



SPECIFICATION

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SPEC. NO.: PS-92805-00XXX REVISION: 1

PRODUCT NAME: HSD Male CONNECTOR

PRODUCT NO: 92805 Series

APPROVED: Warles Lee DATE: 2021/08/31	CHECKED: Warles Lee DATE: 2021/08/31	PREPARED: Ben Chung DATE: 2021/08/31
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TITLE: HSD MALE CONNECTOR

RELEASE DATE: 2021/08/31

REVISION: 1

ECN No: ECN

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1 Revision History

Rev.	ECN #	Revision Description	Prepared	Date
1		PROPOSAL	Ben Chung	2021/08/31

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2 SCOPE

This specification covers performance, tests and quality requirements for HSD Male CONNECTOR.

3 APPLICABLE DOCUMENTS

EIA-364 ELECTRONICS INDUSTRIES ASSOCIATION
SAE/USCAR-2 Rev 6

4 REQUIREMENTS

4.1 Design and Construction

Product shall be of design, construction and physical dimensions specified on applicable product drawing.

4.2 Materials and Finish

4.2.1 Contact: High performance copper alloy (Phosphor Bronze)

Finish: (a) Contact Area: **Gold Flash Overall**
(b) Under plate: **Nickel-Plated Allover**

4.2.2 Housing: Thermoplastic or Thermoplastic High Temp., UL94V-0

4.2.3 Shell: **ZAMAK3, MATTE TIN.**

4.2.4 Dielectric: **LCP**

4.2.5 Baffle : **STAINLESS STEEL**

4.3 Ratings

4.3.1 Voltage: **100V rms**

4.3.2 Current: **1.5 A DC Max**

4.3.3 Operating Temperature : **-40°C to +105°C**

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5 Performance

5.1. Test Requirements and Procedures Summary

Item	Requirement	Standard
Examination of Product	Product shall meet requirements of applicable product drawing and specification.	Visual, dimensional and functional per applicable quality inspection plan.
ELECTRICAL		
Item	Requirement	Standard
Signal Contact Resistance Outer Contact Resistance	SCR: 10 mΩ Max. OCR: 7.5 mΩ Max.	Mate connectors, measure by dry circuit, 20mV Max., 100mA Max. (EIA-364-23)
Insulation Resistance	1000 M Ω Min.	Unmated connectors, apply 500 V DC between adjacent terminals. (EIA-364-21)
Dielectric Withstanding Voltage	300 VAC Min. at sea level for 1 minute. No discharge, flashover or breakdown. Current leakage: 1 mA max.	Test between adjacent contacts of unmated connectors. (EIA-364-20)
Temperature rise	30°C Max. Change allowed	Mate connector: measure the temperature rise at rated current after:0.5 A/Power contact. The temperature rise above ambient shall not exceed 30°C The ambient condition is still air at 25°C (EIA-364-70 METHOD 2)
Return Loss	DC up to 2 GHz ≥ 20dB to 1GHz ≥ 17dB to 2GHz	A common test fixture for connector characterization shall be used. This is differential insertion loss requirement. (EIA-364-108)
Insertion Loss	≤ 0.2 dB @ 1.0 GHz	A common test fixture for connector characterization shall be used. This is differential insertion loss requirement. (EIA-364-101)
Nearend-Crosstalk Farend-Crosstalk	N-Crosstalk: 30 dB Max. F-Crosstalk: 25dB Max.	A common test fixture for connector characterization shall be used. This is differential cross-talk requirement. (EIA-364-90)



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MECHANICAL

Item	Requirement	Standard
Mating / Un-mating Forces	Mating Force: 30 N Max. Un-mating Force: 5 N Min.	Operation Speed : 25.4 ± 3 mm/minute. Measure the force required to mate/Un-mate connector. (EIA-364-13)
Vibration/Mechanical Shock	No loss of electrical continuity VSWR check before and after See Product Qualification and Test Sequence Group 2	SAE/USCAR-2 Rev 5, 5.4.6.3
Durability	MIN 25 cycles.	The sample should be mounted in the tester and fully mated and unmated the number of cycles specified at the rate of 25.4 ± 3 mm/min. (EIA-364-09)



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ENVIRONMENTAL

Resistance to Reflow Soldering Heat	See Product Qualification and Test Sequence Group 9 (Lead Free)	Pre Heat : 150°C~180°C, 60~90sec. Heat : 230°C Min., 40sec Min. Peak Temp.260°C Max,10sec Max. Duration : 2 cycles See Item 6.1
Thermal Shock	See Product Qualification and Test Sequence Group 4	Mate module and subject to follow condition for 10 cycles. 1 cycles: -40 +0/-3 °C, 30 minutes +105 +3/-0 °C, 30 minutes (EIA-364-32, test condition A)
Temperature life	See Product Qualification and Test Sequence Group 7	Subject mated connectors to temperature life at 105°C±3°C for 96 hours. Measure Signal. (EIA-364-17, Test condition A)
Salt Spray	See Product Qualification and Test Sequence Group 5	Subject mated/unmated connectors to 5% salt-solution concentration,35°C± 2°C for 48 hours. (EIA-364-26,Test condition B)
Solder ability	Solder able area shall have minimum of 95% solder coverage.	Subject the test area of contacts into the flux for 5-10 sec. And then into solder bath, Temperature at 245 ±5°C, for 4-5 sec. (EIA-364-52)
Cyclic Temperature and Humidity	See Product Qualification and Test Sequence Group 4	Mate module and subject to 5 cycle. Between 25°C +/- 3°C at 80% +/- 3% RH. and 65°C +/- 3°C at 50% +/- 3% RH. dwell time of 1 hour; ramp time of 0.5 hours. 24 cycles. (EIA-364-31, Test condition A)

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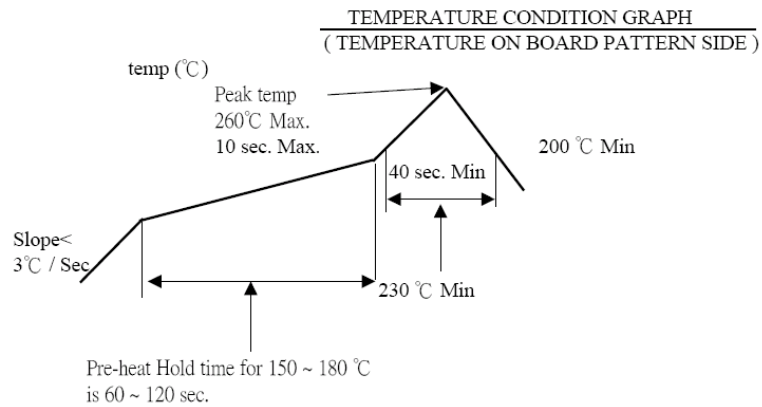
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6 INFRARED REFLOW CONDITION

6.1 Lead-free Process



Notes: Thickness of the cream solder shall be maintained 0.12mm Min.



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7 PRODUCT QUALIFICATION AND TEST SEQUENCE

Test or Examination	Test Group									
	1	2	3	4	5	6	7	8	9	
	Test Sequence									
Examination of Product				1,10	1,5		1,9	1,3	1,3	
Signal/Outer contact Resistance	1,5	1,3		2,7	2,4	1,7	2,8			
Insulation Resistance				3,8		2,5	3,6			
Dielectric Withstanding Voltage				4,9		3,6	4,7			
Temperature rise						4				
Mating / Unmating Forces	2,4									
Durability	3									
Vibration/Mechanical Shock		2								
Thermal Shock				5						
Temperature life							5			
Salt Spray					3					
Solder ability			1							
Resistance to Soldering Heat								2	2	
Cyclic Temperature and Humidity				6						
Sample Size	4	4	2	4	4	4	2	2	2	