

Performance Specification: Mini Power Connector Contact

REVIEW/REVISION DATE	REVISION CHANGE	REVIEWED/REVISED BY	APPROVED BY
3-25-08	Original Release	Eric Husted	Engineering Team
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10-25-12	Update 3.5 Electrical	D. Ashby	Engineering Team
2-12-20	Reformat/Style Change	Felecia Childress	Kim Kenyon

1. Scope

1.1 Content

This specification covers the performance, tests and quality requirements for the Mini Power Connector and connector system. This contact is a separable electrical connection device. Variations of this contact can be crimped to 8, 12, 14, 16, and 18 AWG wire or soldered to wires up to 8 AWG in size. All Mini Power contact types are to be used in connector modules.

1.2 Qualification Testing

When tests are performed on subject product line, the following procedures shall be used: All inspections shall be performed using applicable inspection plans and product drawings. Upon completion of qualification testing, this specification will be assigned a number and be classified, as a Product Qualification Report which will be identified in section 2.

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2. Applicable Documents

2.1 Content

The following documents form a part of this specification to the extent specified herein. Unless otherwise specified, the latest edition of the document applies. In the event of a conflict between requirements of this specification and product drawing, product drawing will take precedence. In the event of a conflict between requirements of this specification and referenced documents, this specification shall take precedence.

2.2 Documents

A. Standards

- EIA 364-06
- EIA 364-09
- EIA 364-13
- EIA 364-20
- EIA 364-70
- MIL-STD-1344
- MIL-STD-202

B. Product Drawings

Housing

- 510104123
- 510104246
- 510108115
- 510108132

Contacts

610116112	610116124
610116125	610116127
610115124	610115125
610115127	610115128
610115129	610115130
610115131	610115132

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3. Requirements

3.1 Design & Construction

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

3.2 Materials

A. Female Contact

Brass
Gold over nickel plating per MIL-DTL-45204D

B. Male Contact

Beryllium Copper
Gold over nickel plating

C. Housing

G10 Epoxy Glass or Black PPS

3.3 Ratings

A. Voltage

AC up to 100 MHz
DC

B. Current

16 AWG:	25 ampere maximum
14 AWG:	30 ampere maximum
12 AWG:	40 ampere maximum
8 AWG:	65 ampere maximum

C. Temperature

-50°C to +105°C

3.4 Performance & Test Description

Product is designed to meet electrical, mechanical, and environmental requirements specified in Figure 3.5. Unless otherwise specified, all tests should be performed at ambient environmental conditions.

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3.5 Test Requirements & Procedures Summary

TABLE 3.5	TEST DESCRIPTION	REQUIREMENT	PROCEDURE
PREMINARY	Examination of Product	Meets requirements of product drawing	Visual, dimensional, and functional examination per applicable quality inspection plan
ELECTRICAL	Termination Resistance	1mΩ maximum Initial & Final	EIA 364-06: Subject mated contacts in housing to 100mA and/or Maximum current per wire gage
	Current Rating	30° C maximum temperature rise	EIA 362-70: 100% of pin positions populated and subjected to 65A current with 8 AWG wire
	Dielectric Withstanding Voltage	1500 VDC minimum	EIA 364-20: Test between adjacent contacts in housing, 60 sec. min., <20mA
	Capacitance	< 3 pF	Capacitance measured between adjacent contacts in a module
MECHANICAL	Durability	See test sequence: Figure 2	EIA-364-9: Mate and unmate sample for 20000 cycles
	Mating Force	Max 3.9 lbs force per contact	EIA-364-13: Measure force necessary to mate samples at a normal rate of engagement of the ITA
	Unmating Force	Max 5.0 lbs force per contact	EIA-364-13: Measure force necessary to unmate samples at a normal rate of disengagement of the ITA

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3.6 Product Qualification & Requalification Test Sequence

	TEST OR EXAMINATION	TEST GROUP		
		I	II	III
TABLE 3.6	Examination of Product	1,9	1,7	1,4
	Termination Resistance	2,8	2	
	Current Rating		3	
	Dielectric Breakdown		4	
	Capacitance		5	
	Frequency Range		6	
	Durability	5		
	Mating Force	3,7		2
	Un-mating Force	4,6		3

*Test Sequence: Numbers indicate the sequence in which the tests are preformed. For test group sample selection see 4.1 A.

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4. Quality Assurance Provisions

4.1 Qualification Testing

A. Sample Selection

Samples shall be prepared in accordance with applicable instruction sheets and shall be selected at random from current production. All test groups shall each consist of a minimum of 5 connectors containing at least 30 contacts total each and equal posts to mate with receptacles. Test group 1 shall have both minimum and maximum position size connectors.

B. Test Sequence

Qualification inspection shall be verified by testing samples as specified in Figure 3.6.

4.2 Requalification Testing

If changes significantly affecting form, fit or function are made to product or manufacturing process, product assurance shall coordinate re-qualification testing, consisting of all or part of original testing sequence as determined by development/product, quality and reliability engineering.

4.3 Acceptance

Acceptance is based on verification that product meets requirements of Figure 1. Failures attributed to equipment, test set-up or operator deficiencies shall not disqualify product. When product failure occurs, corrective action shall be taken and samples resubmitted for qualification. Testing to confirm corrective action is required before re-submittal.

4.4 Quality Conformance Inspection

A Certificate of Conformance (C of C) dimensional inspection must be completed for all samples prior to Qualification testing. The applicable quality inspection plan will specify sampling acceptable quality level to be used. Dimensional and functional requirements shall be in accordance with applicable product drawing and this specification.