

PRODUCT SPECIFICATION**PS-7528 Rev. BX2****Title: Micro Power Plus Product Specification****Part Number: G88MP Series / G881MP Series****Description: 3.0 mm Pitch, PCB Mount / Cable Crimping Type****Revisions Control**

Rev.	ECN Number	Originator	Approval	Issue Date
A	NE-15174	Debby Hung	Arron Lin	2015-12-16
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BX2		Karen Su	Roger Tsai	2022-06-23

FOR REFERENCE ONLY**Product Specification Origination**

Originator:	Date:	Checked By:	Date:	Approved By:	Date:

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PRODUCT SPECIFICATION**PS-7528 Rev. BX2****1.0 SCOPE**

This specification defines the detailed requirements for the Amphenol commercial Micro Power Plus Wafer connector board-mount and cable crimping type.

2.0 APPLICABLE DOCUMENTS

The following document, of the latest issue in effect at the time of performance of the qualification tests, shall form a part of this specification to the extent specified herewith.

Federal

QQ-B-626	Brass; bar, plate, rod, strip, flat wire and special shaped sections.
QQ-B-750	Bronze, phosphor; bar, plate, rod, sheet, strip, flat wire, and structural and special shaped sections.
QQ-N-290	Plating, Nickel (electrodeposited).

Military

EIA-364	Test methods for electrical connectors
MIL-G-45204	Gold plating (electrodeposited).

Underwriters' Laboratories, Inc.

UL-STD-94	Tests for flammability of plastic materials for parts in devices and appliances.
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3.0 REQUIREMENTS**3.1 Materials****3.1.1 Insulator**

- High temperature thermoplastic, UL94V-0 rated
- Color- Option

3.1.3 Pin Contacts

- High conductivity copper alloy.
- Selective Gold or 100 microinches minimum of tin over 50 microinches minimum of nickel plating

****This product doesn't contain environmental hazardous materials per per Directive 2011/65/EU for RoHS or per SS-00259 for Sony GP.**

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PRODUCT SPECIFICATION**PS-7528 Rev. BX2****3.2 Ratings**

3.2.1 Voltage: 250 Vrms maximum

3.2.2 Current and Applicable Wires

WIRE GAUGE	INSULATION DIAMETER
AWG#16	2.1 millimeters / .082 inches Max.
AWG#18	1.85~2.1 millimeters / .073~.082 inches
AWG#20 ~ #24	1.85 millimeters / .073 inches Max.
AWG#26 ~ #30	1.27 millimeters / .05 inches Max.

CURRENT DERATING REFERENCE INFORMATION

AWG	2PIN	3~4PIN	5~8PIN	9~10PIN	11~12PIN	13~18PIN	19~24PIN
#16	12.5A	12A	10.5A	10A	9A	8.5A	8A
#18	10.5A	10A	10A	8A	8A	7.5A	7A
#20	8.5A	8A	8A	7A	7A	6.5A	6A
#22	6A	4.5A	4.5A	4A	4A	3.5A	3.5A
#24	5.5A	4.5A	4.5A	3.5A	3.5A	3A	3A
#26	4.5A	4A	4A	3.5A	3.5A	2.5A	2.5A
#28	4A	3A	3A	3A	3A	2A	2A
#30	3.5A	3A	3A	2.5A	2.5A	1.5A	1A

**Testing conducted with tinned copper conductor stranded wire. Above charts are intended as a guideline. Current rating is application dependent. Appropriate de-rating is required depending on factors such as higher ambient temperature, smaller copper weight of PCB traces, gross heating from adjacent modules or components and other factors that influence connector performance.

- 1) Values are for REFERENCE ONLY.
- 2) Current deratings are based on not exceeding 30°C Temperature Rise
- 3) PCB trace design can greatly affect temperature rise results in Wire-to Board applications.
- 4) Data is for all circuits powered.

3.2.3 Operating temperature: -40°C ~ +125°C

3.3 Packaging and Shipping

Per Amphenol standard procedure # COP-15-1 and packing specification PKS-0001

PRODUCT SPECIFICATION**PS-7528 Rev. BX2****4.0 PERFORMANCE AND TEST DESCRIPTION**

The product is designed to meet the electrical, mechanical and environmental performance requirements specified in paragraph 5.0 . Unless otherwise specified, all tests are performed at ambient environmental conditions.

5.0 TEST REQUIREMENTS AND PROCEDURES SUMMARY

TEST ITEM		REQUIREMENT	PROCEDURE
1	Examination of Product	Meets requirements of product drawing. No physical damage.	Visual inspection
ELECTRICAL REQUIREMENT			
2	Low Level Contact Resistance	Initial - 10 milliohms maximum per mated pair Final - $\Delta R = 20$ milliohms maximum per mated pair	Per EIA-364-23 Subject mated contacts assembled in housing to closed circuit current of 100mA maximum at open circuit at 20 mV maximum.
3	Insulation Resistance	1,000 Megohms minimum	Per EIA-364-21 Unmate & unmount connectors: apply a voltage of 500 VDC between adjacent terminals and between terminals to ground.
4	Dielectric withstanding Voltage	No flashover, no sparkover, no excess leakage, no breakdown Current leakage < 5 mA	Per EIA-364-20 Unmate connectors: apply a voltage of two times the rated voltage plus 1000 volts VAC for 1 minute between adjacent terminals and between terminals to ground.
5	Capacitance	2 picofarads MAXIMUM	Measure between adjacent terminals at 1 MHz.
6	Temperature Rise (Via Current Cycling)	Temperature rise: +30°C MAXIMUM	Mate connector: measure the temperature rise at the rate current after: 1) 96 hours (steady state) 2) 240 hours (45 minutes ON and 15 minutes OFF per hour) 3) 96 hours (steady state)

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MECHANICAL REQUIREMENT		
TEST ITEM	REQUIREMENT	PROCEDURE
7	Insertion Force and Withdrawal Force	Per EIA-364-13 Subject connector to mate and unmate to measure the mechanical forces required to engage and disengage at a rate of 25+/-6 mm per minute Record by using autograph.
8	Terminal Retention Force in Housing for Cable assembly	24.5 N minimum.
9	Terminal Insertion Force in Housing for Cable assembly	14.7 N maximum.
10	Pin to Header Retention Force For PCB Mount	13.7 N minimum pushout force.
11	Wire Pullout Force (Axial) (Wire from Terminal)	minimum pullout force AWG#16 ~ #20 57.8 N AWG#22 35.6 N AWG#24 22.2 N AWG#26 13.3 N AWG#28 8.9 N AWG#30 6.6 N
12	Thumb Latch to Ramp Yield Strength	68.4 N minimum Yield Strength.
13	Durability	Per EIA-364-09 30 mating/ unmating cycles at a maximum rate of 10 cycles per minute.
14	Vibration (Random)	Per EIA-364-28 Condition VII Letter D. Test Duration: 15 minutes each axis.

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15	Shock (Mechanical)	1) No discontinuities of 1 μ s or longer duration. 2) Contact resistance: $\Delta R=20$ milliohms maximum 3) No physical damage.	mate connectors and shock at 50 g's with $\frac{1}{2}$ sine wave (11 milliseconds) shocks in each X, Y & Z axis (18 shocks total)
ENVIRONMENTAL REQUIREMENTS			
TEST ITEM		REQUIREMENT	PROCEDURE
16	Solderability	Continuous solder coating with a minimum 95% coverage.	Per EIA-364-52 Steam age 1hr. Solder time 5 \pm 0.5 seconds. Solder Temperature: 245 \pm 5°C Nonactivated flux.
17	Salt Spray	No evidence of damage. Contact resistance: $\Delta R=20$ milliohms maximum (Final)	Per EIA-364-26 test condition A Subject mated and unmated connectors should be tested according to the condition listed below: Temperature: 35 \pm 1.1°C Humidity: 95~98% (R.H.) PH value: 6.5~7.2 Duration: 48 hours
18	Resistance to Soldering Heat	No evidence of damage. Verify components meet their specified electrical performance criteria and no physical damage has occurred.	Per EIA-364-56 Dip connector terminal tails in solder: Solder Duration: 10 \pm 0.5 seconds; Solder temperature: 260 \pm 5°C
			(refer to FIGURE 1 IR reflow profile) IR reflow test condition: Peak temperature: 260+0 / -10 °C Preheating temperature: 150 – 200 °C, 60 to 120 sec.
			Apply solder iron in solder tail Temperature: 350 \pm 10°C, 3~4 sec.
19	Thermal Aging	No evidence of damage. Contact resistance: $\Delta R=20$ milliohms maximum (Final)	Mate connectors: expose to: 240 hours at 125 \pm 2°C
20	Humidity (Steady State)	1) $\Delta R=20$ milliohms maximum (Final) 2) Dielectric Withstanding Voltage: No Breakdown at 500 VAC 3) Insulation Resistance: 1000 Megohms Minimum.	Mate connectors: expose to a temperature of 40 \pm 2°C with a relative humidity of 90-95% for 96 hours. Note: Remove surface moisture and air dry for 1 hour prior to measurements.
21	Cold Resistance	$\Delta R=20$ milliohms maximum (Final)	Mate connectors: Duration: 96 hours, Temperature: -40 \pm 3°C

NOTE : Shall meet visual requirements, show no physical damage, and meet requirement of additional tests as specified in the test sequence in paragraph 6.0

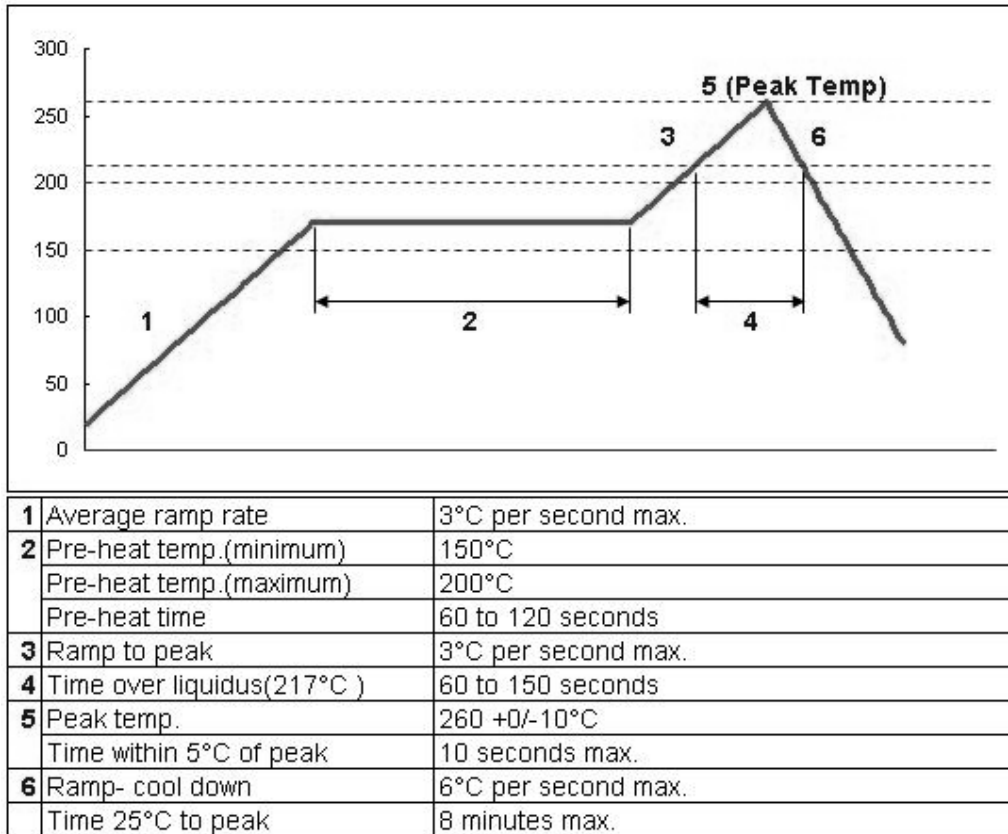


FIGURE 1

RESISTANCE TO REFLOW SOLDERING HEAT

6.0 PRODUCT QUALIFICATION AND REQUALIFICATION TEST Sequence

Test or Examination	Test Group											
	A	B	C	D	E	F	G	H	I	J	K	L
	Test Sequence (a)											
Examination of Product	1,9	1,11	1,7	1,5	1,6	1,3	1,5	1	1	1	1	1,5
Low Level Contact Resistance	2,8	2,6,10	2,4,6	2,4			2,4					2,4
Insulation Resistance		3,8										
Dielectric Withstanding Voltage		4,9										
Capacitance					2							
Temperature Rise (Via Current Cycling)				3								
Insertion Force	3,6				4							
Withdrawal Force	4,7				5							
Terminal Retention Force in Housing for Cable assembly									3			
Terminal Insertion Force in Housing for Cable assembly									2			
Pin to Header Retention Force For PCB Mount								3				
Wire Pullout Force (Axial) (Wire from Terminal)										2		
Thumb Latch to Ramp Yield Strength											2	
Durability	5											
Vibration (Random)			3									
Shock (Mechanical)			5									
Solderability						2						
Salt Spray							3					
Resistance to Soldering Heat					3			2				
Thermal Aging		5										
Humidity (Steady State)		7										
Cold Resistance												3
Sample Size per Test Group	5	5	5	5	5	5	5	5	5	5	5	5