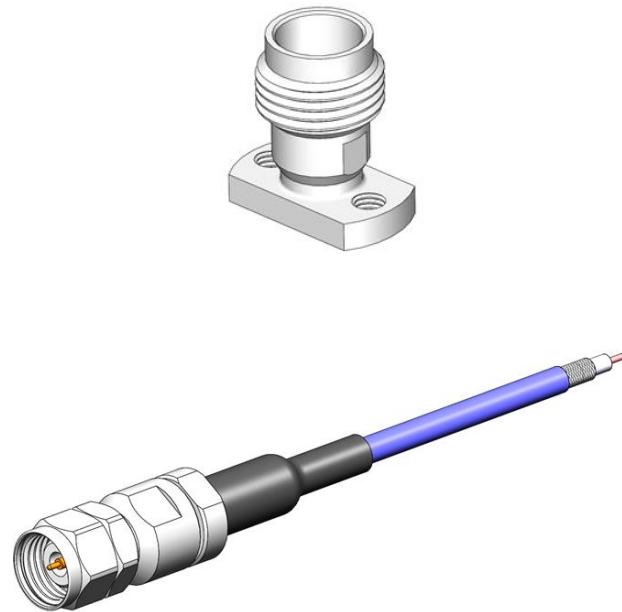


Project Number: Design Qualification Test Report	Tracking Code: 2464038_Report_Rev_1
Requested by: Tim Clare	Date: 8/19/2020
Part #: 240-J-P-EP-ST-CMM-2/RF086-24SP-505050-0304	
Part description: 240-J-P/RF086	Tech: Aaron McKim
Test Start: 7/20/2020	Test Completed: 8/7/2020

**DESIGN QUALIFICATION TEST REPORT****240-J-P/RF086****240-J-P-EP-ST-CMM-2/RF086-24SP-505050-0304**

REVISION HISTORY

DATA	REV.NUM.	DESCRIPTION	ENG
8/19/2020	1	Initial Issue	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 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 DWV/IR are visually inspected and cleaned if necessary.
- 7) Any additional preparation will be noted in the individual test sequences.

FLOWCHARTS

IR/DWV

Pin-to-Closest Metallic Hardware

Group 1		Group 2		Group 3		Group 4	
240-J-P-EP-ST-CMM-X		240-J-P-EP-ST-CMM-X		RF086-24SP-505050-0304		240-J-P-EP-ST-CMM-X	
RF086-24SP-505050-0304		2 Assemblies		2 Assemblies		RF086-24SP-505050-0304	
2 Assemblies						2 Assemblies	
Step	Description	Step	Description	Step	Description	Step	Description
1.	DWV Breakdown ⁽²⁾	1.	DWV Breakdown ⁽²⁾	1.	DWV Breakdown ⁽²⁾	1.	IR ⁽³⁾
							DWV at Test Voltage ⁽¹⁾
							Thermal Shock ⁽⁴⁾
							IR ⁽³⁾
							DWV at Test Voltage ⁽¹⁾

(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) DWV Breakdown = 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

(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)

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: -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 the mated condition.

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 5000 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 withstand 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 withstand voltage (one-fourth of the breakdown voltage).

RESULTS

Insulation Resistance minimums, IR

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 ----- 921 VAC
 - Test Voltage ----- 691 VAC
 - Working Voltage ----- 230 VAC

Pin to Closest Metallic Hardware

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

DATA SUMMARIES

INSULATION RESISTANCE (IR):

	Pin to Closest Metallic Hardware		
	Mated	Unmated	Unmated
Minimum	240-J-P/RF086	240-J-P	RF086
Initial	45000	45000	45000
Thermal	45000	45000	45000
Humidity	45000	45000	45000

DIELECTRIC WITHSTANDING VOLTAGE (DWV):

Voltage Rating Summary	
Minimum	240-J-P/RF086
Break Down Voltage	921
Test Voltage	691
Working Voltage	230

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

EQUIPMENT AND CALIBRATION SCHEDULES

Equipment #: TSC-01

Description: Vertical Thermal Shock Chamber

Manufacturer: Cincinnati Sub Zero

Model: VTS-3-6-6-SC/AC

Serial #: 10-VT14993

Accuracy: See Manual

... Last Cal: 06/30/2020, Next Cal: 06/30/2021

Equipment #: HPT-01

Description: Hipot Safety Tester

Manufacturer: Vitrek

Model: V73

Serial #: 019808

Accuracy:

... Last Cal: 05/15/2020, Next Cal: 05/15/2021