

# Molex 44812-0002 PDF

深圳创唯电子有限公司

<http://www.molex-connect.com>



# PRODUCT SPECIFICATION

## KK 100 PCB CONNECTOR, LOW PROFILE

### 1.0 SCOPE

This Product Specification covers the 2.54 mm (.100 inch) centerline (pitch) printed circuit board (PCB) connector series with tin or gold plating, when mated with KK 100 Headers.

### 2.0 PRODUCT DESCRIPTION

#### 2.1 PRODUCT NAME AND SERIES NUMBER(S)

KK 100 PCB Connector, Low Profile: 44812  
KK 100 Headers: 4030, 4094, 42375, 42376, 42377

#### 2.2 DIMENSIONS, MATERIALS, PLATINGS AND MARKINGS

Connector: High Temperature Nylon, Glass Filled  
Terminals: Modified Tin/Brass Alloy, with tin or gold plating  
Headers: Nylon or Polyester  
Pins: Brass or Phospor Bronze, with tin or gold plating

#### 2.3 SAFETY AGENCY APPROVALS

UL File Number: ..... E29179  
CSA.....LR19980

### 3.0 RATINGS

#### 3.1 VOLTAGE

500 Volts AC (or 600 Volts DC)

**3.2 CURRENT** (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.)

5 Amps per circuit max.

#### 3.3 TEMPERATURE (ambient + 30°C temp rise)

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

REVISION: <b>B3</b>	ECR/ECN INFORMATION: EC No: 113831 DATE: 23/02/2017	TITLE: <b>PRODUCT SPECIFICATION KK 100 PCB CONNECTOR LOW PROFILE</b>	SHEET No. <b>1 of 5</b>
DOCUMENT NUMBER: <b>PS-44812-001</b>	CREATED / REVISED BY: <b>SS06</b>	CHECKED BY: <b>SS06</b>	APPROVED BY: <b>ISHWARG</b>



# PRODUCT SPECIFICATION

## 4.0 PERFORMANCE

### 4.1 ELECTRICAL REQUIREMENTS

DESCRIPTION	TEST CONDITION	REQUIREMENT
<b>Contact Resistance (Low Level)</b>	Mate connectors: apply a maximum voltage of 20 mV and a current of 100 mA. (Measurement locations in Section 7.0)	30 milliohms MAXIMUM [initial]
<b>Contact Resistance @ Rated Current</b>	Mate connectors: apply a maximum voltage of 20 mV at rated current. (Measurement locations in Section 7.0)	30 milliohms MAXIMUM [initial]
<b>Insulation Resistance</b>	Unmate & unmount connectors: apply a voltage of 500 VDC between adjacent terminals and between terminals to ground.	1000 Megohms MINIMUM
<b>Dielectric Withstanding Voltage</b>	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; current leakage < 5 mA
<b>Capacitance</b>	Measure between adjacent terminals at 1 MHz.	2 picofarads MAXIMUM
<b>Temperature Rise (via Current Cycling)</b>	Mate connectors: measure the temperature rise at the rated current after: 96 hours OR 240 hours  (45 minutes ON and 15 minutes OFF per hour).	Temperature rise: +30°C MAXIMUM over ambient temperature

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DOCUMENT NUMBER: <b>PS-44812-001</b>	CREATED / REVISED BY: <b>SS06</b>	CHECKED BY: <b>SS06</b>	APPROVED BY: <b>ISHWARG</b>



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## 4.2 MECHANICAL REQUIREMENTS

DESCRIPTION	TEST CONDITION	REQUIREMENT
<b>Connector Mate and Unmate Forces</b>	Mate and unmate connector (male to female) at a rate of $25 \pm 6$ mm ( $1 \pm \frac{1}{4}$ inch) per minute. (per circuit)	7.6 N (1.7 lbf) MAXIMUM insertion force & 2.7 N (0.6 lbf) MINIMUM withdrawal force
<b>Terminal Retention Force (in Housing)</b>	Axial pullout force on the terminal in the housing at a rate of $25 \pm 6$ mm ( $1 \pm \frac{1}{4}$ inch) per minute.	15.6N (3.5 lbf) MINIMUM retention force
<b>Durability</b>	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)
<b>Vibration (Random)</b>	Mate connectors and vibrate per EIA 364-28, test condition VII.	10 milliohms MAXIMUM (change from initial)
<b>Shock (Mechanical)</b>	Mate connectors and shock at 50 g's with $\frac{1}{2}$ sine wave (11 milliseconds) shocks in the $\pm X, \pm Y, \pm Z$ axes (18 shocks total).	10 milliohms MAXIMUM (change from initial)
<b>Normal Force</b>	Apply a perpendicular force.	2.54 N (250 grams) MINIMUM
<b>Fretting Corrosion (Hammer Shock)</b>	Mate connectors: strike test platform at a rate of 10 cycles per minute with a 0.98 N (100 gram) hammer for 20,000 cycles.	10 milliohms MAXIMUM (change from initial) & Visual: No Damage

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DOCUMENT NUMBER: <b>PS-44812-001</b>	CREATED / REVISED BY: <b>SS06</b>	CHECKED BY: <b>SS06</b>	APPROVED BY: <b>ISHWARG</b>



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## 4.3 ENVIRONMENTAL REQUIREMENTS

DESCRIPTION	TEST CONDITION	REQUIREMENT										
<b>Fretting Corrosion (Thermal Shock)</b>	Mate connectors: expose for 1,000 cycles between temperatures 25 and 85°C; dwell 0.5 hours at each temperature.  {Note: Remove surface moisture and air dry for 1 hour prior to measurements; monitor low level contact resistance every 250 cycles.}	10 milliohms MAXIMUM (change from initial) & Visual: No Damage										
<b>Shock (Thermal)</b>	Mate connectors; expose to 5 cycles of: <table border="1" style="display: inline-table; vertical-align: top;"> <thead> <tr> <th>Temperature °C</th> <th>Duration (Minutes)</th> </tr> </thead> <tbody> <tr> <td>-40 +0/-3</td> <td>30</td> </tr> <tr> <td>+25 ±10</td> <td>5 MAXIMUM</td> </tr> <tr> <td>+105 +3/-0</td> <td>30</td> </tr> <tr> <td>+25 ±10</td> <td>5 MAXIMUM</td> </tr> </tbody> </table>	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
Temperature °C	Duration (Minutes)											
-40 +0/-3	30											
+25 ±10	5 MAXIMUM											
+105 +3/-0	30											
+25 ±10	5 MAXIMUM											
<b>Thermal Aging</b>	Mate connectors; expose to: 240 hours at 105 ± 2°C OR 500 hours at 85 ± 2°C	10 milliohms MAXIMUM (change from initial) & Visual: No Damage										
<b>Humidity (Steady State)</b>	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										
<b>Humidity (Cyclic)</b>	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										

REVISION:	ECR/ECN INFORMATION:	TITLE:	SHEET No.
<b>B3</b>	EC No: 113831 DATE: 23/02/2017	<b>PRODUCT SPECIFICATION KK 100 PCB CONNECTOR LOW PROFILE</b>	<b>4 of 5</b>
DOCUMENT NUMBER:	CREATED / REVISED BY:	CHECKED BY:	APPROVED BY:
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## 5.3 ENVIRONMENTAL REQUIREMENTS

DESCRIPTION	TEST CONDITION	REQUIREMENT
<b>Solderability</b>	Per SMES-152	Solder coverage: 95% MINIMUM (per SMES-152)
<b>Solder Resistance</b>	Dip connector terminal tails in solder: Solder Duration: 5 ± 0.5 seconds; Solder Temperature: 245 ± 5°C  {Recommend same parameters as SMES-152.}	Visual: No Damage to insulator material
<b>Cold Resistance</b>	Mate connectors: Duration: 96 hours; Temperature: -40 ± 3°C	10 milliohms MAXIMUM (change from initial) & Visual: No Damage

## 5.0 PACKAGING

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

## 6.0 GAGES AND FIXTURES

## 7.0 OTHER INFORMATION

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