Molex 38720-6326 PDF

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PRODUCT SPECIFICATION FOR 3871X/3872X (BEAU 71/72/72R) SERIES PCB TERMINAL BLOCKS

1.0 SCOPE

This Product Specification covers the 9.53 mm (.375 inch) centerline (pitch) printed circuit board (PCB) terminal block series with tin plating.

2.0 PRODUCT DESCRIPTION

2.1 3871X/3872X SERIES PCB TERMINAL BLOCKS

2.2 DIMENSIONS, MATERIALS, PLATINGS AND MARKINGS

- **A. ALL OF THESE ITEMS ARE DESCRIBED ON THE INDIVIDUAL SALES DRAWINGS**
- **B. MATERIALS USED**
  - **I. HOUSING MATERIAL: POLYESTER (PBT), 30% GLASS FILLED, UL94V-0**
    1. **COLOR: BLACK**
  - **II. TERMINAL: BRASS**
    1. **FINISH: SEMI-BRIGHT TIN, THICKNESS= 3.8 µm (150 µin) MIN. OVER COPPER, THICKNESS= 1.3 µm (50 µin) MIN. OVERALL**
  - **III. MOUNTING PLATE: BRASS**
    1. **FINISH: BRIGHT NICKEL, THICKNESS= 3.8 µm (150 µin) MIN. OVER COPPER STRIKE, THICKNESS= 0.6 µm (25 µin) MIN. OVERALL**
  - **IV. SCREW (STANDARD & BEAU -50 OPTION): STEEL**
    1. **FINISH: ZINC, THICKNESS= 5.1 µm (200 µin) MIN. WITH TRIVALENT CLEAR CHROMATE CONVERSION COATING**
  - **V. SCREW (BEAU -49 OPTION): BRASS**
    1. **FINISH: BRIGHT NICKEL, THICKNESS= 3.8 µm (150 µin) MIN. OVER COPPER STRIKE, THICKNESS= 0.6 µm (25 µin) MIN. OVERALL**
  - **VI. SCREW (BEAU -56 OPTION): STAINLESS STEEL**
    1. **FINISH: PASSIVATED**

2.3 SAFETY AGENCY APPROVALS

- **A. UL FILE #E48521 – RECOGNIZED**
- **B. CSA FILE #025562**

3.0 APPLICABLE DOCUMENTS AND SPECIFICATIONS

3.1 UL 1059 Standard for Terminal Blocks

3.2 CSA C22.2 No. 158-1987, The Standard for Terminal Blocks

3.3 UL 486E Equipment Wiring Terminals for Use with Aluminum and/or Copper Conductors

3.4 SMES-152 Solderability Specifications

4.0 RATINGS

4.1 VOLTAGE (3871X SERIES)

UL CLASS B: 300 Volts AC (RMS)
UL CLASS C: 150 Volts AC (RMS)
CSA CLASS B: 150 Volts AC (RMS)
CSA CLASS C: 150 Volts AC (RMS)

4.2 VOLTAGE (3872X SERIES)

UL CLASS B: 300 Volts AC (RMS)
UL CLASS C: 150 Volts AC (RMS)
CSA CLASS B: 300 Volts AC (RMS)
CSA CLASS C: 300 Volts AC (RMS)

4.3 CURRENT

15 Amps – UL (STANDARD #6-32 BINDING HEAD SCREW)
20 Amps – CSA (STANDARD #6-32 BINDING HEAD SCREW)
25 Amps – UL & CSA (#6-32 WIRE CLAMP SCREW, BEAU -50 OPTION)

4.4 WIRE RANGE

14 AWG – 22 AWG (2.1 mm^2 – 0.3 mm^2) – STANDARD #6-32 BINDING HEAD SCREW
12 AWG – 22 AWG (3.3 mm^2 – 0.3 mm^2) – #6-32 WIRE CLAMP SCREW, BEAU -50 OPTION

4.5 TEMPERATURE

Operating: - 40°C to + 100°C
Nonoperating: - 40°C to + 130°C

4.6 WIRE STRIP LENGTH: 7.9 mm (.31 in)

4.7 SCREWDRIVER: #2 Phillips or 1/4" [6.4 mm (.250 in)] Slotted

4.8 TIGHTENING TORQUE

4.8.1 WIRING SCREW: 1.4 N-m (12 in-lb)

4.9 RECOMMENDED MIN. PTH DIA: 1.93 mm (.076")

5.0 PERFORMANCE

5.1 ELECTRICAL REQUIREMENTS

ITEM	DESCRIPTION	TEST CONDITION	REQUIREMENT
1	**Temperature Rise**	Appropriately mount the connectors, apply rated current and measure the temperature rise once it has stabilized per UL 1059.	Temperature rise: **+30**°C MAXIMUM
2	**Static Heating (14 AWG)**	Appropriately mount the connectors, apply a current of **20** A and measure the temperature rise once it has stabilized per UL 486E	Temperature rise: **+50**°C MAXIMUM
3	**Static Heating (12 AWG)**	Appropriately mount the connectors, apply a current of **25** A and measure the temperature rise once it has stabilized per UL 486E	Temperature rise: **+50**°C MAXIMUM
4	**Dielectric Withstanding Voltage (Agency)**	Unmate connectors: apply a voltage of **1600** VAC for **1** minute between adjacent terminals and between terminals to ground per UL 1059.	No breakdown

5.2 MECHANICAL REQUIREMENTS

ITEM	DESCRIPTION	TEST CONDITION	REQUIREMENT
5	**Secureness Test (14 AWG)**	A **0.68** kg (**1.5** lb) weight is to be held per UL486E, section 12 and CSA C22.2 NO. 158.	Joint between terminal and wire must remain intact for **30** minutes MINIMUM
6	**Secureness Test (12 AWG)**	A **0.9** kg (**2** lb) weight is to be held per UL486E, section 12 and CSA C22.2 NO. 158.	Joint between terminal and wire must remain intact for **30** minutes MINIMUM
7	**Wire Pullout Force (Axial, Min Wire Size, 22 AWG)**	Apply an axial pullout force for **1** minute on the wire per UL 486E, Section 14.	**20** N (**4.5** lbf) MINIMUM pullout force
8	**Wire Pullout Force (Axial, Max Wire Size, 14 AWG)**	Apply an axial pullout force for **1** minute on the wire per UL 486E, Section 14 following secureness test.	**50** N (**11.5** lbf) MINIMUM pullout force
9	**Wire Pullout Force (Axial, Max Wire Size, 12 AWG)**	Apply an axial pullout force for **1** minute on the wire per UL 486E, Section 14 following secureness test.	**60** N (**13.5** lbf) MINIMUM pullout force

10	**Terminal Retention**	Force required to dislodge terminals from the housing, applied at a rate of **25** ± **6** mm (**1** ± ¼ inch) per minute, in the direction opposite terminal insertion.	**178** N (**40** lbf) MINIMUM
11	**Wiring Screw Rated Torque**	Tighten screw to **110**% rated torque [**1.49** N-m (**13.2** in-lb)] with max. and min. wire sizes and loosen **5** times per UL 1059.	No damage to housing, terminal, or screw

5.3 ENVIRONMENTAL REQUIREMENTS

ITEM	DESCRIPTION	TEST CONDITION	REQUIREMENT
12	**Solderability**	Per **SMES-152**	Solder coverage: **95**% MINIMUM
13	**Solder Resistance**	Dip connector terminal tails in solder: Solder Duration: **5 ± 0.5** seconds; Solder Temperature: **260 ± 5°**C	Visual: No Damage to insulator material
14	**Accelerated Aging Test**	Subject parts to **105 ± 1°**C for a time of **7** days (168 hours).	No evidence of blistering, cracking, softening, or melting.

6.0 PACKAGING

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