molex

PRODUCT SPECIFICATION

8.0mm Coeur CST High Current Connector System

SERIES:

204313	PRESS FIT Option with 1.0mm of Float
204365	SMT Option with 1.0mm of Float
204318	SMT Standard
204316	PRESS FIT Standard
204608	1/0 Crimp Option
204600	2 Circuit Male Assembly
204599	2 Circuit Crimped Female Assembly
212195	SMT Option with Float Tape and Reel Packaging
212194	SMT Standard Tape and Reel Packaging

MALE PINS:

203263	STD MALE SMT, PRESSFIT AND SCREW MOUNT
211922	CUSTOM MALE TERMINALS
212460	2 CIRCUIT MALE WAFER ASSEMBLIES

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2043130001-PS	**J.Joniak**	**B.Piszczor**	**J.Gaumer**

1.0 SCOPE:
This Product Specification covers the 8.0mm CST Connector System using 1/0 (50mm²) cable size.

2.0 PRODUCT DESCRIPTION:
The CST Connector series is a single circuit connector system with available 1mm of actual float for high power busbar, PCB applications and wire to board applications. The power circuit terminals are terminated to a busbar, PCB or wire and uses a gold mating to silver interface with a terminal tarnish protection lubricant.

2.1 DIMENSIONS:

2.1.1 Overall envelopes vary based on configuration and CST option. For individual envelopes and further information see respective sales drawings.

2043130010-SD	PRESS FIT Option with 1.0mm of Float
2043650010-SD	SMT Option with 1.0mm of Float
2043180001-SD	SMT Standard
2043160001-SD	PRESS FIT Standard
2046080001-SD	1/0 Crimp Option
2046000001-SD	2 Circuit Male Assembly
2045990001-SD	2 Circuit Crimped Female Assembly*
2121950010-SD	SMT Option with 1.0mm of Float, Tape and Reel
2121940001-SD	SMT Standard, Tape and Reel

*components of 204599 series can be purchased individually and assembled on site

2.2 MATERIALS:

2.2.1 Housings: see individual sales drawings for various plastic materials
2.2.2 Power male terminals: Copper base material with silver plating, a tarnish inhibitor is applied to terminal
2.2.3 Power female contacts: Copper base material with gold plated mating interface. Remainder of connector body is silver plated, with a tarnish inhibitor applied

Power cable: Product tested with Champlain Cable part number EXRAD-FSX1/0 (1/0 Cable is 1007 strands of copper wire with EMI braid)

Product can be used with equivalent wire (OD, stranding, voltage rating…per Application Specification)

2.3 Safety Agency Approvals

2.3.1 C US File Number*: 70184994

CSA approval meets following standards/test procedures:

a) CSA STD. C22.2 No. 182.3-M1987
b) UL-1977

* - “C” and “US” mark adjacent to CSA signifies that the product has been evaluated to the applicable CSA and ANSI/UL standards, for use in Canada and US respectively.

CSA NON-current interruption
175 Amps @ 600V for standard interface 175 Amps @ 600V for floating interface

2.3.2 UL File Number: E29179

UL NON-current interruption
175 Amps @ 600V for standard interface 175 Amps @ 600V for floating interface

3.0 DOCUMENTS AND SPECIFICATIONS:

3.1 Sales Drawing

1. 2043130010-SD PRESS FIT Float (tray packed)
2. 2043650010-SD SMT Float (tray packed)
3. 2043180001-SD SMT STD (tray packed)
4. 2043160001-SD PRESS FIT STD (tray packed)
5. 2046080001-SD 1/0 Crimp
6. 2045990001-SD 2 Circuit Female Assembly
7. 2121950010-SD SMT Float, Tape and Reel
8. 2121940001-SD SMT Standard, Tape and Reel

3.2 Pin Sales Drawing

1. 2032630001-SD STD PRESS FIT
2. 2032634185-SD Screw Mount
3. 2032633080-SD STD SMT
4. 2046000001-SD 2 Circuit Touch Proof Male

3.3 Application Specification

1. 2043130001-AS

3.4 Packaging Specifications

1. 2032630001-PK
2. 2043650010-PK
3. 2043650000-PK
4. 2043180001-PK
5. 2043180000-PK
6. 2046080001-PK
7. 2046000001-PK

4.0 RATINGS:

4.1 VOLTAGE

600 Volts

Connector Rating per UL-1977

Connector voltage rating meets the connector approval level defined by UL 1977, Sect. 11 for spacing per table 11.1. Example: 1.2 mm for ≥ 250 volt; 3.2 mm for ≤ 250 volt.

Exception taken for spacing less than those specified are permitted, if the device complies with the requirements in the dielectric voltage withstanding test per Sect. 17.

Application Voltage Guideline

For application voltage requirements please refer to UL-60950 or other applicable standards, the creepage & clearance also needs to be determined based upon pads/traces on the PCB.

4.2 CURRENT ON APPLICABLE WIRES

See Temp Vs Current charts in section 6.0 for applicable current rating per application.

**Current rating is application dependent. The ratings should be used as a guideline only. Appropriate de-rating is required per ambient conditions, bussbar size, gross heating from adjacent modules or components, and other factors that influence connector performance. Wire type and stranding, tin coated or bare copper, wire length & crimp quality are other factors that influence current rating*

4.3 TEMPERATURE

Operating: -40ºC to + 125ºC (including T-Rise from load)
Storage/Non-operating: -40ºC to + 85ºC

Temperature life tested per EIA 364-17 Method A for 114 hrs@125ºC per table 8 to meet field temperature of 85ºC for 10 years life.

Further testing completed per USCAR-2 Rev6 for 1008 hrs@150ºC. See 2043131000-TS

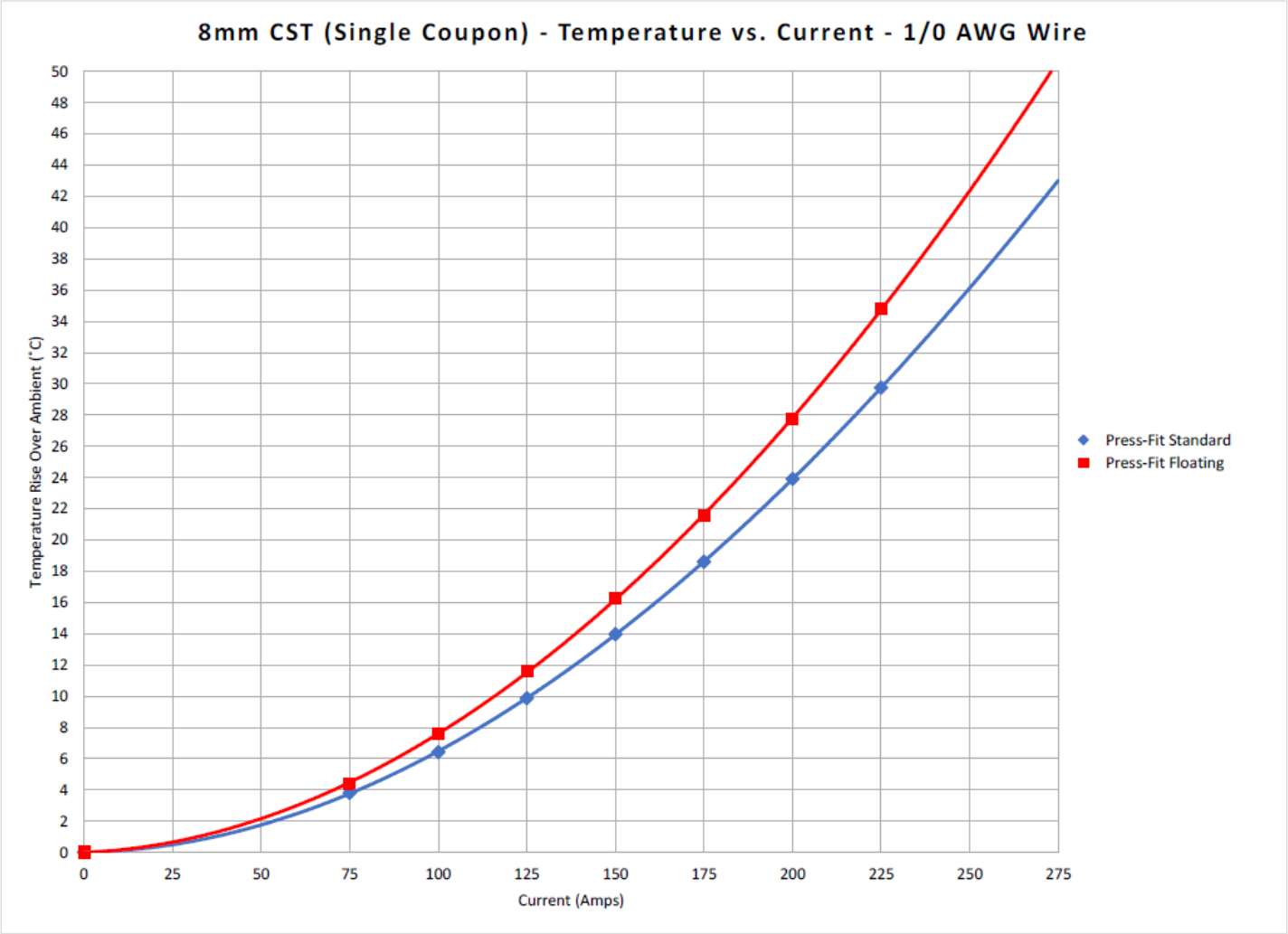
4.4 CONNECTOR DURABLITIY

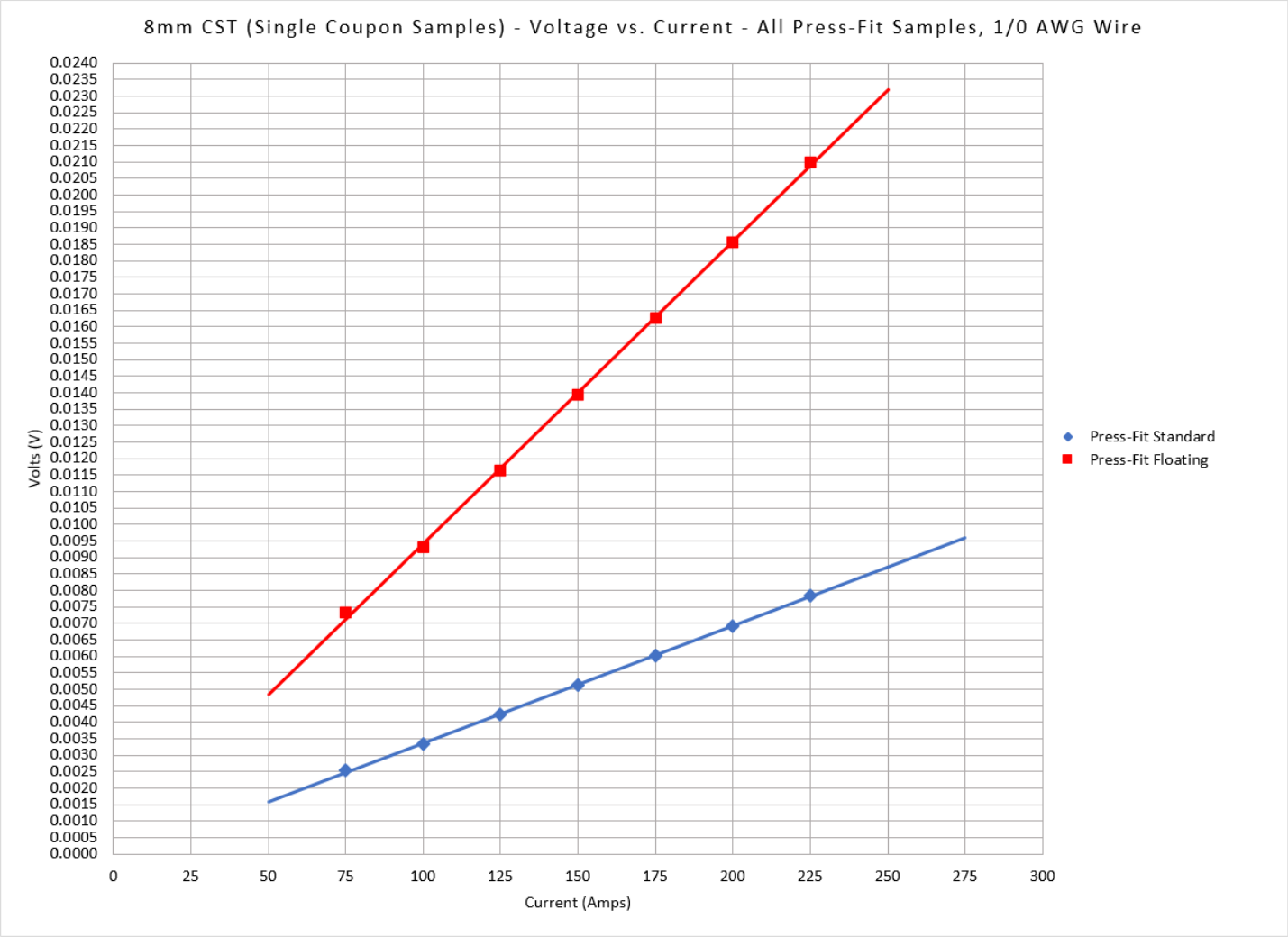
200 Cycles mechanical / non environmental durability. *
*Based on EIA-364-1000.01 test method C section 7

5.0 QUALIFICATION

Laboratory condition and sample selection are in accordance with EIA-364-1000.01.
See page 17 for detail test sequence of EIA-364-1000.01

6.0 PERFORMANCE





Press-Fit option shown for clarity
For more detail and other options see 2043130008-TS

6.1 ELECTRICAL PERFORMANCE

DESCRIPTION	TEST CONDITION	REQUIREMENT
INITIAL CIRCUIT RESISTANCE (LOW LEVEL)	Mate connectors; apply maximum voltage of 20 mV and current of 100 mA	0.4 mΩ max

VOLTAGE DROP @ RATED CURRENT	Mate connectors; apply maximum current of 175 amps	See Charts; Section 6.0

6.2 ENVIRONMENTAL PERFORMANCE

DESCRIPTION	TEST CONDITION	REQUIREMENT
MECHANICAL SHOCK AND VIBRATION	Mated connectors Shock and Vibrate Shock: 50G half-sine shock pulse using 10 positive pulses per axis with a 5-10 millisecond duration for the pulse Vibration: Random vibrate for 15 minutes in each of the 3 axes	0.17 mΩ max change No Discontinuities
THERMAL SHOCK	Mate connectors, expose to 10 cycles from -55ºC to 85ºC	0.17 mΩ max change

TEMPERATURE LIFE	Mate Connectors, expose to 114 hours at 125°C	0.17mΩ max change
CYCLIC TEMPERATURE AND HUMIDITY	Mate connectors: expose to 24 cycles from 25°C/ 80% RH to 65°C/ 50% RH	0.17 mΩ max change
DUST EXPOSURE	Exposed to dust per EIA-364-91 benign dust composition	0.17 mΩ max change
MIXED FLOWING GAS	Exposed to MFG per EIA-365-65 with an exposure time of 224 hours unmated and 114 hours mated	0.17 mΩ max change

6.3 MECHANICAL PERFORMANCE:

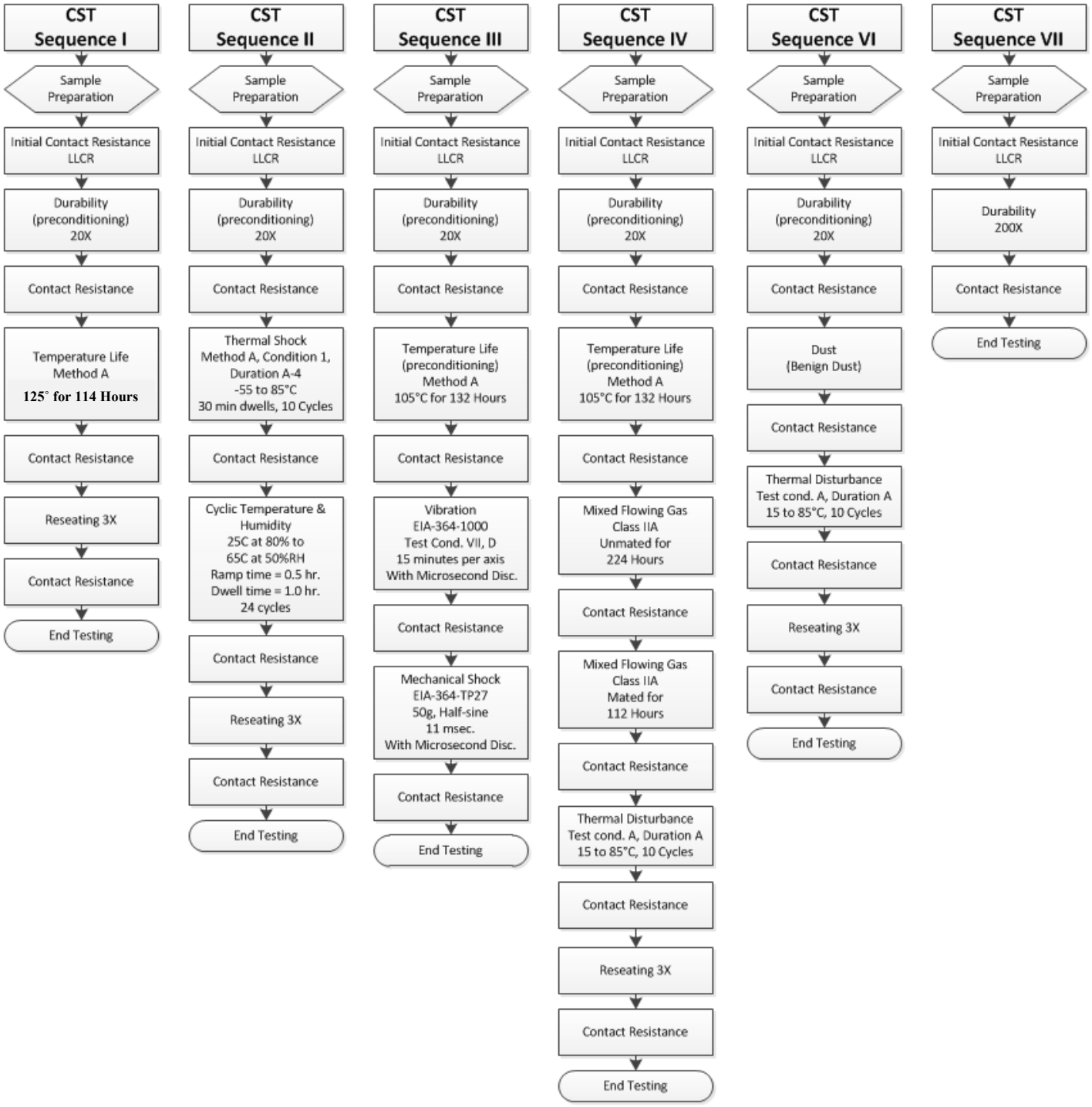
DESCRIPTION	TEST CONDITION	REQUIREMENT
MATING FORCE	Mate connectors at a rate of 25 ± 6 mm per minute	45 N max
UNMATING FORCE,	Unmate connectors at a rate of 25 ± 6 mm per minute	10 N min

DURABILITY W/O ENVIRONMENT	Mate connectors 200 cycles at a maximum rate of 10 cycles per minute	No damage which would impair operation
FLOAT DISPLACEMENT FORCE (SIDE FORCE)	Displace float feature 1.5mm	10N min, 60N max
OFFSET MATING INSERTION FORCE INTO FLOATER	Mate and unmate receptacle male power pin 10 times in the offset position	90N max

CABLE CRIMPED TO TERMINAL PULL FORCE	Crimped 1/0 (aught) cable to terminal	1500 N Min

6.4 ENVIRONMENTAL SEQUENCE

EIA-364-1000.01 SEQUENCE 1
EIA-364-1000.01 SEQUENCE 2
EIA-364-1000.01 SEQUENCE 3
EIA-364-1000.01 SEQUENCE 4
EIA-364-1000.01 SEQUENCE 6
EIA-364-1000.01 SEQUENCE 7



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