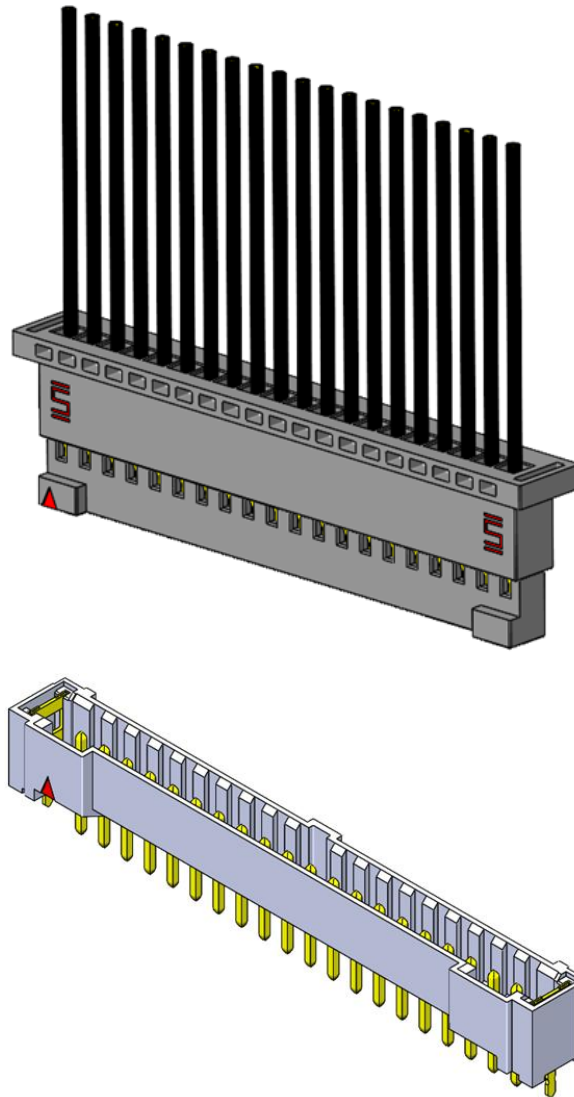




Project: Design Qualification Test Report	Tracking Code: CR-1387503_Report_Rev_1
Requested by: Abbie Yang	Date: 3/24/2026
Part #: S2SS-20-24-L-06.00-S\T2M-120-01-L-S-TH-WT-K-TR	
Part description: S2SS\T2M	Tech: Kason He
Test Start: 1/28/2026	Test Completed: 3/13/2026



DESIGN QUALIFICATION TEST REPORT

S2SS\T2M

S2SS-20-24-L-06.00-S\T2M-120-01-L-S-TH-WT-K-TR

Tracking Code: CR-1387503 Report Rev 1	Part #: S2SS-20-24-L-06.00-S\T2M-120-01-L-S-TH-WT-K-TR
Part description: S2SS\T2M	

REVISION HISTORY

DATA	REV.NUM.	DESCRIPTION	ENG
3/24/2026	1	Initial test	KH

CERTIFICATION

All instruments and measuring equipment were calibrated to National Institute for Standards and Technology (NIST) traceable standards according to ISO 10012-1 and ANSI/NCSL 2540-1, as applicable.

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SCOPE

To perform the following tests: Design Qualification test. Please see test plan.

APPLICABLE DOCUMENTS

Standards: EIA Publication 364

TEST SAMPLES AND PREPARATION

- 1) All materials were manufactured in accordance with the applicable product specification.
- 2) All test samples were identified and encoded to maintain traceability throughout the test sequences.
- 3) After soldering, the parts to be used for LLCR and DWV/IR testing were cleaned according to CO-SC-WI-3029.
- 4) Either an automated cleaning procedure or an ultrasonic cleaning procedure may be used.
- 5) The automated procedure is used with aqueous compatible soldering materials.
- 6) Parts not intended for testing LLCR and DWV/IR are visually inspected and cleaned if necessary.
- 7) Any additional preparation will be noted in the individual test sequences.
- 8) Solder Information: Lead Free
- 9) Samtec Test PCBs used: PCB-114787-TST/PCB-114788-TST.

FLOWCHARTS

Mating/Unmating/Durability

Group 1

S2SS-20-24-L-06.00-S
T2M-120-01-L-S-TH-WT-K-TR
8 Assemblies

Step	Description
1.	Contact Gaps
2.	LLCR ⁽²⁾
3.	Mating/Unmating Force ⁽³⁾
4.	Cycles Quantity = 25 Cycles
5.	Mating/Unmating Force ⁽³⁾
6.	Cycles Quantity = 25 Cycles
7.	Mating/Unmating Force ⁽³⁾
8.	Cycles Quantity = 25 Cycles
9.	Mating/Unmating Force ⁽³⁾
10.	Cycles Quantity = 25 Cycles
11.	Mating/Unmating Force ⁽³⁾
12.	Contact Gaps
13.	LLCR ⁽²⁾ Max Delta = 15 mOhm
14.	Thermal Shock ⁽⁴⁾
15.	LLCR ⁽²⁾ Max Delta = 15 mOhm
16.	Humidity ⁽¹⁾
17.	LLCR ⁽²⁾ Max Delta = 15 mOhm
18.	Mating/Unmating Force ⁽³⁾

Group 2

S2SS-10-24-L-06.00-S
T2M-110-01-L-S-TH-WT-K-TR
8 Assemblies

Step	Description
1.	Contact Gaps
2.	Mating/Unmating Force ⁽³⁾
3.	Cycles Quantity = 25 Cycles
4.	Mating/Unmating Force ⁽³⁾
5.	Cycles Quantity = 25 Cycles
6.	Mating/Unmating Force ⁽³⁾
7.	Cycles Quantity = 25 Cycles
8.	Mating/Unmating Force ⁽³⁾
9.	Cycles Quantity = 25 Cycles
10.	Mating/Unmating Force ⁽³⁾

Group 3

S2SS-02-24-L-06.00-S
T2M-102-01-L-S-SM-WT
8 Assemblies

Step	Description
1.	Contact Gaps
2.	Mating/Unmating Force ⁽³⁾
3.	Cycles Quantity = 25 Cycles
4.	Mating/Unmating Force ⁽³⁾
5.	Cycles Quantity = 25 Cycles
6.	Mating/Unmating Force ⁽³⁾
7.	Cycles Quantity = 25 Cycles
8.	Mating/Unmating Force ⁽³⁾
9.	Cycles Quantity = 25 Cycles
10.	Mating/Unmating Force ⁽³⁾

(1) Humidity = EIA-364-31

Test Condition = B (240 Hours)

Test Method = III (+25°C to +65°C @ 90% RH to 98% RH)

Test Exceptions: ambient pre-condition and delete steps 7a and 7b

(2) LLCR = EIA-364-23

Open Circuit Voltage = 20 mV Max

Test Current = 100 mA Max

(3) Mating/Unmating Force = EIA-364-13

(4) Thermal Shock = EIA-364-32

Exposure Time at Temperature Extremes = 1/2 Hour

Method A, Test Condition = I (-55°C to +85°C)

Test Duration = A-3 (100 Cycles)

FLOWCHARTS Continued**IR/DWV****Pin-to-Pin****Group 1**

S2SS-20-24-L-06.00-S
T2M-120-01-L-S-TH-WT-K-TR
2 Assemblies

Pin-to-Closest Metallic Hardware**Group 2**

S2SS-20-24-L-06.00-S
T2M-120-01-L-S-TH-WT-K-TR
2 Assemblies

Step	Description	Step	Description
1.	IR ⁽³⁾	1.	IR ⁽³⁾
2.	DWV at Test Voltage ⁽¹⁾ Test Voltage = 500 V	2.	DWV at Test Voltage ⁽¹⁾ Test Voltage = 500 V
3.	Thermal Shock ⁽⁴⁾	3.	Thermal Shock ⁽⁴⁾
4.	IR ⁽³⁾	4.	IR ⁽³⁾
5.	DWV at Test Voltage ⁽¹⁾ Test Voltage = 500 V	5.	DWV at Test Voltage ⁽¹⁾ Test Voltage = 500 V
6.	Humidity ⁽²⁾	6.	Humidity ⁽²⁾
7.	IR ⁽³⁾	7.	IR ⁽³⁾
8.	DWV at Test Voltage ⁽¹⁾ Test Voltage = 500 V	8.	DWV at Test Voltage ⁽¹⁾ Test Voltage = 500 V

- (1) DWV at Test Voltage = EIA-364-20
Test Condition = 1 (Sea Level)
DWV test voltage is equal to 75% of the lowest breakdown voltage
Test voltage applied for 60 seconds
- (2) Humidity = EIA-364-31
Test Condition = B (240 Hours)
Test Method = III (+25°C to +65°C @ 90% RH to 98% RH)
Test Exceptions: ambient pre-condition and delete steps 7a and 7b
- (3) IR = EIA-364-21
Test Condition = 500 Vdc, 2 Minutes Max
- (4) Thermal Shock = EIA-364-32
Exposure Time at Temperature Extremes = 1/2 Hour
Method A, Test Condition = I (-55°C to +85°C)
Test Duration = A-3 (100 Cycles)

FLOWCHARTS Continued**Cable Pull**

<u>Group 1</u>		<u>Group 2</u>		<u>Group 3</u>		<u>Group 4</u>	
S2SS-20-24-L-16.00-DR-NUS		S2SS-20-24-L-16.00-DR-NUS		S2SST-20-24-L-16.00-DR-NUS		S2SST-20-24-L-16.00-DR-NUS	
T2M-120-01-L-S-TH-WT-K-TR		T2M-120-01-L-S-TH-WT-K-TR		T2M-120-01-L-S-TH-WT-K-TR		T2M-120-01-L-S-TH-WT-K-TR	
5 Assemblies		5 Assemblies		5 Assemblies		5 Assemblies	
0 Degrees		90 Degrees		0 Degrees		90 Degrees	
Step	Description	Step	Description	Step	Description	Step	Description
1.	Cable Pull ⁽¹⁾	1.	Cable Pull ⁽¹⁾	1.	Cable Pull ⁽¹⁾	1.	Cable Pull ⁽¹⁾

(1) Cable Pull = EIA-364-38
 Measure and Record Force Required to Failure
 Failure = Discontinuity >1 microsecond at 10 ohms

Cable Flex

<u>Group 1</u>		<u>Group 2</u>	
S2SS-20-24-L-16.00-DR-NUS		S2SST-20-24-L-16.00-DR-NUS	
T2M-120-01-L-S-TH-WT-K-TR		T2M-120-01-L-S-TH-WT-K-TR	
8 Assemblies		8 Assemblies	
Circular Cable-0.625in		Circular Cable-0.625in	
Step	Description	Step	Description
1.	IR ⁽³⁾	1.	IR ⁽³⁾
2.	DWV at Test Voltage ⁽²⁾ Test Voltage = 500 V	2.	DWV at Test Voltage ⁽²⁾ Test Voltage = 500 V
3.	Cable Flex ⁽¹⁾	3.	Cable Flex ⁽¹⁾
4.	Visual Inspection	4.	Visual Inspection
5.	IR ⁽³⁾	5.	IR ⁽³⁾
6.	DWV at Test Voltage ⁽²⁾ Test Voltage = 500 V	6.	DWV at Test Voltage ⁽²⁾ Test Voltage = 500 V
7.	Rotate Cable 90°	7.	Rotate Cable 90°
8.	Cable Flex ⁽¹⁾	8.	Cable Flex ⁽¹⁾
9.	Visual Inspection	9.	Visual Inspection
10.	IR ⁽³⁾	10.	IR ⁽³⁾
11.	DWV at Test Voltage ⁽²⁾ Test Voltage = 500 V	11.	DWV at Test Voltage ⁽²⁾ Test Voltage = 500 V

- (1) Cable Flex = EIA-364-41
 Circular Jacket Cable - to be tested 90° each direction (180° total)
 Flat Cable - to be tested 70° each direction (140° total)
 Monitor continuity during flex testing
 Failure = Discontinuity >1 microsecond at 10 ohms
- (2) DWV at Test Voltage = EIA-364-20
 Test Condition = 1 (Sea Level)
 DWV test voltage is equal to 75% of the lowest breakdown voltage
 Test voltage applied for 60 seconds
- (3) IR = EIA-364-21
 Test Condition = 500 Vdc, 2 Minutes Max

ATTRIBUTE DEFINITIONS

The following is a brief, simplified description of attributes.

THERMAL SHOCK:

- 1) EIA-364-32, *Thermal Shock (Temperature Cycling) Test Procedure for Electrical Connectors*.
- 2) Test Condition I: -55°C to +85°C
- 3) Test Time: ½ hour dwell at each temperature extreme
- 4) Number of Cycles: 100
- 5) All test samples are pre-conditioned at ambient.
- 6) All test samples are exposed to environmental stressing in mated conditions.

HUMIDITY:

- 1) Reference document: EIA-364-31, *Humidity Test Procedure for Electrical Connectors*.
- 2) Test Condition B, 240 Hours.
- 3) Method III, +25° C to + 65° C, 90% to 98% Relative Humidity excluding sub-cycles 7a and 7b.
- 4) All samples are pre-conditioned at ambient.
- 5) All test samples are exposed to environmental stressing in mated conditions.

MATING/UNMATING:

- 1) Reference document: EIA-364-13, *Mating and Unmating Forces Test Procedure for Electrical Connectors*.
- 2) The full insertion position was to within 0.003” to 0.004” of the plug bottoming out in the receptacle to prevent damage to the system under test.
- 3) One of the mating parts is secured to a floating X-Y table to prevent damage during cycling.

LLCR:

- 1) EIA-364-23, *Low Level Contact Resistance Test Procedure for Electrical Connectors and Sockets*.
- 2) A computer program, *LLCR 221.exe*, ensures repeatability for data acquisition.
- 3) The following guidelines are used to categorize the changes in LLCR as a result from stressing
 - a. $\leq +5.0$ mOhms: -----Stable
 - b. +5.1 to +10.0 mOhms:-----Minor
 - c. +10.1 to +15.0 mOhms: -----Acceptable
 - d. +15.1 to +50.0 mOhms: -----Marginal
 - e. +50.1 to +1000 mOhms: -----Unstable
 - f. $>+1000$ mOhms:-----Open Failure

ATTRIBUTE DEFINITIONS Continued

The following is a brief, simplified description of attributes

INSULATION RESISTANCE (IR):

To determine the resistance of insulation materials to leakage of current through or on the surface of these materials when a DC potential is applied.

- 1) PROCEDURE:
 - a. Reference document: EIA-364-21, *Insulation Resistance Test Procedure for Electrical Connectors*.
 - b. Test Conditions:
 - i. Between Adjacent Contacts or Signal-to-Ground
 - ii. Electrification Time 2.0 minutes
 - iii. Test Voltage (500 VDC) corresponds to calibration settings for measuring resistances.
- 2) MEASUREMENTS:
- 3) When the specified test voltage is applied (VDC), the insulation resistance shall not be less than 1000 megohms.

DIELECTRIC WITHSTANDING VOLTAGE (DWV):

To determine if the sockets can operate at its rated voltage and withstand momentary over potentials due to switching, surges, and other similar phenomenon. Separate samples are used to evaluate the effect of environmental stresses so not to influence the readings from arcing that occurs during the measurement process.

- 1) PROCEDURE:
 - a. Reference document: EIA-364-20, *Withstanding Voltage Test Procedure for Electrical Connectors*.
 - b. Test Conditions:
 - i. Between Adjacent Contacts or Signal-to-Ground
 - ii. Barometric Test Condition 1
 - iii. Rate of Application 500 V/Sec
 - iv. Test Voltage (VAC) until breakdown occurs.
- 2) MEASUREMENTS/CALCULATIONS
 - a. The breakdown voltage shall be measured and recorded.
 - b. The dielectric withstanding voltage shall be recorded as 75% of the minimum breakdown voltage.
 - c. The working voltage shall be recorded as one-third (1/3) of the dielectric withstanding voltage (one-fourth of the breakdown voltage).

ATTRIBUTE DEFINITIONS Continued

The following is a brief, simplified description of attributes

CABLE PULL:

- 1) Secure cable near center and pull on connector
 - a. At 0°, in-line with cable
 - b. At 90°, in-line with cable



Fig. 1

0° Connector pull

CABLE Flex:

- 1) Oscillate and monitor electrical continuity for open circuit indication.
 - a. $\pm 90^\circ$ Flex Mode, bend up to 200 cycles. load on 16 oz.



Fig. 2

(Setup picture)

RESULTS

Mating – Unmating Forces

Mating/Unmating Durability Group (S2SS-20-24-L-06.00-S\T2M-120-01-L-S-TH-WT-K-TR)

- **Initial**
 - **Mating**
 - Min ----- 3.23 lbs
 - Max ----- 3.62 lbs
 - **Unmating**
 - Min ----- 2.45 lbs
 - Max ----- 3.33 lbs
- **After 25 Cycles**
 - **Mating**
 - Min ----- 3.73 lbs
 - Max ----- 4.25 lbs
 - **Unmating**
 - Min ----- 3.32 lbs
 - Max ----- 3.81 lbs
- **After 50 Cycles**
 - **Mating**
 - Min ----- 3.85 lbs
 - Max ----- 4.46 lbs
 - **Unmating**
 - Min ----- 3.65 lbs
 - Max ----- 4.35 lbs
- **After 75 Cycles**
 - **Mating**
 - Min ----- 4.00 lbs
 - Max ----- 4.63 lbs
 - **Unmating**
 - Min ----- 3.90 lbs
 - Max ----- 4.71 lbs
- **After 100 Cycles**
 - **Mating**
 - Min ----- 4.11 lbs
 - Max ----- 4.71 lbs
 - **Unmating**
 - Min ----- 4.10 lbs
 - Max ----- 4.94 lbs
- **After Humidity**
 - **Mating**
 - Min ----- 3.04 lbs
 - Max ----- 3.44 lbs
 - **Unmating**
 - Min ----- 2.67 lbs
 - Max ----- 3.23 lbs

RESULTS Continued**Mating/Unmating Basic (S2SS-02-24-L-06.00-S\T2M-102-01-L-S-SM-WT)**

- **Initial**
 - **Mating**
 - **Min** ----- **0.31 lbs**
 - **Max** ----- **0.40 lbs**
 - **Unmating**
 - **Min** ----- **0.30 lbs**
 - **Max** ----- **0.40 lbs**
- **After 25 Cycles**
 - **Mating**
 - **Min** ----- **0.35 lbs**
 - **Max** ----- **0.44 lbs**
 - **Unmating**
 - **Min** ----- **0.35 lbs**
 - **Max** ----- **0.45 lbs**
- **After 50 Cycles**
 - **Mating**
 - **Min** ----- **0.37 lbs**
 - **Max** ----- **0.45 lbs**
 - **Unmating**
 - **Min** ----- **0.42 lbs**
 - **Max** ----- **0.49 lbs**
- **After 75 Cycles**
 - **Mating**
 - **Min** ----- **0.38 lbs**
 - **Max** ----- **0.47 lbs**
 - **Unmating**
 - **Min** ----- **0.46 lbs**
 - **Max** ----- **0.53 lbs**
- **After 100 Cycles**
 - **Mating**
 - **Min** ----- **0.39 lbs**
 - **Max** ----- **0.48 lbs**
 - **Unmating**
 - **Min** ----- **0.50 lbs**
 - **Max** ----- **0.56 lbs**

RESULTS Continued**Mating/Unmating Basic (S2SS-10-24-L-06.00-S\T2M-110-01-L-S-TH-WT-K-TR)**

- **Initial**
 - **Mating**
 - **Min** ----- 1.63 lbs
 - **Max** ----- 1.99 lbs
 - **Unmating**
 - **Min** ----- 1.38 lbs
 - **Max** ----- 1.98 lbs
- **After 25 Cycles**
 - **Mating**
 - **Min** ----- 1.84 lbs
 - **Max** ----- 2.22 lbs
 - **Unmating**
 - **Min** ----- 1.54 lbs
 - **Max** ----- 2.05 lbs
- **After 50 Cycles**
 - **Mating**
 - **Min** ----- 1.93 lbs
 - **Max** ----- 2.29 lbs
 - **Unmating**
 - **Min** ----- 1.80 lbs
 - **Max** ----- 2.27 lbs
- **After 75 Cycles**
 - **Mating**
 - **Min** ----- 1.99 lbs
 - **Max** ----- 2.33 lbs
 - **Unmating**
 - **Min** ----- 1.99 lbs
 - **Max** ----- 2.42 lbs
- **After 100 Cycles**
 - **Mating**
 - **Min** ----- 2.08 lbs
 - **Max** ----- 2.39 lbs
 - **Unmating**
 - **Min** ----- 2.14 lbs
 - **Max** ----- 2.56 lbs

RESULTS Continued**Insulation Resistance minimums, IR****Pin to Pin**

- **Initial**
 - Mated-----45000 Meg Ω ----- Passed
 - Unmated ----- 45000 Meg Ω ----- Passed
- **Thermal Shock**
 - Mated----- 45000 Meg Ω ----- Passed
 - Unmated ----- 45000 Meg Ω ----- Passed
- **Humidity**
 - Mated-----45000 Meg Ω ----- Passed
 - Unmated -----45000 Meg Ω ----- Passed

Pin to Closest Metallic Hardware

- **Initial**
 - Mated-----45000 Meg Ω ----- Passed
 - Unmated ----- 45000 Meg Ω ----- Passed
- **Thermal Shock**
 - Mated----- 45000 Meg Ω ----- Passed
 - Unmated ----- 45000 Meg Ω ----- Passed
- **Humidity**
 - Mated-----45000 Meg Ω ----- Passed
 - Unmated -----45000 Meg Ω ----- Passed

Dielectric Withstanding Voltage minimums, DWV

- **Minimums**
 - Breakdown Voltage-----666 VAC
 - Test Voltage -----500 VAC
 - Working Voltage ----- 167 VAC

Pin to Pin

- **Initial DWV** -----Passed
- **Thermal DWV**-----Passed
- **Humidity DWV**-----Passed

Pin to Closest Metallic Hardware

- **Initial DWV** -----Passed
- **Thermal DWV**-----Passed
- **Humidity DWV**-----Passed

RESULTS Continued

Cable Pull force

S2SS-20-24-L-16.00-DR-NUS\T2M-120-01-L-S-TH-WT-K-TR

- **0° Pull**
 - **Min**-----**27.05 lbs**
 - **Max**-----**29.97 lbs**

- **90° Pull**
 - **Min**-----**20.93 lbs**
 - **Max**-----**22.30 lbs**

S2SST-20-24-L-16.00-DR-NUS\T2M-120-01-L-S-TH-WT-K-TR

- **0° Pull**
 - **Min**-----**27.76 lbs**
 - **Max**-----**29.60 lbs**

- **90° Pull**
 - **Min**-----**22.10 lbs**
 - **Max**-----**23.35 lbs**

RESULTS Continued**Cable Flex:****Insulation Resistance minimums, IR****S2SS-20-24-L-16.00-DR-NUS\T2M-120-01-L-S-TH-WT-K-TR****Pin to Pin**

- **Initial**
 - Mated-----45000 Meg Ω ----- Passed
- **After 100 flex cycles**
 - Mated-----45000 Meg Ω ----- Passed
- **After 100 flex cycles Rotate Cable 90°**
 - Mated-----45000 Meg Ω ----- Passed

Pin to Closest Metallic Hardware

- **Initial**
 - Mated-----45000 Meg Ω ----- Passed
- **After 100 flex cycles**
 - Mated-----45000 Meg Ω ----- Passed
- **After 100 flex cycles Rotate Cable 90°**
 - Mated-----45000 Meg Ω ----- Passed

S2SST-20-24-L-16.00-DR-NUS\T2M-120-01-L-S-TH-WT-K-TR**Pin to Pin**

- **Initial**
 - Mated-----45000 Meg Ω ----- Passed
- **After 100 flex cycles**
 - Mated-----45000 Meg Ω ----- Passed
- **After 100 flex cycles Rotate Cable 90°**
 - Mated-----45000 Meg Ω ----- Passed

Pin to Closest Metallic Hardware

- **Initial**
 - Mated-----45000 Meg Ω ----- Passed
- **After 100 flex cycles**
 - Mated-----45000 Meg Ω ----- Passed
- **After 100 flex cycles Rotate Cable 90°**
 - Mated-----45000 Meg Ω ----- Passed

RESULTS Continued**Dielectric Withstanding Voltage minimums, DWV**

- Break Down Voltage-----666 VAC
- Test Voltage-----500 VAC
- Working Voltage-----167 VAC

S2SS-20-24-L-16.00-DR-NUS\T2M-120-01-L-S-TH-WT-K-TR**Pin to Pin**

- Initial DWV -----Passed
- After 100 Flex cycles DWV -----Passed
- After 100 Flex cycles Rotate Cable 90° DWV -----Passed

Pin to Closest Metallic Hardware

- Initial DWV -----Passed
- After 100 Flex cycles DWV-----Passed
- After 100 Flex cycles Rotate Cable 90° DWV -----Passed

S2SST-20-24-L-16.00-DR-NUS\T2M-120-01-L-S-TH-WT-K-TR**Pin to Pin**

- Initial DWV -----Passed
- After 100 Flex cycles DWV -----Passed
- After 100 Flex cycles Rotate Cable 90° DWV -----Passed

Pin to Closest Metallic Hardware

- Initial DWV -----Passed
- After 100 Flex cycles DWV-----Passed
- After 100 Flex cycles Rotate Cable 90° DWV -----Passed

RESULTS Continued**LLCR Durability (160 LLCR test points)**

- **Initial** ----- 17.09 mOhms Max
- **Durability, 100 Cycles**
 - **<= +5.0 mOhms**-----160 Points ----- Stable
 - **+5.1 to +10.0 mOhms**-----0 Points ----- Minor
 - **+10.1 to +15.0 mOhms** -----0 Points ----- Acceptable
 - **+15.1 to +50.0 mOhms** -----0 Points ----- Marginal
 - **+50.1 to +1000 mOhms**-----0 Points ----- Unstable
 - **>+1000 mOhms**-----0 Points ----- Open Failure
- **Thermal**
 - **<= +5.0 mOhms**-----160 Points ----- Stable
 - **+5.1 to +10.0 mOhms**-----0 Points ----- Minor
 - **+10.1 to +15.0 mOhms** -----0 Points ----- Acceptable
 - **+15.1 to +50.0 mOhms** -----0 Points ----- Marginal
 - **+50.1 to +1000 mOhms**-----0 Points ----- Unstable
 - **>+1000 mOhms**-----0 Points ----- Open Failure
- **Humidity**
 - **<= +5.0 mOhms**-----160 Points ----- Stable
 - **+5.1 to +10.0 mOhms**-----0 Points ----- Minor
 - **+10.1 to +15.0 mOhms** -----0 Points ----- Acceptable
 - **+15.1 to +50.0 mOhms** -----0 Points ----- Marginal
 - **+50.1 to +1000 mOhms**-----0 Points ----- Unstable
 - **>+1000 mOhms**-----0 Points ----- Open Failure

DATA SUMMARIES**MATING/UNMATING:****Mating/Unmating Durability Group (S2SS-20-24-L-06.00-S\T2M-120-01-L-S-TH-WT-K-TR)**

	Initial				After 25 Cycles			
	Mating		Unmating		Mating		Unmating	
	Newtons	Force (Lbs)	Newtons	Force (Lbs)	Newtons	Force (Lbs)	Newtons	Force (Lbs)
Minimum	14.37	3.23	10.90	2.45	16.59	3.73	14.77	3.32
Maximum	16.10	3.62	14.81	3.33	18.90	4.25	16.95	3.81
Average	15.21	3.42	12.58	2.83	17.74	3.99	16.13	3.63
St Dev	0.67	0.15	1.36	0.31	0.93	0.21	0.81	0.18
Count	8	8	8	8	8	8	8	8
	After 50 Cycles				After 75 Cycles			
	Mating		Unmating		Mating		Unmating	
	Newtons	Force (Lbs)	Newtons	Force (Lbs)	Newtons	Force (Lbs)	Newtons	Force (Lbs)
Minimum	17.12	3.85	16.24	3.65	17.79	4.00	17.35	3.90
Maximum	19.84	4.46	19.35	4.35	20.59	4.63	20.95	4.71
Average	18.42	4.14	17.86	4.02	19.07	4.29	19.17	4.31
St Dev	0.99	0.22	1.10	0.25	1.00	0.23	1.24	0.28
Count	8	8	8	8	8	8	8	8
	After 100 Cycles				After Humidity			
	Mating		Unmating		Mating		Unmating	
	Newtons	Force (Lbs)	Newtons	Force (Lbs)	Newtons	Force (Lbs)	Newtons	Force (Lbs)
Minimum	18.28	4.11	18.24	4.10	13.52	3.04	11.88	2.67
Maximum	20.95	4.71	21.97	4.94	15.30	3.44	14.37	3.23
Average	19.61	4.41	20.21	4.54	14.40	3.24	13.16	2.96
St Dev	1.01	0.23	1.36	0.31	0.58	0.13	0.89	0.20
Count	8	8	8	8	8	8	8	8

DATA SUMMARIES Continued**Mating/Unmating Basic (S2SS-02-24-L-06.00-S\T2M-102-01-L-S-SM-WT)**

	Initial				After 25 Cycles			
	Mating		Unmating		Mating		Unmating	
	Newtons	Force (Lbs)	Newtons	Force (Lbs)	Newtons	Force (Lbs)	Newtons	Force (Lbs)
Minimum	1.38	0.31	1.33	0.30	1.56	0.35	1.56	0.35
Maximum	1.78	0.40	1.78	0.40	1.96	0.44	2.00	0.45
Average	1.62	0.36	1.62	0.36	1.77	0.40	1.76	0.40
St Dev	0.15	0.03	0.13	0.03	0.14	0.03	0.13	0.03
Count	8	8	8	8	8	8	8	8
	After 50 Cycles				After 75 Cycles			
	Mating		Unmating		Mating		Unmating	
	Newtons	Force (Lbs)	Newtons	Force (Lbs)	Newtons	Force (Lbs)	Newtons	Force (Lbs)
Minimum	1.65	0.37	1.87	0.42	1.69	0.38	2.05	0.46
Maximum	2.00	0.45	2.18	0.49	2.09	0.47	2.36	0.53
Average	1.85	0.42	2.01	0.45	1.91	0.43	2.17	0.49
St Dev	0.13	0.03	0.11	0.02	0.13	0.03	0.10	0.02
Count	8	8	8	8	8	8	8	8
	After 100 Cycles							
	Mating		Unmating					
	Newtons	Force (Lbs)	Newtons	Force (Lbs)				
Minimum	1.73	0.39	2.22	0.50				
Maximum	2.14	0.48	2.49	0.56				
Average	1.99	0.45	2.31	0.52				
St Dev	0.13	0.03	0.10	0.02				
Count	8	8	8	8				

DATA SUMMARIES Continued**Mating/Unmating Basic (S2SS-10-24-L-06.00-S\T2M-110-01-L-S-TH-WT-K-TR)**

	Initial				After 25 Cycles			
	Mating		Unmating		Mating		Unmating	
	Newtons	Force (Lbs)	Newtons	Force (Lbs)	Newtons	Force (Lbs)	Newtons	Force (Lbs)
Minimum	7.25	1.63	6.14	1.38	8.18	1.84	6.85	1.54
Maximum	8.85	1.99	8.81	1.98	9.87	2.22	9.12	2.05
Average	8.16	1.84	7.77	1.75	9.23	2.08	7.81	1.76
St Dev	0.50	0.11	0.92	0.21	0.55	0.12	0.67	0.15
Count	8	8	8	8	8	8	8	8
	After 50 Cycles				After 75 Cycles			
	Mating		Unmating		Mating		Unmating	
	Newtons	Force (Lbs)	Newtons	Force (Lbs)	Newtons	Force (Lbs)	Newtons	Force (Lbs)
Minimum	8.58	1.93	8.01	1.80	8.85	1.99	8.85	1.99
Maximum	10.19	2.29	10.10	2.27	10.36	2.33	10.76	2.42
Average	9.45	2.12	8.68	1.95	9.63	2.17	9.39	2.11
St Dev	0.49	0.11	0.64	0.14	0.46	0.10	0.60	0.14
Count	8	8	8	8	8	8	8	8
	After 100 Cycles							
	Mating		Unmating					
	Newtons	Force (Lbs)	Newtons	Force (Lbs)				
Minimum	9.25	2.08	9.52	2.14				
Maximum	10.63	2.39	11.39	2.56				
Average	9.89	2.22	9.97	2.24				
St Dev	0.45	0.10	0.62	0.14				
Count	8	8	8	8				

DATA SUMMARIES Continued**INSULATION RESISTANCE (IR):**

	Pin to Pin		
	Mated	Unmated	Unmated
Minimum	S2SS/T2M	S2SS	T2M
Initial	45000	45000	45000
Thermal	45000	45000	45000
Humidity	45000	45000	45000

	Pin to Closest Metallic Hardware		
	Mated	Unmated	Unmated
Minimum	S2SS/T2M	S2SS	T2M
Initial	45000	Not Tested	45000
Thermal	45000	Not Tested	45000
Humidity	45000	Not Tested	45000

DIELECTRIC WITHSTANDING VOLTAGE (DWV):

Voltage Rating Summary	
Minimum	S2SS/T2M
Break Down Voltage	666
Test Voltage	500
Working Voltage	167

Pin to Pin	
Initial Test Voltage	Passed
After Thermal Test Voltage	Passed
After Humidity Test Voltage	Passed

Pin to Closest Metallic Hardware	
Initial Test Voltage	Passed
After Thermal Test Voltage	Passed
After Humidity Test Voltage	Passed

DATA SUMMARIES Continued**Cable Pull Force:****S2SS-20-24-L-16.00-DR-NUS\T2M-120-01-L-S-TH-WT-K-TR****0° Pull**

	Force (lbs)
Minimum	27.05
Maximum	29.97
Average	28.16

90° Pull

	Force (lbs)
Minimum	20.93
Maximum	22.30
Average	21.83

S2SST-20-24-L-16.00-DR-NUS\T2M-120-01-L-S-TH-WT-K-TR**0° Pull**

	Force (lbs)
Minimum	27.76
Maximum	29.60
Average	28.36

90° Pull

	Force (lbs)
Minimum	22.10
Maximum	23.35
Average	22.82

DATA SUMMARIES Continued**Cable Flex:****Insulation Resistance minimums, IR****S2SS-20-24-L-16.00-DR-NUS\T2M-120-01-L-S-TH-WT-K-TR**

Pin to Pin	
Mated	
Minimum	
Initial	45000
After 100 Flex Cycles	45000
After 100 Flex Cycles Rotate Cable 90°	45000

Pin to Closest Metallic Hardware	
Mated	
Minimum	
Initial	45000
After 100 Flex Cycles	45000
After 100 Flex Cycles Rotate Cable 90°	45000

S2SST-20-24-L-16.00-DR-NUS\T2M-120-01-L-S-TH-WT-K-TR

Pin to Pin	
Mated	
Minimum	
Initial	45000
After 100 Flex Cycles	45000
After 100 Flex Cycles Rotate Cable 90°	45000

Pin to Closest Metallic Hardware	
Mated	
Minimum	
Initial	45000
After 100 Flex Cycles	45000
After 100 Flex Cycles Rotate Cable 90°	45000

DATA SUMMARIES Continued**Dielectric Withstanding Voltage minimums, DWV****S2SS-20-24-L-16.00-DR-NUS\T2M-120-01-L-S-TH-WT-K-TR**

Voltage Rating Summary	
Minimum	S2SS\T2M
Break Down Voltage	666
Test Voltage	500
Working Voltage	167

Pin to Pin	
Initial Test Voltage	Passed
After 100 Flex Cycles Test Voltage	Passed
After 100 Flex Cycles Test Voltage Rotate Cable 90°	Passed

Pin to Closest Metallic Hardware	
Initial Test Voltage	Passed
After 100 Flex Cycles Test Voltage	Passed
After 100 Flex Cycles Test Voltage Rotate Cable 90°	Passed

S2SST-20-24-L-16.00-DR-NUS\T2M-120-01-L-S-TH-WT-K-TR

Voltage Rating Summary	
Minimum	S2SST\T2M
Break Down Voltage	666
Test Voltage	500
Working Voltage	167

Pin to Pin	
Initial Test Voltage	Passed
After 100 Flex Cycles Test Voltage	Passed
After 100 Flex Cycles Test Voltage Rotate Cable 90°	Passed

Pin to Closest Metallic Hardware	
Initial Test Voltage	Passed
After 100 Flex Cycles Test Voltage	Passed
After 100 Flex Cycles Test Voltage Rotate Cable 90°	Passed

DATA SUMMARIES Continued**LLCR Durability:**

- 1) A total of 160 points were measured.
- 2) EIA-364-23, *Low Level Contact Resistance Test Procedure for Electrical Connectors and Sockets*.
- 3) A computer program, *LLCR 221.exe*, ensures repeatability for data acquisition.
- 4) The following guidelines are used to categorize the changes in LLCR as a result from stressing.
 - a. $\leq +5.0$ mOhms: -----Stable
 - b. $+5.1$ to $+10.0$ mOhms: -----Minor
 - c. $+10.1$ to $+15.0$ mOhms: -----Acceptable
 - d. $+15.1$ to $+50.0$ mOhms: -----Marginal
 - e. $+50.1$ to $+1000$ mOhms: -----Unstable
 - f. $>+1000$ mOhms: -----Open Failure

LLCR Measurement Summaries by Pin Type				
Date	2026/1/28	2026/2/4	2026/3/2	2026/3/13
Room Temp (Deg C)	25	25	25	25
Rel Humidity (%)	56	56	56	56
Technician	Kason He	Kason He	Kason He	Kason He
mOhm values	Actual	Delta	Delta	Delta
	Initial	100 Cycles	Therm Shck	Humidity
Pin Type: Signal 1				
Average	16.09	0.16	0.45	0.7
St. Dev.	0.28	0.22	0.41	0.58
Min	15.04	0	0.01	0.01
Max	17.09	1.64	2.28	3.32
Summary Count	160	160	160	160
Total Count	160	160	160	160

LLCR Delta Count by Category						
	Stable	Minor	Acceptable	Marginal	Unstable	Open
mOhms	≤ 5	$>5 \text{ \& } \leq 10$	$>10 \text{ \& } \leq 15$	$>15 \text{ \& } \leq 50$	$>50 \text{ \& } \leq 1000$	>1000
100 Cycles	160	0	0	0	0	0
Ther Shock	160	0	0	0	0	0
Humidity	160	0	0	0	0	0

EQUIPMENT AND CALIBRATION SCHEDULES**Equipment #:** HZ-TCT-01**Description:** Normal force analyzer**Manufacturer:** Mecmesin Multitester**Model:** Mecmesin Multitester 2.5-i**Serial #:** 08-1049-04**Accuracy:** Last Cal: 4/26/2025, Next Cal: 4/25/2026**Equipment #:** HZ-THC-01**Description:** Humidity transmitter**Manufacturer:** Thermtron**Model:** SM-8-8200**Serial #:** 38846**Accuracy:** Last Cal: 2/28/2026, Next Cal: 2/27/2027**Equipment #:** HZ-TSC-01**Description:** Vertical Thermal Shock Chamber**Manufacturer:** Cincinnatti Sub Zero**Model:** VTS-3-6-6-SC/AC**Serial #:** 10-VT14994**Accuracy:** See Manual

... Last Cal: 06/28/2025, Next Cal: 06/27/2026

Equipment #: DG-HPT-01**Description:** Hipot Safety Tester**Manufacturer:** Vitrek**Model:** V73**Serial #:** 025866**Accuracy:**

... Last Cal: 04/16/2025, Next Cal: 04/15/2026

Equipment #: HZ-MO-05**Description:** Micro-ohmmeter**Manufacturer:** Keithley**Model:** 3706**Serial #:** 1285188**Accuracy:** Last Cal: 11/14/2025, Next Cal: 11/13/2026