

# 3.4mm Coeur CST High Current Connector System

**SERIES:****SOCKETS;**

204313	PRESS FIT option with 1.0mm of float
204365	SMT option with 1.0mm of float
204318	SMT standard
204316	PRESS FIT standard

**MALE PINS;**

203263	Male SMT and PRESSFIT Pin options
--------	-----------------------------------



REVISION: <b>A</b>	ECM INFORMATION: ER No: DATE: 05/29/2019	TITLE: <b>PRODUCT SPECIFICATION FOR Coeur CST 3.4mm</b>	SHEET No. <b>1 of 13</b>
DOCUMENT NUMBER: <b>2043130018-PS</b>	CREATED / REVISED BY: <b>Jeff Joniak</b>	CHECKED BY: <b>Jeff Gaumer</b>	APPROVED BY: <b>Bobby Piszczor</b>

## 1.0 SCOPE:

This Product Specification covers the 3.4mm Coeur CST Board to Board Connector System

## 2.0 PRODUCT DESCRIPTION:

The Coeur CST Board to Board Connector series is a single circuit connector system with available 1mm of actual float for high power applications connecting PCB to PCB, BUSBAR to BUSBAR, or PCB to BUSBAR. The system has Au plated socket contacts mating to Ag plated male pins.

## 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.

2043130018-SD	PRESS FIT SOCKET option with 1.0mm of float
2043650018-SD	SMT SOCKET with 1.0mm of float
2043180018-SD	SMT standard SOCKET
2043160018-SD	PRESS FIT standard SOCKET
2032630018-SD	Male PRESS FIT terminal
2032631134-SD	Male SMT terminal

## 2.2 MATERIALS:

2.2.1 Power male Pins: Copper base material with silver plating with a tarnish inhibitor applied  
 Power female Sockets: Copper base contact beam material with gold plated mating interface. Remainder of the socket is silver plated with a tarnish inhibitor applied

## 2.3 Safety Agency Approvals

2.3.1  File Number\*: ?

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.

REVISION: <b>A</b>	ECM INFORMATION: ER No: DATE: 05/29/2019	TITLE: <b>PRODUCT SPECIFICATION FOR Coeur CST 3.4mm</b>	SHEET No. <b>2 of 13</b>
DOCUMENT NUMBER: <b>2043130018-PS</b>	CREATED / REVISED BY: <b>Jeff Joniak</b>	CHECKED BY: <b>Jeff Gaumer</b>	APPROVED BY: <b>Bobby Piszczor</b>

<b>CSA</b> <b>NON-current interruption</b>
75 Amps @ 600V for standard interface 75 Amps @ 600V for floating interface

### 2.3.2 UL File Number: E29179

<b>UL</b> <b>NON-current interruption</b>
75 Amps @ 600V for standard interface 75 Amps @ 600V for floating interface

## 3.0 DOCUMENTS AND SPECIFICATIONS

### 3.1 Sales Drawing

1. 2043130018-SD PRESS FIT float
2. 2043650018-SD SMT float
3. 2043180018-SD SMT STD
4. 2043160018-SD PRESS FIT STD
5. 2046080018-SD 8 AWG crimp

### 3.2 Pin Sales Drawing

1. 2032630034-SD PRESS FIT
2. 2032631134-SD STD SMT

### 3.3 Application Specification 2043130018-AS

### 3.4 Packaging specifications

1. 2043139018-PK
2. 2046000018-PK

### 3.5 Additional information

- |                  |                            |
|------------------|----------------------------|
| 1. 2043130001-PS | 8MM Coeur CST product spec |
| 2. 2043130018-TS | 3.4mm Test Summary         |

## 4.0 RATINGS:

### 4.1 VOLTAGE

600 Volts

### Connector Rating per UL-1977

<u>REVISION:</u> <b>A</b>	<u>ECM INFORMATION:</u> ER No: DATE: 05/29/2019	<u>TITLE:</u> <b>PRODUCT SPECIFICATION FOR Coeur CST 3.4mm</b>	<u>SHEET No.</u> <b>3 of 13</b>
<u>DOCUMENT NUMBER:</u> <b>2043130018-PS</b>		<u>CREATED / REVISED BY:</u> <b>Jeff Joniak</b>	<u>CHECKED BY:</u> <b>Jeff Gaumer</b>
		<u>APPROVED BY:</u> <b>Bobby Piszczor</b>	

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  $\geq 250$  volt; 3.2 mm for  $\leq 250$  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 CAPABILITY**

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.*

## **4.3 TEMPERATURE**

Operating:	-40°C to +105°C (including T-Rise from load)
Storage/Non-operating:	-40°C to +85°C

Temperature life tested per EIA 364-17 Method A for 228 hrs @ 105° per table 8 to meet field temperature of 65° C for 10 years life.

## **4.4 CONNECTOR DURABILITY**

200 Cycles mechanical / non environmental durability. \*

\*Based on EIA-364-1000.01 test method C section 7

## **5.0 QUALIFICATION**

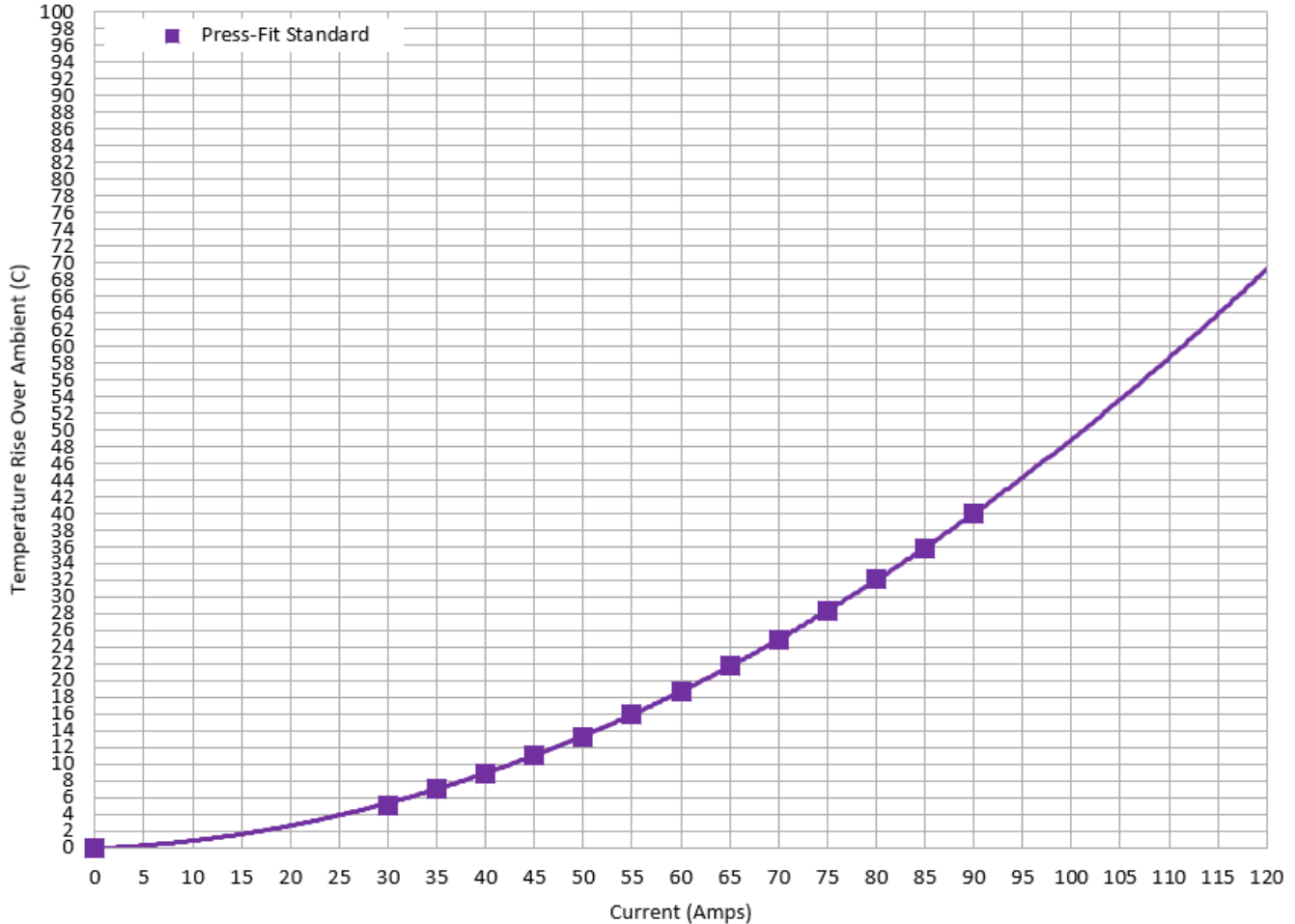
Laboratory condition and sample selection are in accordance with EIA-364-1000.01. See page 17 for detail test sequence of EIA-364-1000.01

<b>REVISION:</b> <b>A</b>	<b>ECM INFORMATION:</b> ER No: DATE: 05/29/2019	<b>TITLE:</b> <b>PRODUCT SPECIFICATION FOR Coeur CST 3.4mm</b>		<b>SHEET No.</b> <b>4 of 13</b>
<b>DOCUMENT NUMBER:</b> <b>2043130018-PS</b>		<b>CREATED / REVISED BY:</b> Jeff Joniak	<b>CHECKED BY:</b> Jeff Gaumer	<b>APPROVED BY:</b> Bobby Piszczor

## 6.0 PERFORMANCE

Temperature Rise vs. Current using a 31.2mm<sup>2</sup> cross section buss bar

### 3.4mm CST - Temp vs. Current - 31.2mm<sup>2</sup> Buss Bars

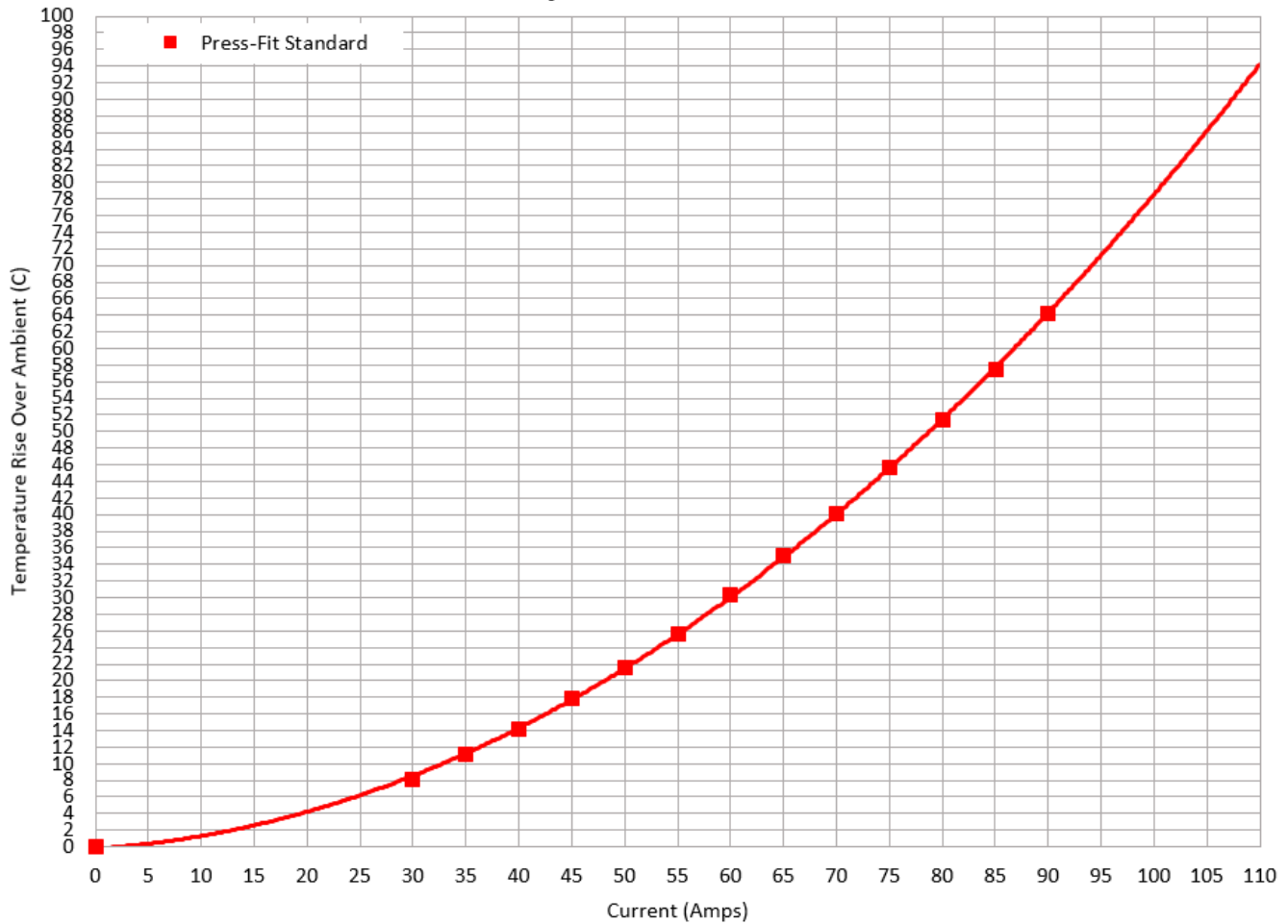


Pressfit standard option shown for clarity  
 For more detail and other options see 2043130018-TS

REVISION: <b>A</b>	ECM INFORMATION: ER No: DATE: 05/29/2019	TITLE: <b>PRODUCT SPECIFICATION FOR Coeur CST 3.4mm</b>	SHEET No. <b>5 of 13</b>
DOCUMENT NUMBER: <b>2043130018-PS</b>	CREATED / REVISED BY: <b>Jeff Joniak</b>	CHECKED BY: <b>Jeff Gaumer</b>	APPROVED BY: <b>Bobby Piszczor</b>

Temperature Rise vs. Current for an 8mm<sup>2</sup> cross section buss bar

### 3.4mm CST - Temp vs. Current - 8mm<sup>2</sup> Buss Bars

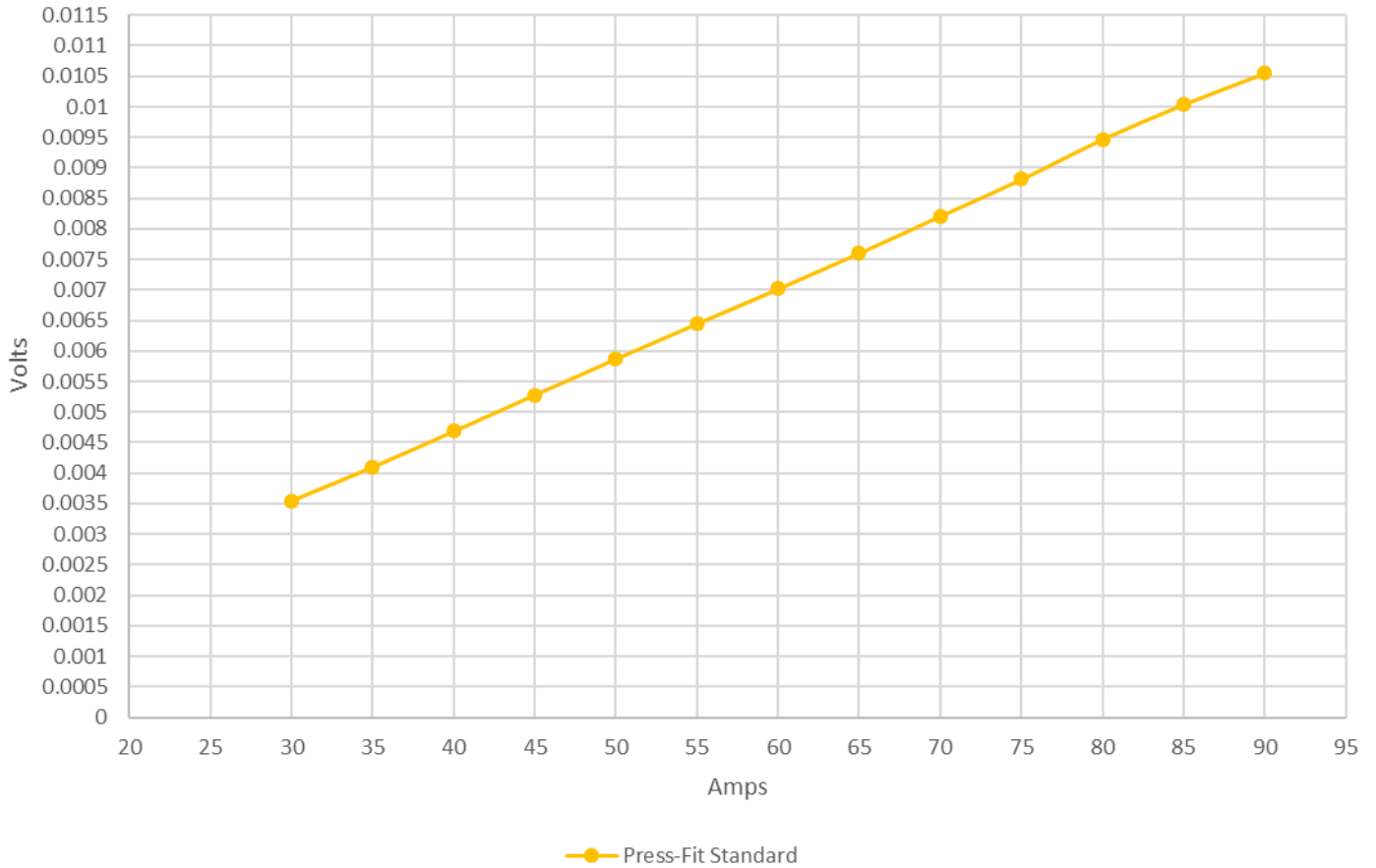


Pressfit standard option shown for clarity  
 For more detail and other options see 2043130018-TS

REVISION: <b>A</b>	ECM INFORMATION: ER No: DATE: 05/29/2019	TITLE: <b>PRODUCT SPECIFICATION FOR Coeur CST 3.4mm</b>	SHEET No. <b>6 of 13</b>
DOCUMENT NUMBER: <b>2043130018-PS</b>	CREATED / REVISED BY: Jeff Joniak	CHECKED BY: Jeff Gaumer	APPROVED BY: Bobby Piszczor

Voltage Drop vs. Current for CST options using a 31.2mm<sup>2</sup> cross section buss bar

Voltage Drop vs Current

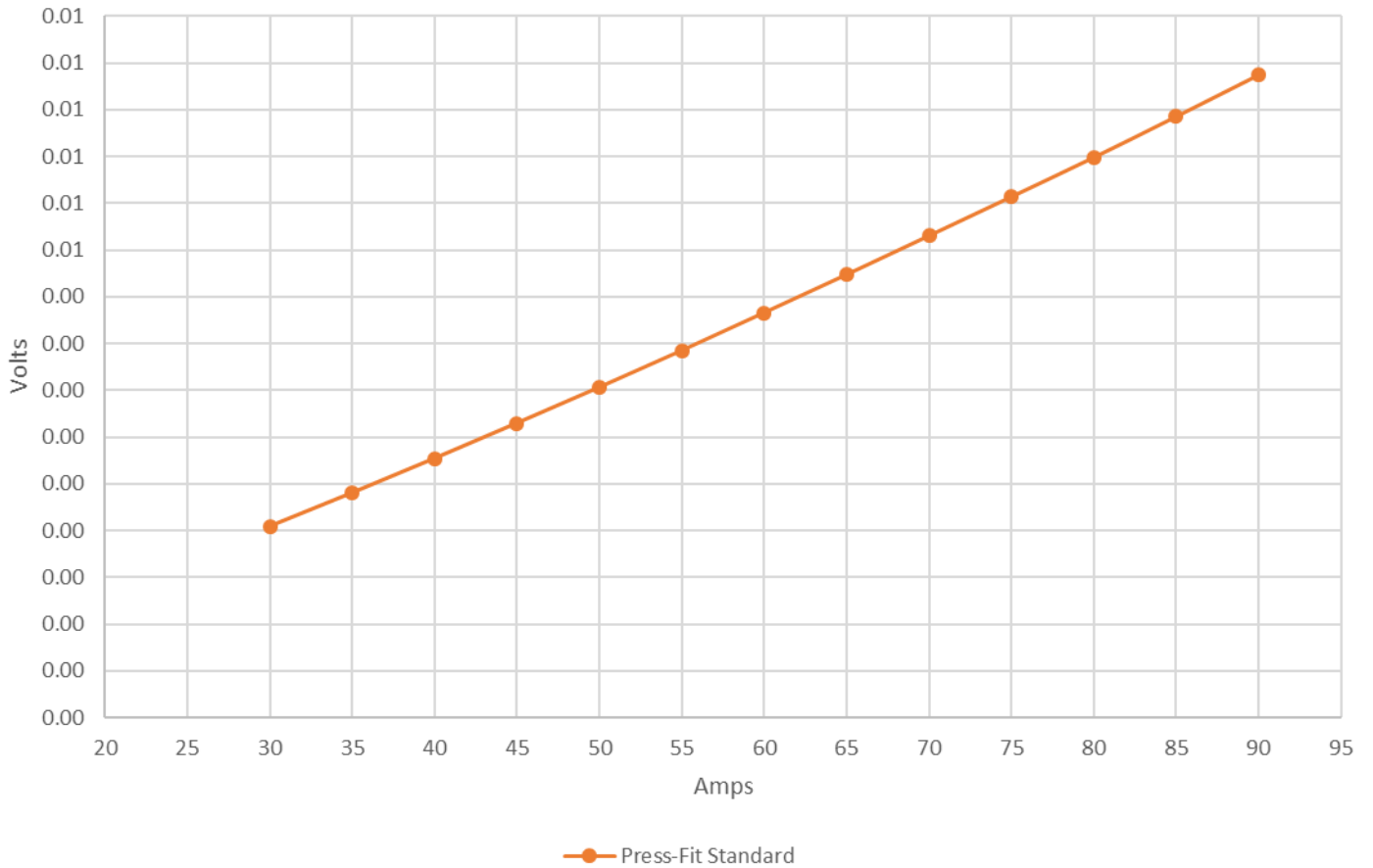


Pressfit standard option shown for clarity  
 For more detail and other options see 2043130018-TS

REVISION: <b>A</b>	ECM INFORMATION: ER No: DATE: 05/29/2019	TITLE: <b>PRODUCT SPECIFICATION FOR Coeur CST 3.4mm</b>	SHEET No. <b>7 of 13</b>
DOCUMENT NUMBER: <b>2043130018-PS</b>	CREATED / REVISED BY: <b>Jeff Joniak</b>	CHECKED BY: <b>Jeff Gaumer</b>	APPROVED BY: <b>Bobby Piszczor</b>

Voltage Drop vs. Current for CST options using an 8mm<sup>2</sup> cross section busbar

Voltage Drop vs Current



Pressfit standard option shown for clarity  
For more detail and other options see 2043130018-TS

REVISION: <b>A</b>	ECM INFORMATION: ER No: DATE: 05/29/2019	TITLE: <b>PRODUCT SPECIFICATION FOR Coeur CST 3.4mm</b>	SHEET No. <b>8 of 13</b>
DOCUMENT NUMBER: <b>2043130018-PS</b>	CREATED / REVISED BY: <b>Jeff Joniak</b>	CHECKED BY: <b>Jeff Gaumer</b>	APPROVED BY: <b>Bobby Piszczor</b>



## 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	0.25 mΩ max
VOLTAGE DROP @ RATED CURRENT	Mate connectors; apply maximum current of 75 amps	See Charts; Section 6.0

## 6.2 ENVIRONMENTAL PERFORMANCE

DESCRIPTION	TEST CONDITION	REQUIREMENT
MECHANICAL SHOCK AND VIBRATION	<p>Mated connectors Shock and Vibrate</p> <p>Shock: 50G half-sine shock pulse using 10 positive pulses per axis with a 5-10 millisecond duration for the pulse</p> <p>Vibration: Random vibrate for 15 minutes in each of the 3 axes</p>	<p>0.40 mΩ max change No Discontinuities</p>

REVISION: <b>A</b>	ECM INFORMATION: ER No: DATE: 05/29/2019	TITLE: <b>PRODUCT SPECIFICATION FOR Coeur CST 3.4mm</b>	SHEET No. <b>9 of 13</b>
DOCUMENT NUMBER: <b>2043130018-PS</b>	CREATED / REVISED BY: <b>Jeff Joniak</b>	CHECKED BY: <b>Jeff Gaumer</b>	APPROVED BY: <b>Bobby Piszczor</b>

THERMAL SHOCK	Mate connectors, expose to 10 cycles from -55°C to 85°C	0.40 mΩ max change
TEMPERATURE LIFE	Mate Connectors, expose to 228 hours at 105°C Mate Connectors, expose to 114 hours at 125°C	0.40mΩ max change
CYCLIC TEMPERATURE AND HUMIDITY	Mate connectors: expose to 24 cycles from 25°C/ 80% RH to 65°C/ 50% RH	0.40 mΩ max change
DUST EXPOSURE	Exposed to dust per EIA-364-91 benign dust composition	0.40 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	0.40 mΩ max change

### 6.3 MECHANICAL PERFORMANCE:

DESCRIPTION	TEST CONDITION	REQUIREMENT
MATING FORCE	Mate connectors at a rate of 25 ± 6 mm per minute	20 N max

REVISION: <b>A</b>	ECM INFORMATION: ER No: DATE: 05/29/2019	TITLE: <b>PRODUCT SPECIFICATION FOR Coeur CST 3.4mm</b>	SHEET No. <b>10 of 13</b>
DOCUMENT NUMBER: <b>2043130018-PS</b>	CREATED / REVISED BY: <b>Jeff Joniak</b>	CHECKED BY: <b>Jeff Gaumer</b>	APPROVED BY: <b>Bobby Piszczor</b>

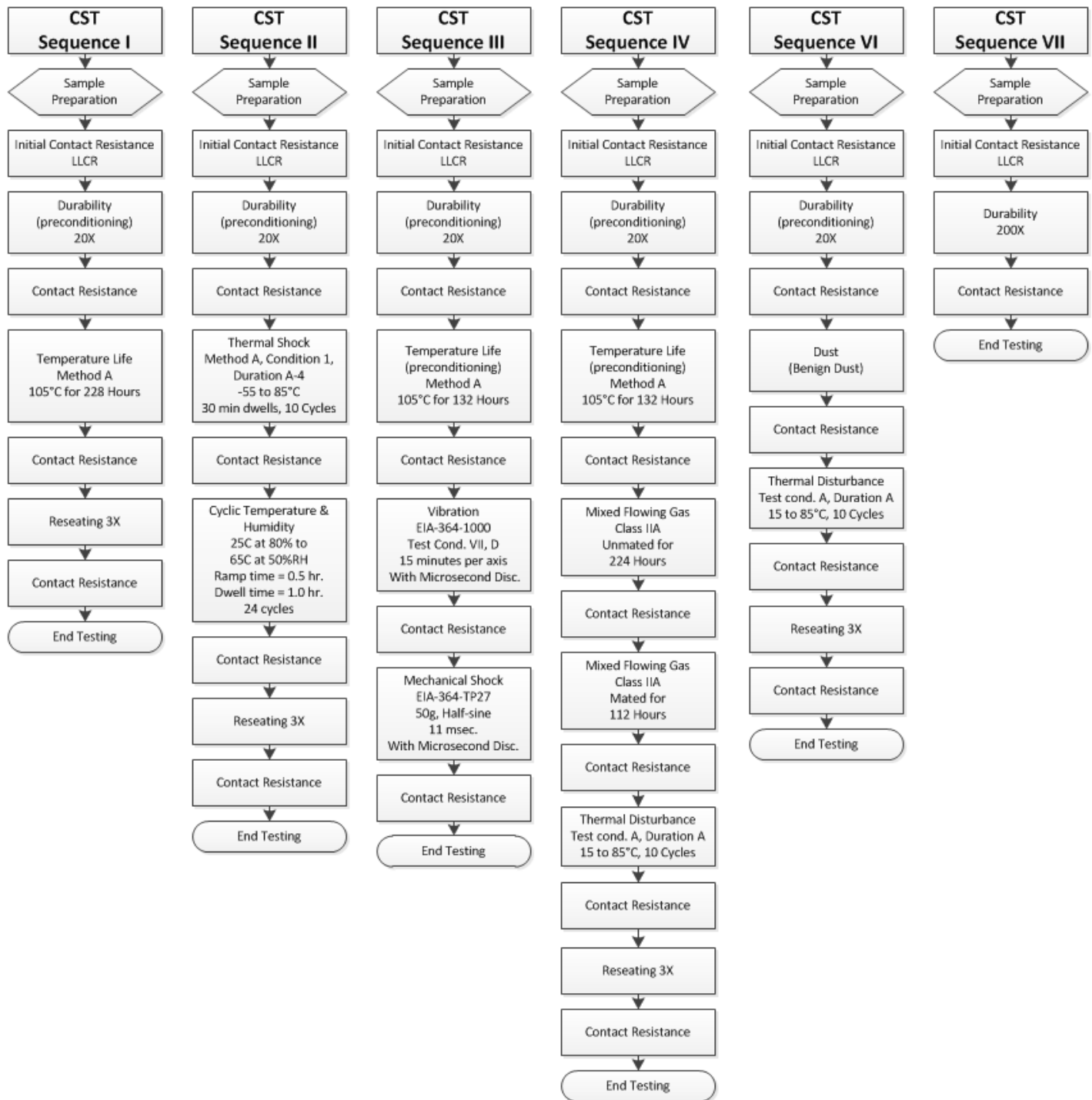
UNMATING FORCE,	Unmate connectors at a rate of 25 ± 6 mm per minute	6 N min
DURABILITY W/O ENVIRONMENT	Mate connectors 200 cycles at a maximum rate of 10 cycles per minute	No damage which would impair operation
FLOAT DISPLACEMENT FORCE (SIDE FORCE)	Displace float feature 1.5mm	10N min
OFFSET MATING INSERTION FORCE INTO FLOATER	Mate and unmate receptacle male power pin 10 times in the offset position	30N max

CABLE CRIMPED TO TERMINAL PULL FORCE	Crimped 8AWG 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

REVISION: <b>A</b>	ECM INFORMATION: ER No: DATE: 05/29/2019	TITLE: <b>PRODUCT SPECIFICATION FOR Coeur CST 3.4mm</b>	SHEET No. <b>11 of 13</b>
DOCUMENT NUMBER: <b>2043130018-PS</b>	CREATED / REVISED BY: <b>Jeff Joniak</b>	CHECKED BY: <b>Jeff Gaumer</b>	APPROVED BY: <b>Bobby Piszczor</b>



REVISION: <b>A</b>	ECM INFORMATION: ER No: DATE: 05/29/2019	TITLE: <b>PRODUCT SPECIFICATION FOR Coeur CST 3.4mm</b>	SHEET No. <b>12 of 13</b>
-----------------------	--	--	------------------------------

DOCUMENT NUMBER: <b>2043130018-PS</b>	CREATED / REVISED BY: <b>Jeff Joniak</b>	CHECKED BY: <b>Jeff Gaumer</b>	APPROVED BY: <b>Bobby Piszczor</b>
--	---	-----------------------------------	---------------------------------------



# APPLICATION SPECIFICATION

This page intentionally left blank

REVISION: <b>A1</b>	ECM INFORMATION: EC No: <b>618830</b> DATE: <b>2019/06/10</b>	TITLE: <b>3.4MM CST PRODUCT SPEC</b>	SHEET No. <b>13 of 13</b>		
DOCUMENT NUMBER: <b>2043130018-PS</b>	DOC TYPE: <b>PS</b>	DOC PART: <b>000</b>	CREATED / REVISED BY: <b>JJONIAK</b>	CHECKED BY: <b>JJONIAK</b>	APPROVED BY: <b>JJONIAK</b>