	1.990 ± .012 (50.55 ± .30)
21	2.000 ± .010 (50.80 ± .25)	2.090 ± .013 (53.09 ± .33)
22	2.100 ± .010 (53.34 ± .25)	2.190 ± .013 (55.63 ± .33)
23	2.200 ± .010 (55.88 ± .25)	2.290 ± .013 (58.17 ± .33)
24	2.300 ± .010 (58.42 ± .25)	2.390 ± .013 (60.71 ± .33)
25	2.400 ± .011 (60.96 ± .28)	2.490 ± .014 (63.25 ± .36)
26	2.500 ± .011 (63.50 ± .28)	2.590 ± .014 (65.79 ± .36)
27	2.600 ± .011 (66.04 ± .28)	2.690 ± .014 (68.33 ± .36)
28	2.700 ± .011 (68.58 ± .28)	2.790 ± .014 (70.87 ± .36)

NOTES:

1. PINS MUST CONFORM TO SOLDERABILITY SPEC. 152.
2. PIN PUSH OUT FORCE: 2 LBS. MIN.
3. PARTS ARE STACKABLE END TO END AND SIDE TO SIDE ON (2.54)/.100 CENTERS.
4. MATERIAL: NYLON, UL 94V-0, COLOR: WHITE
7. PARTS CONFORM TO PROD. SPEC. 10-07.
8. FOR CUSTOMER DEFINED OPTIONS SUCH AS:
   DIM L, X, AND Z
   PLATINGS, AND PACKAGING
   SEE DRAWING SDA-4030-002

MFG.	SH.	REV.	LTR.	REVISIONS
	2	CG	CH	WAS M340 RED UCR2002-0675 12/27/2002 SAMIEC
	1	CHI	CHI	REV BOW UCP2003-1608 1/23/2003 SAMIEC

DIMENSIONS SHOWN (METRIC) INCH
UNLESS OTHERWISE SPECIFIED TOLERANCES: ANGULAR ± 1/2°

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

DRAFT WHERE APPLICABLE MUST REMAIN WITHIN DIMENSIONS

▽ = .00 ▼ = .0

REVISE ONLY ON CAD SYSTEM

TITLE
KK HEADER
.100 ℄
STANDARD CATALOG PRODUCTS

molex MOLEX INCORPORATED LISLE,ILL. 60532 U.S.A.

SHEET NO. 1 OF 2

DATE 06/10/88

PART NO. SEE CHART

DRWG. NO. SDA-4030

DRWG. BY	CHK'D. BY	APP'D. BY	FILE NAME	SCALE
SAMIEC	PATEL	LENZ	S4030X1	:

DIV. C SIZE C

4030

ENG. NO.	PIN NO.	DIM. L	DIM. X	DIM. Z	PACKAGE PER	EDP NO. IN COL NO
A-4030 -NA(102)	2766 -1(102)	.560 (14.22)	.295 (7.49)	.135 (3.43)	PK-4030-001 BULK	1
A-4030 -NA(501)	2766 -1(501)	.560 (14.22)	.295 (7.49)	.135 (3.43)	PK-4030-001 BULK	2
A- -	-	( )	( )	( )		
A- -	-	( )	( )	( )		
A- -	-	( )	( )	( )		
A- -	-	( )	( )	( )		

COLUMN NO. 1			COLUMN NO. 2		
EDP NO.	ENG. NO.	NO OF CKTS	EDP NO.	ENG. NO.	NO OF CKTS
22-03-2021	A-4030-02A(102)	2	22-10-2021	A-4030-02A(501)	2
22-03-2031	A-4030-03A(102)	3	22-10-2031	A-4030-03A(501)	3
22-03-2041	A-4030-04A(102)	4	22-10-2041	A-4030-04A(501)	4
22-03-2051	A-4030-05A(102)	5	22-10-2051	A-4030-05A(501)	5
22-03-2061	A-4030-06A(102)	6	22-10-2061	A-4030-06A(501)	6
22-03-2071	A-4030-07A(102)	7	22-10-2071	A-4030-07A(501)	7
22-03-2081	A-4030-08A(102)	8	22-10-2081	A-4030-08A(501)	8
22-03-2091	A-4030-09A(102)	9	22-10-2091	A-4030-09A(501)	9
22-03-2101	A-4030-10A(102)	10	22-10-2101	A-4030-10A(501)	10
22-03-2111	A-4030-11A(102)	11	22-10-2111	A-4030-11A(501)	11
22-03-2121	A-4030-12A(102)	12	22-10-2121	A-4030-12A(501)	12
22-03-2131	A-4030-13A(102)	13	22-10-2131	A-4030-13A(501)	13
22-03-2141	A-4030-14A(102)	14	22-10-2141	A-4030-14A(501)	14
22-03-2151	A-4030-15A(102)	15	22-10-2151	A-4030-15A(501)	15
22-03-2161	A-4030-16A(102)	16	22-10-2161	A-4030-16A(501)	16
22-03-2171	A-4030-17A(102)	17	22-10-2171	A-4030-17A(501)	17
22-03-2181	A-4030-18A(102)	18	22-10-2181	A-4030-18A(501)	18
22-03-2191	A-4030-19A(102)	19	22-10-2191	A-4030-19A(501)	19
22-03-2201	A-4030-20A(102)	20	22-10-2201	A-4030-20A(501)	20
22-03-2211	A-4030-21A(102)	21	22-10-2211	A-4030-21A(501)	21
22-03-2221	A-4030-22A(102)	22	22-10-2221	A-4030-22A(501)	22
22-03-2231	A-4030-23A(102)	23	22-10-2231	A-4030-23A(501)	23
22-03-2241	A-4030-24A(102)	24	22-10-2241	A-4030-24A(501)	24
22-03-2251	A-4030-25A(102)	25	22-10-2251	A-4030-25A(501)	25
22-03-2261	A-4030-26A(102)	26	22-10-2261	A-4030-26A(501)	26
22-03-2271	A-4030-27A(102)	27	22-10-2271	A-4030-27A(501)	27
22-03-2281	A-4030-28A(102)	28	22-10-2281	A-4030-28A(501)	28

	SEE SHEET 1		SEE SHEET 1
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	SEE SHEET 1		SEE SHEET 1
	SEE SHEET 1		SEE SHEET 1
	SEE SHEET 1		SEE SHEET 1
	SEE SHEET 1	CG	SEE SHEET 1
LTR.	REVISIONS	LTR.	REVISIONS

DIMENSIONS SHOWN (METRIC) INCH

UNLESS OTHERWISE SPECIFIED TOLERANCES: ANGULAR ± 1/2°

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

DRAFT WHERE APPLICABLE MUST REMAIN WITHIN DIMENSIONS

DRWG. BY SAMIEC | CHK'D. BY PATEL | APP'D. BY LENZ | SCALE :

▽ = 0 ▼ = 0 REVISE ONLY ON CAD SYSTEM

TITLE
KK HEADER
STANDARD CATALOG PRODUCTS

molex MOLEX INCORPORATED LISLE,ILL. 60532 U.S.A. | SHEET NO. 2 | DATE 7/15/93

PART NO. SEE CHART | DRWG. NO. SDA-4030

FILE NAME

DIV. C | SIZE C

4030