
CCJ Power cable product spec

1. SCOPE**1.1. CONTENTS**

This specification covers the performance, tests and quality requirements for the CCJ Power cable assembly 2820303-2.

1.2. QUALIFICATION

When tests are performed on the subject product line, the procedures specified in TE 109 series specification shall be used. All inspections shall be performed using the applicable inspection plan and product drawing.

2. APPLICABLE DOCUMENT

The following TE 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 conflict between the requirements of this specification and the product drawing, the product drawing shall take precedence. In the event of conflict between the requirements of this specification and the referenced documents, this specification shall take precedence.

2.1. TE SPECIFICATIONS

A.109-5000: Test Specification, General Requirement for Test Methods

B.109-197: TE Test Specification cross reference EIA and IEC Test Methods.

2.2. COMMERCIAL STANDARD

A. MIL-STD-202

B. EIA-364.

3. REQUIREMENTS**3.1. DESIGN AND CONSTRUCTION**

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

3.2. MATERIALS

Materials used in the construction of this product shall be as specified on the applicable product drawing.

3.3. RATINGS

A. Voltage: 15V DC.

Current: 120A.

B. Temperature: -25°C to +125°C.

3.4. PERFORMANCE REQUIREMENT AND TEST DESCRIPTION

The product is designed to meet the electrical, mechanical and environmental performance requirement specified in Figure 1.

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3.5 TEST REQUIREMENTS AND PROCEDURES SUMMARY

PARA	TEST ITEMS	REQUIREMENTS	PROCEDURES
3.5.1	Examination of Product	Meet requirements of product drawing.	EIA-364-18. Visual and dimensional (C of C) inspection per product drawing.
ELECTRICAL REQUIREMENTS			
3.5.2	Contact resistance	0.5mΩ maximum.	EIA-364-6 Resistance should be measured after the clip has reached thermal equilibrium, after carrying Rated load at 25°C ambient temperature.
3.5.3	Insulation resistance.	1000 megohms minimum for power contacts (LP included).	EIA-364-21. 500 volts DC, 2 minute hold. Test between adjacent contacts of mated specimens.
3.5.4	Withstanding voltage.	One minute hold with no breakdown or flashover.	EIA-364-20, Condition I. 2500 volts DC for power contacts. Test between adjacent contacts of mated specimens.
3.5.5	Temperature rise vs current.	30°C maximum temperature rise at 120A current.	EIA-364-70, Method II. Stabilize at a single current level until 3 readings at 5 minute intervals are within 1°C. Test Sample per cable assembly drawing 2820303-2.

Figure 1 (CONT.)

MECHANICAL REQUIREMENTS			
3.5.6	Vibration, random	No discontinuities of 1 microsecond or longer duration. No plastic deformation and no contact dislodging. See Note.	Customer requirement: 0.5g, 1.5mm amplitude, 5-500 Hz, 10 sweeps @ 1 octave/minute in all orthogonal axes..
3.5.7	Mechanical shock	No discontinuities of 1 microsecond or longer duration. No plastic deformation and no contact dislodging. See Note.	EIA-364-27, Method A. Subject mated specimens to 50 G's half-sine shock pulses of 11 milliseconds duration. Three shocks in each direction applied along 3 mutually perpendicular planes, 18 total shocks.
3.5.8	Durability.	See Note.	EIA-364-9. Mate and unmate specimens for 50 cycles at a maximum rate of 500 cycles per hour.
3.5.9	Mating force.	50N maximum.	EIA-364-13. Measure force necessary to mate specimens at a maximum rate of 12.7 mm [.5 in] per minute
3.5.10	Un-mating	2.5 N minimum.	EIA-364-13. Measure force necessary to mate specimens at a maximum rate of 12.7 mm [.5 in] per minute
3.5.11	Crimp tensile.	90 pounds minimum for CCJ contact. 80 pounds minimum for MBXLE Power contact. See Note.	EIA-364-8. Determine crimp tensile at a rate of 12.7mm per minute.
3.5.12	Contact retention, straight pull.	30 pounds minimum.	EIA-364-29. Apply axial load to wire, as crimped to contacts. To last 6±1 sec.
3.5.13	Contact retention, angled pull.	30 pounds minimum.	EIA-364-29. Apply load to single wires at a 45 degree angle in 4 directions from normal exit plane of cable. To last 6±1 sec.

ELECTRICAL REQUIREMENTS			
3.5.14	Salt Spray Test	See note. And the contact resistance variation less than 0.03 mΩ.	Customer spec "V2_ClipCable_RFP_21". Test lasting 48 hours, with a 5% solution salt spray, at 35 +1/-2°C.
3.5.15	Thermal shock.	See Note.	EIA-364-32. Subject mated specimens to 36 cycles between -40 and 125°C.
3.5.16	Temperature life.	See Note.	EIA-364-17, Method A, Test Condition 5. Subject mated specimens to 125°C for 504 hours.
3.5.17	Humidity-temperature cycling.	See Note.	EIA-364-31, Method III. Subject mated specimens to 10 cycles (10 days) between 25 and 40°C at 80 to 100% RH.

Figure 1 (CONT.)

NOTE: Shall meet visual requirements, show no physical damage (no plastic deformation and no contacts dislodging), and meet requirements of additional tests as specified in the Product Qualification and Requalification Test Sequence shown in Figure 4.

3.6 PRODUCT QUALIFICATION AND REQUALIFICATION TEST

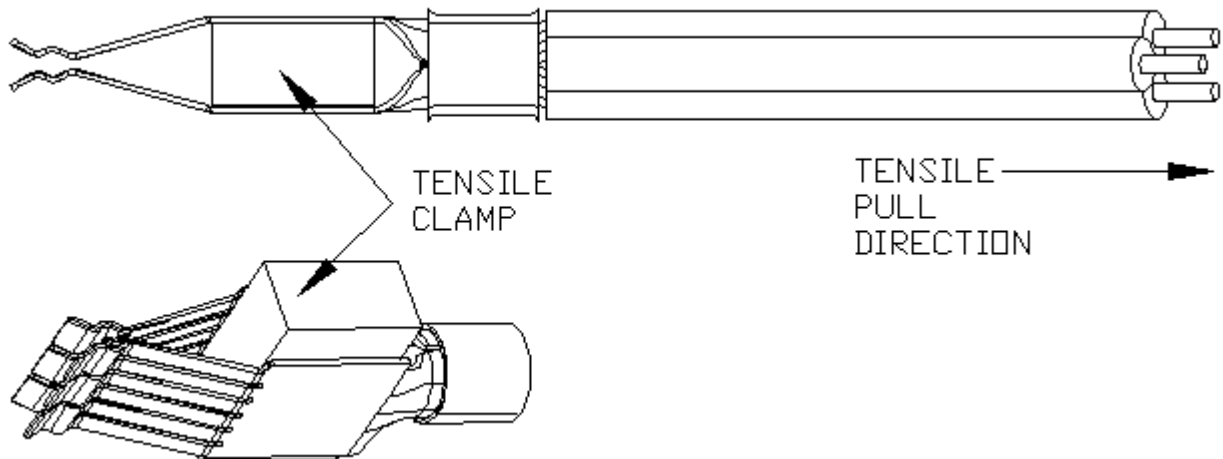
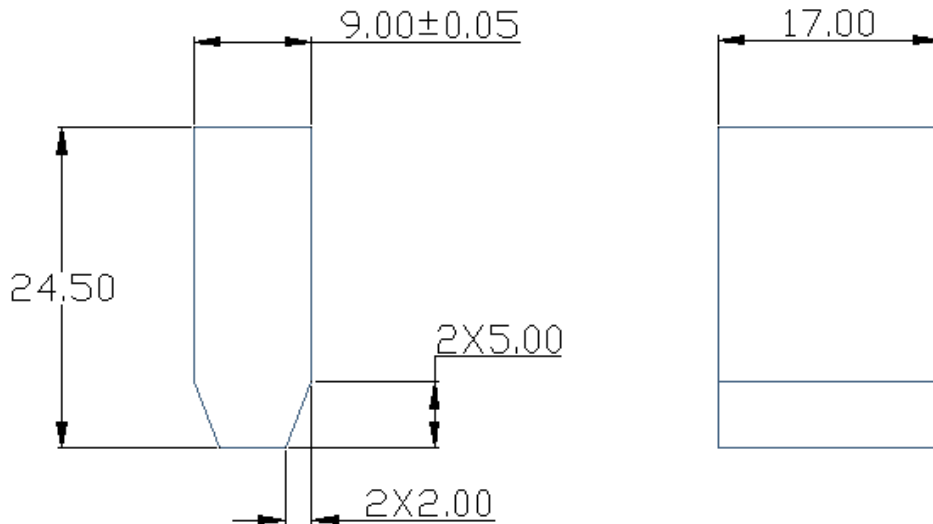
Test Item	Test Group									
	1	2	3	4	5	6	7	8	9	10
	Test Sequence(a)									
Examination of Product	1,5	1,5	1,9	1,5	1,4	1,3	1,8	1,8	1,4	1,3
Contact resistance	2,4	2,4	3,8	2,4			3,6			
Temperature rise vs current.				3						
Crimp tensile.						2				2
Mating force			2				2			
un-mating force			7				7			
Durability			4(b)				4			
Contact retention, straight pull.					2				2	
Contact retention, angled pull.					3				3	
Vibration, random.			5				5			
Mechanical shock.			6							
Salt Spray Test	3									
Insulation resistance.								2,6		
Withstanding voltage.								3,7		
Thermal shock.								4		
Temperature life.		3								
Humidity-temperature cycling.								5		
Sample Size per Test Group	5	5	5	5	5	5	5	5	5	5
									MBXLE side	MBXLE side

Note: (a) Numbers indicate sequence in which tests are performed.
 (b) Measure contact resistance after every 10 cycles up to 50.

Figure 2

4. QUALITY ASSURANCE PROVISIONS.

4.1 CCJ CONTACT CLAMP.



CCJ Contact Tensile Test Clamp

Figure 3

4.2 MBXLE CONTACT CLAMP.

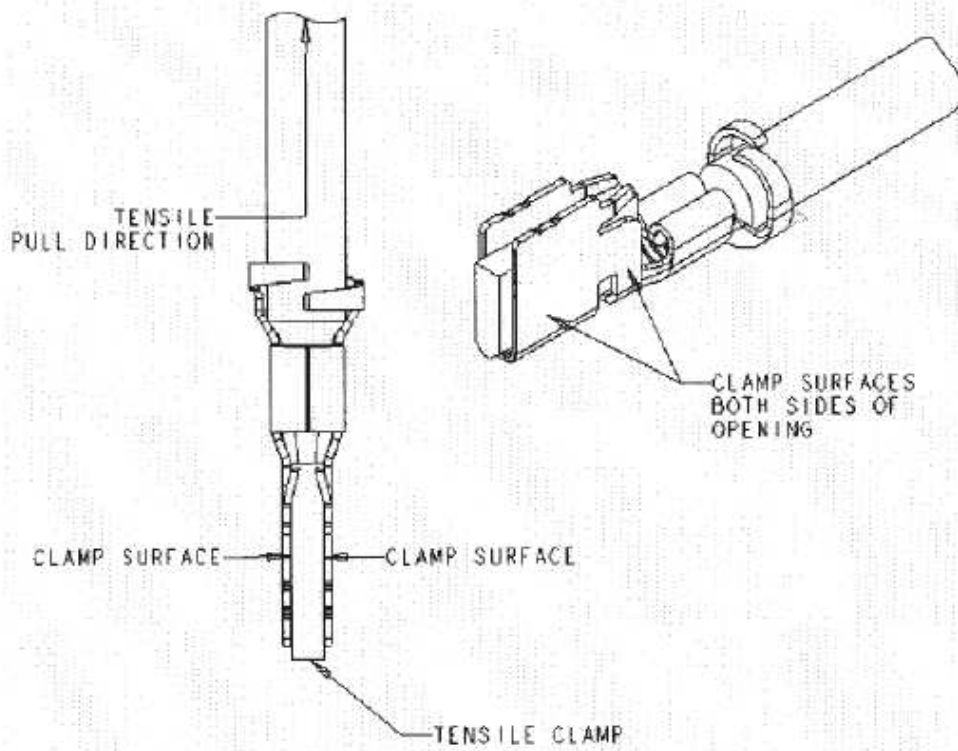
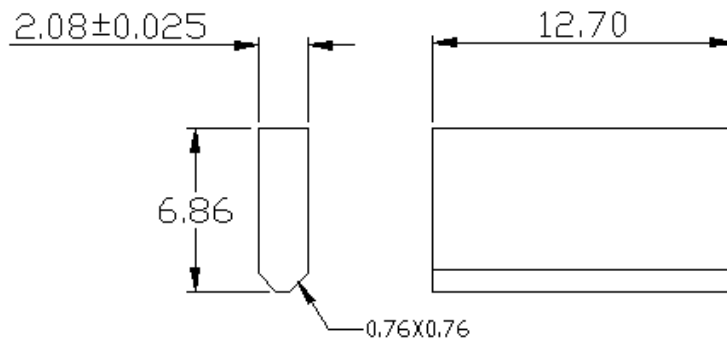


Figure 4

MBXLE Contact Tensile Test Clamp