



PRODUCT SPECIFICATION

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28 AND 53CKT POWER CMC CONNECTOR, 64318 & 64321 SERIES



REVISION: C	ECR/ECN INFORMATION: EC No: G2014-0095 DATE: 2013/11/27	TITLE: PRODUCT SPECIFICATION 28 AND 53 WAY POWER CMC CONNECTOR	SHEET No. 1 of 8
DOCUMENT NUMBER: PS-64321-001	CREATED / REVISED BY: A.HERBELIN	CHECKED BY: C.BOUCHAN	APPROVED BY: P.BEUGNOT



PRODUCT SPECIFICATION

1.0 SCOPE

This Product Specification covers the hybrid & sealed Power CMC Connectors Series.

2.0 PRODUCT DESCRIPTION

2.1 PRODUCT NAME AND SERIES NUMBER(S)

- **64318:** CMC Power Connector 28 circuits.
- **64321:** CMC Power Connector 53 circuits.
- **64322:** CP 0.6 Female Terminal.
- **64323:** CP 1.5 Female Terminal.
- **64324:** CP 2.8 Female Terminal.
- **64325:** Blind Plug.

2.2 DIMENSIONS, MATERIALS, PLATINGS AND MARKINGS

All dimensions, housing materials, terminal materials and plating can be found on sales drawings.

2.3 SAFETY AGENCY APPROVALS

All molded components are flammability rated UL94 HB.

2.4 MAIN TECHNICAL CHARACTERISTICS

- Operating Voltage: 14 Volts DC.
- Dielectric Withstanding Voltage: 1000 Volts AC for 1 minute.
- Insulation Resistance: 100 MΩ minimum.
- Vibration: 10g (tin).
- Sealing: IP6K7, IP6K8, IP6K9K.
- Operating temperature: -40°C to + 125°C.
- Available wire sizes:
 - CP 0.6mm²: 0.35mm² to 0.75mm² and 18 TXL AWG and 20 TXL AWG
 - CP 1.5mm²: 0.50mm² to 2.00mm² and 14 TXL AWG and 16 TXL AWG
 - CP 2.8mm²: 0.50 mm² to 5.00 mm²
- Available plating options: tin and gold.

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2.5 VALIDATION DONE ACCORDING THE FOLLOWING STANDARDS

ISO 8092-2 standard, and some items from:
PSA B217050
AK LV 214 Standard
JD 53.3

Please contact Molex for more information.

3.0 APPLICABLE DOCUMENTS AND SPECIFICATIONS

Description	Document Number
Application specification	AS-64321-001
Sales drawing Power CMC 53 way	SD-64321-001
Sales drawing CP 0.6 female terminal	SD-64322-001
Sales drawing CP 1.5 female terminal	SD-64323-001
Sales drawing CP 2.8 female terminal	SD-64324-001
Interface drawing Power CMC 28 way	SD-64318-002
Interface drawing Power CMC 53 way	SD-98995-009
Application Specification CP0.6 female terminal	AS-64322-001
Application Specification CP1.5 female terminal	AS-64323-001
Application Specification CP2.8 female terminal	AS-64324-001

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4.0 RATINGS

4.1 VOLTAGE

Operating Voltage: 14 Volts DC

Dielectric Withstanding Voltage: 1000 Volts AC during 1 minute

4.2 CURRENT AND APPLICABLE WIRES

Applicable wires:

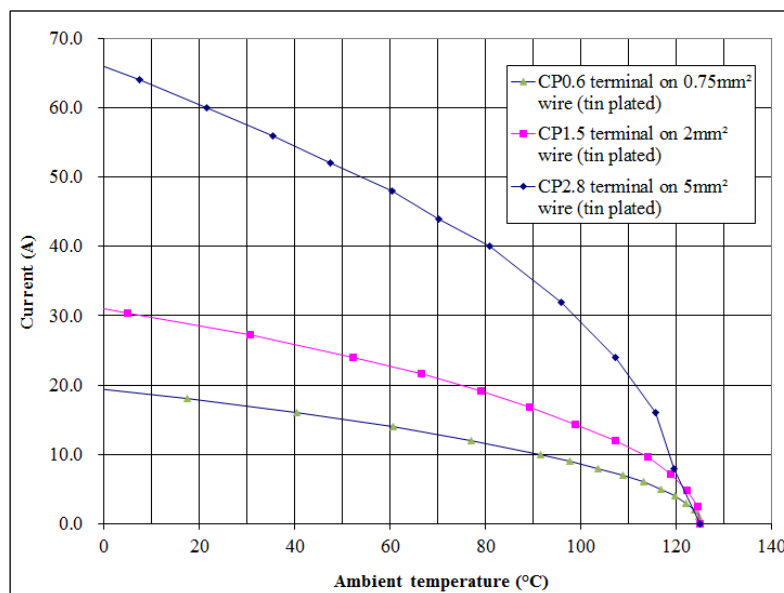
Terminal size	ISO	Outside Insulation Diameter
0.63	0.75 mm ²	1.90 mm Max.
1.5	2.0 mm ²	2.80 mm Max.
2.8	5.0 mm ²	4.00 mm Max.

Max applicable continuous current (in housing, with 40°C temperature rising):

	28/53Ckt
CP0.6 on 0,75mm ²	2,5A
CP1.5 on 2mm ²	12A
CP2.8 on 5mm ²	21A

Check mating header temperature class and environmental conditions for potential limitations.

Terminals derating curves (on air, for information only):



The derating curves are presented as a guideline. The end user must evaluate the performance of the connector pair in actual application to determine the suitability and actual performance.

For any further information, please contact Molex.

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4.3 TEMPERATURE

Maximum system in use temperature range: - 40°C to +125°C.
Split operating temperature between female and header
Check mating header temperature class for potential limitations.

5.0 PERFORMANCE

5.1 ELECTRICAL PERFORMANCE

ITEM	DESCRIPTION	TEST CONDITION	ISO STANDARD (BY EQUIVALENCE)	REQUIREMENT
1	Contact Resistance (Low Level)	Mate connectors : apply a maximum voltage of 20 mV and a current of 100 mA	ISO 8092-2 § 4.8.1	Terminal 0.63: 8 mΩ max. Terminal 1.5: 4 mΩ max. Terminal 2.8: 3 mΩ max.
2	Insulation Resistance	Unmated connectors: apply a voltage of 500 VDC between adjacent terminals and between terminals to ground.	ISO 8092-2 § 4.12	100 MΩ min.
3	Dielectric Withstanding Voltage	Unmated connectors: apply a voltage of 1000 volts 50 Hz VAC for 1 minute between adjacent terminals and between terminals to ground.	ISO 8092-2 § 4.13	No Breakdown

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5.2 MECHANICAL REQUIREMENTS

ITEM	DESCRIPTION	TEST CONDITION	ISO STANDARD (BY EQUIVALENCE)	REQUIREMENT
4	Terminal Insertion Forces	Insert terminal into the housing at a rate of 25 mm per minute	ISO 8092-2 § 4.6	Terminal 0.63: 12 N max. Terminal 1.5: 20 N max. Terminal 2.8: 25 N Max.
5	Terminal Retention Force (in housing with TPA)	Axial pullout force on the terminal in the housing at a rate of 25 mm per minute	ISO 8092-2 § 4.7	Terminal 0.63: 60 N min. Terminal 1.5: 100 N min. Terminal 2.8: 100 N min.
6	Connector Mate and Unmate Forces	Mate and unmate connector (male to female) at a rate of 25 mm per minute	ISO 8092-2 § 4.3	90 N max Fully loaded
7	Durability	Mate connectors up to 20 cycles	ISO 8092-2 § 4.3	No mechanical damage and no sealing leakage.
8	Vibration (Sine) <u>Tin plated Terminals</u>	- Mate connectors and vibrate from 10 to 2000Hz, 3 G for 48 hours in each of three mutually perpendicular axes (X, Y, Z) coupled with a temperature cycling from -40°C to 95°C. - Mate connectors and vibrate from 10 to 2000Hz, 10 G for 8 hours in each of three mutually perpendicular axes (X, Y, Z) coupled with a temperature cycling from -40°C to 125°C.	N/A N/A	No mechanical damage and no micro-break Contact resistance: $\Delta R_c (R_{final} - R_{initial}) \leq 5m\Omega$
9	Wire Pullout Force (axial)	Apply an axial pullout force on the wire bundle	N/A	No damage under $F \leq 100N$
10	Mechanical Shocks	Assembled female connector shall be dropped onto concrete from a height of 1m	N/A	No damage on connectors

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5.3 ENVIRONMENTAL REQUIREMENTS

ITEM	DESCRIPTION	TEST CONDITION	ISO STANDARD (BY EQUIVALENCE)	REQUIREMENT						
11	Thermal Shocks	Mated connectors exposed to 100 cycles of: <table border="1"> <tr> <td><u>Temperature (C°)</u></td> <td><u>Duration (mn)</u></td> </tr> <tr> <td>- 40° ±2</td> <td>60</td> </tr> <tr> <td>+125° ±2</td> <td>60</td> </tr> </table>	<u>Temperature (C°)</u>	<u>Duration (mn)</u>	- 40° ±2	60	+125° ±2	60	N/A	No mechanical damage Contact resistance: ΔR_c (R final-R initial) \leq 5m Ω
<u>Temperature (C°)</u>	<u>Duration (mn)</u>									
- 40° ±2	60									
+125° ±2	60									
12	Endurance to temperature and humidity	Mated connectors exposed to 5 cycles of 24 hours as defined below: <ul style="list-style-type: none"> - 4 Hrs @23°C with 75% of relative humidity. - 0.5 Hr of heat up to +55°C. - 10 Hrs @55°C with 99% of relative humidity. - 1.5 hrs of cool down to -40°C. - 2 hrs @ -40°C. - 2.5 Hrs of heat up to +125°C. - 2 Hrs @ +125°C. - 1.5 Hrs of cool down to 23°C. 	ISO 8092-2 § 4.10	No mechanical damage Contact resistance: ΔR_c (R final-R initial) \leq 5m Ω						
13	Fluid resistance	Submerge mated connectors in each of the following automotive fluids : <ul style="list-style-type: none"> - engine oil - manual gear box oil - automatic gear box oil - engine coolant - battery liquid - brake fluid - power steering fluid - diesel fuel - window washing liquid (methanol) 	N/A	Insulation resistance in accordance with §2 Dielectric strength in accordance with §3						
14	Water tightness	Submerge mated connector under water 100 mm minimum for 30 seconds minimum duration under 500mbar air pressure.	ISO 20653	IP6K7, IP6K8						
15	High Pressure Spray Resistance	Mated connectors are placed on a rotating table and submitted to high pressure water jet (100 bars at 80°C)	ISO 20653	IP6K9K						

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6.0 PACKAGING

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

For further information please visit Molex website: www.molex.com/product/cmc.html

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