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FEATURES AND SPECIFICATIONS

Features and Benefits

- Sizes 1 to 25 circuits
- 6471 is end-to-end stackable (2 housings only)
- 2695 version with or without locking ramp and polarizing ribs

Reference Information

Product Specification: PS-10-07

Packaging: Bag UL File No.: E29179 CSA File No.: LR19980

Mates With: Molex KK 2.54mm (.100") pitch headers and

0.04mm (.025") pins

Use With: 2695—2759, 6459 or 41572 terminals

6471—4809 terminals Designed In: Inches

Electrical*

Voltage: 250V

Current: Phosphor Bronze—4.0A max.

Brass—2.5A max.

Contact Resistance: $20m\Omega$ max. Dielectric Withstanding Voltage: 1500V AC Insulation Resistance: 50K M Ω min.

Mechanical*

Contact Insertion Force: 681g (1.5 lb) max. Contact Retention to Housing: 3.63kg (8 lb) min.

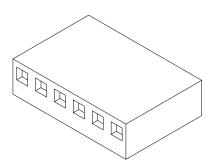
Mating Force: 199g max. Unmating Force: 57g min. Normal Force: 200g min.

Physical

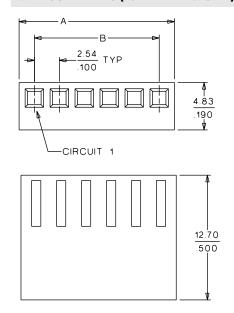
Housing: 2695—Red nylon, UL 94V-0 6471—White nylon, UL 94V-0 Operating Temperature: 0 to +75°C

Olex 2.54mm (.100") Pitch KK® Crimp Terminal Housing

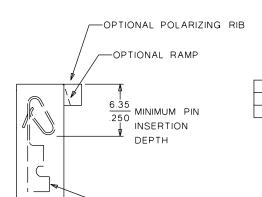
2695/6471



CATALOG DRAWING (FOR REFERENCE ONLY)



Note: When mating polarizing rib version with breakaway friction lock header or polarizing wall series, the end friction lock or polarizing wall of header must be removed.



	Order No.
Polarizing Key	15-04-9209
Polarizing Peg	15-04-9210

Note: 2695 shown

ORDERING INFORMATION AND DIMENSIONS

	Order No.			Dimension		
	2695		6471	Dimension		
Circuits	With Locking Ramp	With Locking Ramp and Polarizing Ribs	Without Locking Ramp or Ribs	With Locking Ramp and Polarizing Ribs†	A	В
1			• 22-01-2011		3.10 (.122)	
2	• 22-01-2027	• 22-01-3027	• 22-01-2021	22-01-2025	5.60 (.220)	2.54 (.100)
3	• 22-01-2037	• 22-01-3037	• 22-01-2031	22-01-2035	8.10 (.320)	5.08 (.200)
4	• 22-01-2047	• 22-01-3047	• 22-01-2041	22-01-2045	10.70 (.420)	7.62 (.300)
5	• 22-01-2057	• 22-01-3057	• 22-01-2051	22-01-2055	13.20 (.520)	10.16 (.400)
6	• 22-01-2067	• 22-01-3067	• 22-01-2061	22-01-2065	15.80 (.620)	12.70 (.500)
7	• 22-01-2077	• 22-01-3077	• 22-01-2071	22-01-2075	18.30 (.720)	15.24 (.600)
8	• 22-01-2087	• 22-01-3087	• 22-01-2081	22-01-2085	20.90 (.820)	17.78 (.700)
9	• 22-01-2097	• 22-01-3097	• 22-01-2091	22-01-2095	23.40 (.920)	20.32 (.800)
10	• 22-01-2107	• 22-01-3107	• 22-01-2101	22-01-2105	25.90 (1.020)	22.86 (.900)
11	• 22-01-2117	• 22-01-3117	• 22-01-2111	22-01-2115	28.50 (1.120)	25.40 (1.000)
12	• 22-01-2127	• 22-01-3127	• 22-01-2121	22-01-2125	31.00 (1.220)	27.94 (1.100)

					Dimension	
		2695		6471	Dime	nsion
Circuits	With Locking Ramp	With Locking Ramp and Polarizing Ribs	Without Locking Ramp or Ribs	With Locking Ramp and Polarizing Ribs†	A	В
13	• 22-01-2137	• 22-01-3137	• 22-01-2131	22-01-2135	33.50 (1.320)	30.48 (1.200)
14	• 22-01-2147	• 22-01-3147	• 22-01-2141	22-01-2145	36.10 (1.420)	33.02 (1.300)
15	• 22-01-2157	• 22-01-3157	• 22-01-2151	22-01-2155	38.60 (1.520)	35.56 (1.400)
16	• 22-01-2167	• 22-01-3167	• 22-01-2161	22-01-2165	41.20 (1.620)	38.10 (1.500)
17	• 22-01-2177	• 22-01-3177	• 22-01-2171	22-01-2175	43.70 (1.720)	40.64 (1.600)
18	• 22-01-2187	• 22-01-3187	• 22-01-2181	22-01-2185	46.20 (1.820)	43.18 (1.700)
19	• 22-01-2197	• 22-01-3197	• 22-01-2191		48.80 (1.920)	45.72 (1.800)
20	• 22-01-2207	• 22-01-3207	• 22-01-2201		51.30 (2.020)	48.26 (1.900)
21	• 22-01-2217	• 22-01-3217	• 22-01-2211		53.90 (2.120)	50.80 (2.000)
22	• 22-01-2227	• 22-01-3227	• 22-01-2221		56.40 (2.220)	53.34 (2.100)
23	• 22-01-2237	• 22-01-3237	• 22-01-2231		58.90 (2.320)	55.88 (2.200)
24	• 22-01-2247	• 22-01-3247	• 22-01-2241		61.50 (2.420)	58.42 (2.300)
25	• 22-01-2257	• 22-01-3257	• 22-01-2251		64.00 (2.520)	60.96 (2.400)

TERMINAL SHOWN FOR REFERENCE ONLY

Order No.

C-114 MX01

2.54mm

[•] US Standard Product, available through Molex franchised distributors

^{*} When mated with Molex product only

 $^{^{\}dagger}$ For circuits 19-28, contact Molex



1.0 SCOPE

This Product Specification covers the following

- A. 2.50 mm centerline (pitch) 0.64 mm square pin headers
- B. 2.54 mm centerline (pitch) 0.64 mm 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: 4809, 2759, 41572, 6459, 40445, 8088

Crimp Housings: 2695, 5051,6471 PCB Connectors: 7534,4455

Headers: 3022,3202,3094,3494,6410,7930,7395,90578

Wire to board connector: 7690

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 Non-operating: -40°C to +105°C

REVISION:	ECR/ECN INFORMATION: EC No: E2003 -0971 DATE: 2003 / 03 / 18	2.50mm	JCT SPECIFICATION 2.54mm CENTE CONNECTORS		1 of 5
DOCUMENT NUMBER:		CREATED / REVISED BY:	CHECKED BY:	APPRO\	/ED BY:
PS-99020-0088		B MAGUIRE	L Kiernan	M Wi	lhite
TEMPLATE FILENAME: PRODUCT_SPEC[SIZE_A](V.1).DOC					



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 Megaohms 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

REVISION:	ECR/ECN INFORMATION: EC No: E2003 -0971 DATE: 2003 / 03 / 18	2.50mm	JCT SPECIFICATION 2.54mm CENTE CONNECTORS		2 of 5
DOCUMEN	T NUMBER:	CREATED / REVISED BY:	CHECKED BY:	APPRO\	/ED BY:
PS-99020-0088		B MAGUIRE	L Kiernan	M Wi	lhite
TEMPLATE FILENAME: PRODUCT SPECISIZE AY(V.1),DOC					



5.2 MECHANICAL REQUIREMENTS

DESCRIPTION	TEST CONDITION	REQUIREMENT
Connector Mate and Unmate Forces	Per circuit when mated to a 0.635mm Sq. pin. Mate and unmate connector (male to female) at a rate of 25 ± 6 mm per minute.	1.95 N MAXIMUM insertion force & 0.56 N MINIMUM withdrawal force
Terminal Retention Force (in Housing)	Axial pullout force on the terminal in the housing at a rate of 25 ± 6 mm per minute. (Forces will change with platings and materials.)	17.8 N MINIMUM withdrawal force
Terminal Insertion Force (into Housing)	Apply an axial insertion force on the terminal at a rate of 25 ± 6 mm. (Forces will change with platings and materials.)	6.67 N 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. (For maximum performance use Molex application tooling with stranded tinned copper wire)	22 awg = 44 N 24 awg = 35 N 26 awg = 26 N 28 awg = 17 N 30 awg = 13 N
Normal Force	Apply a perpendicular force.	2.94 N (300 grams) average

REVISION:	ECR/ECN INFORMATION: EC No: E2003 -0971 DATE: 2003 / 03 / 18	2.50mm	JCT SPECIFICATION 4 2.54mm CENTE CONNECTORS		3 of 5
DOCUMENT NUMBER:		CREATED / REVISED BY:	CHECKED BY:	APPRO\	VED BY:
PS-99020-0088		B MAGUIRE	L Kiernan	M Wi	lhite
	TEMPLATE FILENAME: PRODUCT SPECISIZE A1(V.1),DOC				



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 Megaohms 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 Megaohms MINIMUM & Visual: No Damage
Solderability	Per SMES-152	Solder coverage: 95% MINIMUM (per SMES-152)

REVISION:	ECR/ECN INFORMATION: EC No: E2003 -0971 DATE: 2003 / 03 / 18	PRODUCT SPECIFICATION 2.50mm & 2.54mm CENTER KK CONNECTORS		4 of 5	
DOCUMENT NUMBER:		CREATED / REVISED BY:	CHECKED BY:	APPRO\	 /ED BY:
PS-99020-0088		B MAGUIRE	L Kiernan	M Wi	lhite
TEMPLATE FILENAME: PRODUCT SPEC(SIZE A)(V.1).DOC					



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

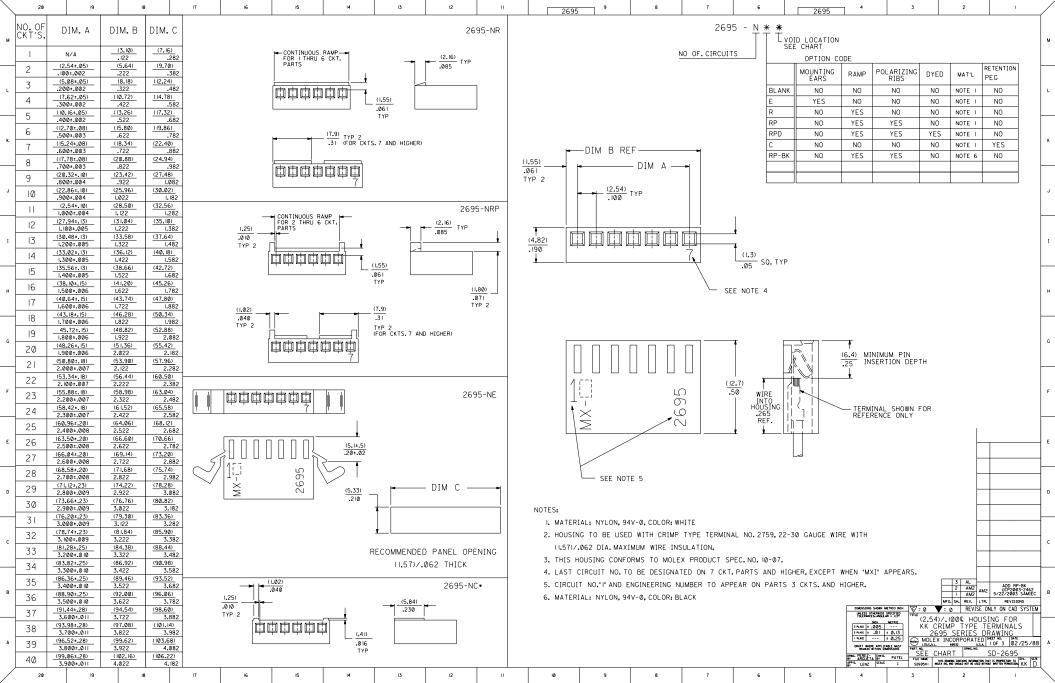
6.0 PACKAGING

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

7.0 GAGES AND FIXTURES

8.0 OTHER

REVISION:	ECR/ECN INFORMATION: EC No: E2003 -0971 DATE: 2003 / 03 / 18	PRODU 2.50mm	5 of 5						
DOCUMENT NUMBER:		CREATED / REVISED BY:	CHECKED BY:	APPRO\	/ED BY:				
PS	5-99020-0088	B MAGUIRE	L Kiernan	M Wilhite					
TEMPLATE FILENAME: PRODUCT. SPECISIZE, A1/V 1) DOC									



29	695-NC+										J			1			
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