025 (0.64) TH Vertical Header

1. INTRODUCTION

1.1. Purpose

Testing was performed on the 025 (0.64) TH Vertical Header to determine if it meets the requirements of Product Specification 108-51111.

1.2. Scope

This report covers the results of electrical, mechanical and environmental performance requirements testing of 025 (0.64) TH Vertical Header.

The qualification testing was performed from SEP 2015 to DEC 2015

1.3. Conclusion

025 (0.64) TH Vertical Header meets the requirements of Product Specification 108-51111.

1.4. Product Description

This connector has been designed for use of automotive wire to board connector.

1.5. Test Samples

Samples were taken randomly from current production. The following samples where used (Fig. 1)

Part Number	Part Description
2237033	TH40V 025 Cap Connector (Male)
Sumitomo PN	NH40FW Female Connector
Sumitomo PN	NHF Terminal

Figure 1

Note: The model number (part number) is configured with a single digit number with a dash in the list parent number. For more information on the dash with a number for each parent numbers refer to the drawing or catalog for the customer. It should be noted that if the prefix is zero, zero and dash are omitted.

2. TEST CONTENTS

Test Description	Requirement	Judgement
BEFORE REFLOW		
Visual Examination	No defect that would impair normal operation	Acceptable
ELECTRICAL		
Insulation Resistance	Ri ≥ 100 MΩ	Acceptable
Dielectric Withstanding Voltage	No breakdown, no flashover	Acceptable
MECHANICAL		
Pin Retention into the Header	F ≥ 25N	Acceptable
Mounting Header on the PCB	F ≤ 50N	Acceptable
Retention Header on the PCB	F ≤ 10N	Acceptable
AFTER REFLOW		
Visual Examination	Naked eye examination	Acceptable
MECHANICAL		
Mating Force into Counterpart	40P: F ≤ 100N	Acceptable
Unmating force into Counterpart (with action on the locking device)	40P: F ≤ 100N	Acceptable
Latching Force into Counterpart (without action on the locking device)	F ≤ 120N	Acceptable
Mechanical locating device	F ≤ 150N	Acceptable
Resistance to Maneuver	Neither breakdown nor crack, connector mating and unmating must be possible 5th maneuver 40P: F ≤ 100N Ri ≥ 100MΩ/1000V AC ΔRc < 5mΩ	Acceptable

Figure 2

3. SUMMARY OF TEST RESULT FOR TH40V

TEST ITEM	SPEC		MAX	MIN	AVE	Judge
Visual Inspection	No defect that would impair normal operation		OK			OK
Insulation Resistance	Ri ≥ 100 MΩ	Between Contacts	$9.5X10^3$	$8.3X10^3$	$8.8X10^3$	OK
		Between Contact and Housing	$37.4X10^3$	$33.1X10^3$	$34.9X10^3$	OK
Dielectric Withstanding Voltage	No breakdown, no flashover	Between Contacts	No breakdown, no flashover			OK
		Between Contact and Housing	No breakdown, no flashover			OK
Pin Retention into the Header	F ≥ 25N	Push from PCB side	47.1	32.9	40.8	OK
		Push from mating side	60	42.7	51.5	OK
Mounting Header on the PCB	F ≤ 50N		26.3	22.2	24.3	OK
Retention Header on the PCB	F ≤ 10N		22.0	18.8	20.3	OK
Visual Inspection	No defect that would impair normal operation		OK			OK
Mating Force into Counterpart	40P: F ≤ 100N		57.9	56.8	57.4	OK
Unmating force into Counterpart (with action on the locking device)	40P: F ≤ 100N		43.7	42.1	43.2	OK
Latching Force into Counterpart (without action on the locking device)	F ≤ 120N		219.9	197.4	210.9	OK
Mechanical locating device	F ≤ 150N		Not Applicable			
Resistance to Maneuver	No defect that would impair normal operation		OK			OK
	Neither breakdown nor crack, connector mating and unmating must be possible	Mating At ambient	57.9	56.8	57.4	OK
		Mating 5th maneuver At ambient	51.0	49.0	50.1	OK
		Mating 5th maneuver At -30°C	55.8	52.7	54.6	OK
		Unmating At ambient	43.7	42.1	43.2	OK
		Unmating 5th maneuver At ambient	41.7	39.8	40.8	OK
		Unmating 5th maneuver At -30°C	42.4	40.5	41.6	OK

TEST ITEM	SPEC		MAX	MIN	AVE	Judge
Resistance to Maneuver	Ri ≥ 100MΩ	Between contacts At ambient	$9.5X10^3$	$8.3X10^3$	$8.8X10^3$	OK
		Between contacts 5th maneuver At ambient	$9.4X10^3$	$8.1X10^3$	$8.8X10^3$	OK
		Between contacts 5th maneuver At -30°C	$9.6X10^3$	$5.7X10^3$	$7.8X10^3$	OK
		Between contact and housing At ambient	$37.4X10^3$	$33.1X10^3$	$34.9X10^3$	OK
		Between contact and housing 5th maneuver At ambient	$32.0X10^3$	$28.7X10^3$	$30.3X10^3$	OK
		Between contact and housing 5th maneuver At -30°C	$32.4X10^3$	$27.2X10^3$	$29.7X10^3$	OK
	1000V AC	Between contacts At ambient	No breakdown, no flashover			OK
		Between contacts 5th maneuver At ambient	No breakdown, no flashover			OK
		Between contacts 5th maneuver At -30°C	No breakdown, no flashover			OK
		Between contact and housing At ambient	No breakdown, no flashover			OK
		Between contact and housing 5th maneuver At ambient	No breakdown, no flashover			OK
		Between contact and housing 5th maneuver At -30°C	No breakdown, no flashover			OK
	ΔRc < 5mΩ	5th maneuver At ambient	1.0	0.0	0.3	OK
		5th maneuver At -30°C	0.6	0.0	0.2	OK