

MIL-C-55302B  
 AMENDMENT 3  
 10 March 1978  
 SUPERSEDING  
 AMENDMENT 2  
 16 August 1974

## MILITARY SPECIFICATION

## CONNECTORS, PRINTED CIRCUIT SUBASSEMBLY AND ACCESSORIES

This amendment forms a part of Military Specification MIL-C-55302B, dated 6 March 1973, and is approved for use by all Departments and Agencies of the Department of Defense.

PAGE 1

2.1, SPECIFICATIONS - FEDERAL, add "QQ-C-533 Copper-Beryllium Alloy Strip."

PAGE 2

3.3.3.1, lines 2 and 4, following "QQ-C-530" add "or QQ-C-533."

PAGE 3

3.3.3.4.3, delete "over-nickel plating per QQ-N-290, class 2, 30 to 150 microinches."

Following 3.3.3.4.3, add the following new paragraph:

"3.3.3.4.4 Nickel underplating. If used, nickel underplating shall be per QQ-N-290, class 2, 30 to 150 microinches."

Add new paragraph:

"3.3.6 Fungus resistance. Finishes and materials must be certified that they meet the requirements of MIL-STD-454, Requirement 4; all other materials or finishes must be tested in accordance with method 508 of MIL-STD-810."

PAGE 4

3.4.7, line 3, following "receptacle shall be of" add "molded or bonded".

PAGE 5

3.14, line 2, delete "50,000 megohms" and substitute "5,000 megohms".

3.21, line 1, delete "(steady state)."

PAGE 6

\*Following 4.1.1, add:

"4.1.2 Assembly plants. Assembly plants must be listed on or approved for listing on the applicable Qualified Products List. The qualified connector manufacturer shall certify that the assembly plant is approved for the distribution of the manufacturer's parts. The assembly plant shall use only piece parts supplied by the qualified connector manufacturer. No testing other than visual inspection is required of certified piece parts obtained from the qualified connector manufacturer, except when there is cause for rejection. All assemblies produced at the assembly plant shall be subjected to inspection of product to assure that the assembly process conforms with that established at the qualified manufacturing plant. Quality control requirements, including Government inspection surveillance, shall be the same as required for the qualified connector manufacturer."

FSC 5935

## 4.5.4, delete and substitute:

"4.5.4 Retention of qualification. To retain qualification, the contractor shall forward to the qualifying activity at 12-month intervals a summary of groups A and B. At 36-month intervals a group C report shall be submitted. The qualifying activity shall establish the initial reporting date. The report shall consist of:

- (a) A summary of the results of the tests performed for inspection of product for delivery, groups A and B, indicating as a minimum the number of lots that have passed and the number that have failed. The results of tests of all reworked lots shall be identified and accounted for.
- (b) The results of tests performed for periodic inspection, group C, including the number and mode of failures. The test report shall include results of all periodic inspection tests performed and completed during the 36-month period. If the test results indicate nonconformance with specification requirements, and corrective action acceptable to the qualifying activity has not been taken, action may be taken to remove the failing product from the qualified products list. When group C report is submitted the group A and B summary is not required.

Failure to submit the report within 60 days after the end of each 36-month period may result in loss of qualification for the product. In addition to the periodic submission of inspection data, the contractor shall immediately notify the qualifying activity at any time during the 36-month period that the inspection data indicates failure of the qualified product to meet the requirements of this specification (see 4.6.2.2).

In the event that no production occurred during the reporting period, a report shall be submitted certifying that the company still has the capabilities and facilities necessary to produce the item. If during two consecutive reporting periods there has been no production, the manufacturer may be required, at the discretion of the qualifying activity, to submit a representative product of each part number to testing in accordance with the qualification inspection requirements."

TABLE II, subgroup 1, change "Mating and unmating" to sequentially follow "Insulation resistance."

TABLE II, subgroup 2, "Mating and unmating": Add subscript "1/" after unmating.

TABLE II, subgroup 3, "Humidity (steady state)", delete "(steady state)."

PAGES 8 and 9

4.6 Quality conformance inspection, delete and substitute:"4.6 Quality conformance inspection.

"4.6.1 Inspection of product for delivery. Inspection of product for delivery shall consist of groups A and B inspection.

"4.6.1.1 Inspection lot. An inspection lot shall consist of all the connectors of the same part number, produced under essentially the same conditions, and offered for inspection at one time.

"4.6.1.2 Group A inspection. Group A inspection shall consist of the inspections specified in table III, in the order shown.

"4.6.1.2.1 Sampling plan. Statistical sampling and inspection shall be in accordance with MIL-STD-105 for general inspection level II. The acceptable quality level (AQL) shall be as specified in table III. Major and minor defects shall be as defined in MIL-STD-105.

"4.6.1.2.2 Rejected lots. If an inspection lot is rejected, the contractor may rework it to correct the defects, or screen out the defective units, and resubmit for reinspection. Resubmitted lots shall be inspected using tightened inspection. Such lots shall be separate from new lots, and shall be clearly identified as reinspected lots.

TABLE III. Group A inspection.

Inspection	Requirement paragraph	Test method	AQL (percent defective)	
			Major	Minor
Visual and mechanical inspection -	3.4 to 3.4.10 incl, and 3.22 to 3.23.1, incl.	4.7.1	1.0	4.0
Mating and unmating - - - - -	3.8	4.7.4	.65	---
Interchangeability - - - - -	3.5	4.7.1.1	.65	---

"4.6.1.3 Group B inspection. Group B inspection shall consist of the inspections specified in table IV, in the order shown. Group B inspection shall be made on sample units selected from inspection lots which have passed the group A inspection.

TABLE IV. Group B inspection.

Inspection	Requirement paragraph	Test method paragraph
Contact resistance - - - - -	3.10	4.7.5
Insulation resistance - - - - -	3.14	4.7.8

"4.6.1.3.1 Sampling plan. Four sample pairs containing the largest number of contact positions with a full complement of contacts (not including the variation in terminal types) available at time of inspection should be selected at random from items produced every 6 months.

"4.6.1.3.2 Failures. If one or more sample units fail to pass group B inspection, the sample shall be considered to have failed.

"4.6.1.3.3 Rejected lots. If an inspection lot is rejected, the contractor may rework it to correct the defects, or screen out the defective units, and resubmit for reinspection. Resubmitted lots shall be inspected using tightneed inspection. Such lots shall be separate from new lots, and shall be clearly identified as reinspected.

"4.6.1.3.4 Disposition of sample units. Sample units which have passed all the group B inspection may be delivered on a contract or purchase order if the lot is accepted.

"4.6.2 Periodic inspection. Periodic inspection shall consist of group C inspection. Except where the results of these inspections show noncompliance with the applicable requirements (see 4.6.2.1.4) delivery of products which have passed groups A and B shall not be delayed pending the results of these periodic inspections.

"4.6.2.1 Group C inspection. Group C inspection shall consist of the inspections specified in table V, in the order shown. Group C inspection shall be made on sample units which have passed the groups A and B inspections.

"4.6.2.1.1 Sampling plan. Four sample-connector pairs of each part number (not including variations in terminal types) shall be selected at random from items produced every 36-months. The sample units shall be divided into two equal-sample groups. One sample group shall be subjected to subgroup 1 inspections and the other sample group to the subgroup 2 inspections of table V.

"4.6.2.1.2 Failures. If one or more sample units fail to pass group C inspection, the sample shall be considered to have failed.

"4.6.2.1.2 Disposition of sample units. Sample units which have been subjected to group C inspection shall not be delivered on the contract.

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TABLE V. Group C inspection.

Inspection	Requirement paragraph	Method paragraph
<u>Subgroup 1</u>		
Oversized pin exclusion- - - - -	3.6	4.7.2
Contact engagement and separation forces - - - - -	3.7	4.7.3
Contact retention- - - - -	3.11	4.7.6
Dielectric withstanding voltage (high altitude)- - - - -	3.13	4.7.7.2
Contact life- - - - -	3.15	4.7.9
Mating and unmating 1/- - - - -	3.8	4.7.4
Vibration- - - - -	3.16	4.7.10
Salt spray - - - - -	3.17	4.7.11
Low level circuit- - - - -	3.18	4.7.12
Contact resistance - - - - -	3.10	4.7.5
Visual and mechanical- - - - -	3.4.6, 3.22, and 3.23	4.7.1
Interchangeability - - - - -	3.5	4.7.1.1
<u>Subgroup 2</u>		
Dielectric withstanding voltage (sea level) - - - - -	3.13	4.7.7.1
Thermal shock- - - - -	3.19	4.7.13
Shock (specified pulse)- - - - -	3.20	4.7.14
Contact resistance- - - - -	3.10	4.7.5
Humidity- - - - -	3.21	4.7.15
Insulation resistance- - - - -	3.14	4.7.8
Mating and unmating 1/ - - - - -	3.8	4.7.4
Visual and mechanical- - - - -	3.4.6, 3.22, and 3.23	4.7.1
Interchangeability- - - - -	3.5	4.7.1.1

1/ Cycling of connector three times in not required.

- \* "4.6.2.1.4 Noncompliance. If a sample fails to pass group C inspection, the manufacturer shall notify the qualifying activity and the cognizant inspection activity of such failure and take corrective action on the materials or processes, or both, as warranted, and on all units of product which can be corrected and which were manufactured under essentially the same conditions, with essentially the same materials and processes, and which are considered subject to the same failure. Acceptance and shipment of the product shall be discontinued until corrective action, acceptable to the qualifying activity has been taken. After the corrective action has been taken, group C inspection shall be repeated on additional sample units (all inspection, or the inspection which the original sample failed, at the option of the qualifying activity). Groups A and B inspection may be reinstated; however, final acceptance and shipment shall be withheld until the group C inspection has shown that the corrective action was successful. In the event of failure after reinspection, information concerning the failure shall be furnished to the cognizant inspection activity and the qualifying activity."

PAGE 11

FIGURE 2. Thickness test gages. Delete specimen B and substitute new specimen as printed on page 6 of this amendment.

PAGE 13

4.7.8(c), delete and substitute:

"(c) Point or measurement - Check between pins and hardware, between pin and pin, and between pins and shell (on shell-constructed connectors)."

4.7.10(c): Delete "Test condition - B" and substitute "Test condition - III."

PAGE 15

4.7.14(b): Delete "Test condition - 1" and substitute "Test condition - I."

4.7.15, line 1, delete "(steady state)."

4.7.16.2: Delete "3.18" and substitute "3.19".

NOTE: The margins of this amendment are marked with an asterisk to indicate where changes from the previous amendment were made. This was done as a convenience only and the Government assumes no liability whatsoever for any inaccuracies in these notations. Bidders and contractors are cautioned to evaluate the requirements of this document based on the entire content irrespective of the marginal notations and relationship to the last previous amendment.

Custodians:

Army - EL  
Navy - EC  
Air Force - 17

Preparing activity  
Army - EL

Agent:

DLA - ES

Review activities:

Army - EL, AR, MI  
Navy - AS, OS  
Air Force - 11, 17, 99, 85  
DLA - ES

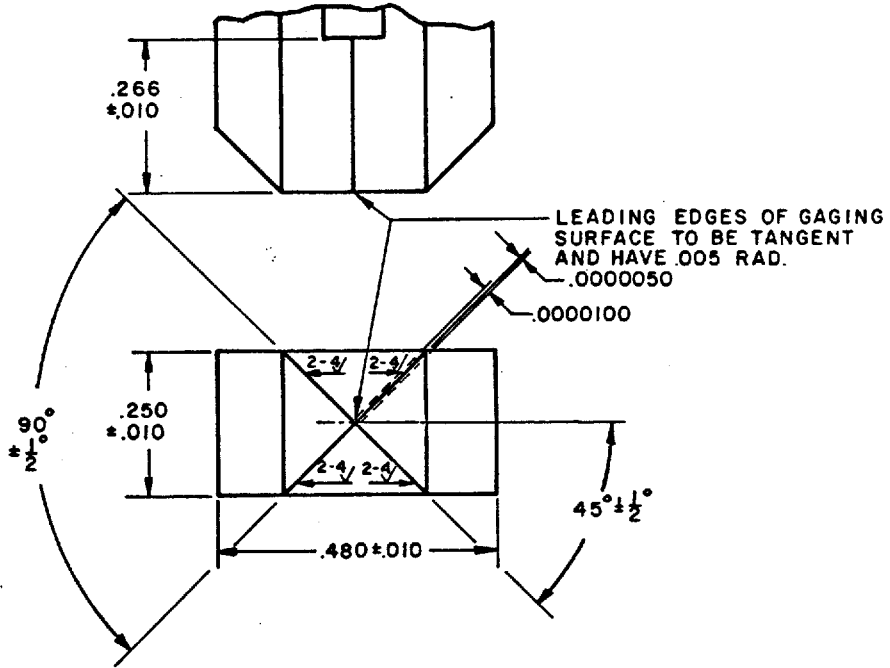
(Project 5935-3056)

User activities:

Army - ME, AT, AV  
Navy - MC, SH  
Air Force - 19

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Specimen B



MATERIAL: MEDIUM ALLOY STEEL BONDED TITANIUM  
 CARBIDE, ROCKWELL "C" 67-69

INCHES	MM
.0000050	.000131
.0000100	.000251
.005	.13
.010	.25
.250	6.35
.266	6.76
.480	12.19

FIGURE 2. Test gages.

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