

INCH-POUND

MIL-R-27208D
 AMENDMENT 4
5 December 1997
 SUPERSEDING
 AMENDMENT 3
 14 March 1997

MILITARY SPECIFICATION

RESISTOR, VARIABLE, WIRE-WOUND, NONPRECISION, GENERAL SPECIFICATION FOR

This amendment forms a part of MIL-R-27208 dated, 24 August 1992, and is approved for use by all Departments and Agencies of the Department of Defense.

PAGE 3

Section 2, delete and substitute:

"2. APPLICABLE DOCUMENTS

"2.1 General. The documents listed in this section are specified in sections 3 and 4 of this specification. The section does not include documents cited in other sections of this specification or recommended for additional information or as samples. While every effort has been made to ensure the completeness of this list, document users are cautioned that they must meet all specified requirements documents cited in sections 3 and 4 of this specification, whether or not they are listed.

"2.2 Government documents

"2.2.1 Specifications, standards and handbooks The following specifications, standards and handbooks form a part of this document to the extent specified herein. Unless otherwise specified, the issues of these documents are those listed in the issue of the Department of Defense Index of Specifications and Standards (DoDISS) and supplement thereto, cited in the solicitation (see 6.2).

"SPECIFICATIONS

"DEPARTMENT OF DEFENSE

- * "MIL-PRF-39015 - Resistors, Variable, Wire-Wound (Lead Screw Actuated), Nonestablished Reliability, and Established Reliability, General Specification for.

"STANDARDS

"DEPARTMENT OF DEFENSE

- * "MIL-STD-202 - Test Methods Standard Electronics and Electrical Component Parts.
 MIL-STD-810 - Environmental Test Methods and Engineering Guidelines.
 MIL-STD-1276 - Leads for Electronic Component Parts.

- * "(Unless otherwise indicated, copies of federal and performance specifications, standards, and handbooks are available from the Defense Automated Printing Service, Bldg. 4D, (DPM-DODSSP), 700 Robbins Avenue, Philadelphia, PA 19111-5094.)

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"2.3 Non-Government publications The following documents form a part of this document to the extent specified herein. Unless otherwise specified, the issues of the documents which are DoD adopted are those listed in the DoDISS cited in the solicitation. Unless otherwise specified, the issues of documents not listed in the DoDISS are the issues of the documents cited in the solicitation (see 6.2).

"AMERICAN NATIONAL STANDARD (ANS)

"J-STD-006 - Requirements for Electronic Grade Solder Alloys and Fluxed and Non-Fluxed Solid Solders for Electronic Soldering Applications.

"(DoD activity may obtain copies of American National Standard J-STD-006 from the Standardization Document Order Desk. Private sector and other Government Agencies may purchase copies from the Institute for Interconnecting and Packaging Electronic Circuits (IPC), 7380 N. Lincoln, Lincolnwood, IL 60646).

"AMERICAN NATIONAL STANDARDS INSTITUTE (ANSI)

"ANSI/NCSL Z540-1 - Calibration Laboratory and Measuring and Test Equipment, General Requirements for.

"INTERNATIONAL ORGANIZATION for STANDARDS (ISO)

"ISO 10012-1 - Quality Assurance Requirements for Measuring Equipment, Part 1: Meteorological Confirmation System for Measuring Equipment.

"(Application for copies should be addressed to the American National Standards Institute, 11 West 42nd Street, New York, NY 10036-8002.)

"(Non-Government standards and other publications are normally available from the organizations that prepare or distribute the documents. These documents also may be available in or through libraries or other informational services.)

* "2.4 Order of precedence. In event of a conflict between the text of this document and the references cited herein (except for related associated specifications, specification sheets, or MS sheets), the text of this document takes precedence. Nothing in this document, however, supersedes applicable laws and regulations unless a specific exemption has been obtained."

* 3.4, delete and substitute:

"3.4 Interface and physical dimension requirements The resistors shall meet the interface and physical dimensions specified (see 3.1)."

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* 3.4.3, delete last sentence and substitute "Terminals shall be suitably coated to meet the solderability requirements of 3.26 (see 6.11)."

PAGE 7

3.10, last line, delete "In semiannual, subgroup 1, of table X. Shall not exceed 200 ohms."

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3.30.2.1, delete "Sn60 of QQ-S-571" and substitute "Type A of J-STD-006".

4.1.2, delete and substitute:

"4.1.2 Test equipment and inspection facilities The supplier shall establish and maintain a calibration system in accordance with ANSI/NCSL Z540-1, ISO-10012-1, or equivalent system as approved by the qualifying activity."

PAGE 11

4.4.4, delete and substitute:

"4.4.4 Retention of qualification In order to retain qualification, the supplier shall forward via the Government inspector at 6-month intervals, to the qualifying activity responsible for qualification, a summary of the results of groups A and B tests, indicating as a minimum the number of lots which have passed and the number of lots that have failed. The summary shall include those tests performed during the 6-month period. Failure to submit the summary will result in loss of qualification for that product. The supplier shall immediately notify the qualifying activity at any time during the 6-month period that the inspection data indicates failure of the qualified product to meet the requirements of the specification. In the event no product has been submitted under the specification during the 6-month period, a statement indicating this condition shall be forwarded to the qualifying activity in the manner indicated above. For alternate requirements, see 4.5.3."

PAGE 12

TABLE V, title, delete "1/"

TABLE V, delete "1/ See table X. "

PAGE 13

4.5.1, last sentence, delete in its entirety.

PAGE 14

4.5.1.2.1.3.2b, delete and substitute:

- "b. The manufacturer submits the failed lot to a 100 percent solder dip using an approved solder dip process in accordance with 3.4.3.2. Following the solder dip, the electrical measurements required in group A, subgroup 1, tests shall be repeated on 100-percent of the lot. The PDA for the electrical measurements shall be as for the subgroup 1 tests. An additional sample shall then be selected in accordance with table VII and subjected to the solderability test with zero defects allowed. If the lot fails this solderability test, the lot may be reworked a second time and retested. If the lot fails the second rework, the lot shall be considered rejected and shall not be furnished against the requirements of this specification."

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4.5.2 through 4.5.2.1.3 inclusive, delete in their entirety.

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PAGE 16

TABLE X, delete in its entirety.

4.5.2.1.4, delete in its entirety.

4.5.4, delete in its entirety .

PAGE 17

4.6.5, delete and substitute :

"4.6.5 Peak noise (see 3.10). Peak noise resistance shall be measured with the measuring circuit shown on figure 3, or its equivalent. The operating shaft shall be rotated in both directions through 90 percent of the actual effective electrical travel for a maximum of 6 cycles. If the product passes on any one of the first three cycles, the product is acceptable. Only the last three cycles shall be counted in determining whether or not a noise is observed at least twice in the same location. Acceptance may be determined based on one cycle minimum where compliance to the specification is demonstrated. The rate of rotation of the operating shaft shall be such that the wiper completes 1 cycle in 5 seconds, minimum, to 2 minutes, maximum. The equivalent resistance shall be calculated using the following formula:"

PAGE 23

4.6.17.2, delete and substitute:

"4.6.17.2 Procedure. Total resistance shall be measured as specified in 4.6.2.1. The resistors shall be placed in a chamber at room temperature. The temperature shall be gradually decreased to -55°C +0°C, -5°C within a period of not less than one and one-half hours. For quality conformance inspection only, and at the option of the manufacturer, the resistors may be placed in the chamber when the chamber is already at the extreme low temperature. After one hour of stabilization at this temperature, setting stability shall be measured as specified in 4.6.9.1. Full rated continuous working voltage (see 3.1 and 3.6) shall be applied for 45 minutes. The resistors may be loaded individually or in parallel. Fifteen +5, -0 minutes after removal of voltage, setting stability shall be measured as specified in 4.6.9.1. The temperature in chamber shall be gradually increased to room temperature within a period of not more than 8 hours. The resistors shall be removed from the chamber and maintained at a temperature of 25°C ±5°C for a period of approximately 24 hours. Total resistance shall be measured as specified in 4.6.2.1. Resistors shall then be examined for evidence of mechanical damage."

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Section 5, delete and substitute :

"5. PACKAGING

- * "5.1 Packaging. For acquisition purposes, packaging requirements shall be as specified in the contract or order (see 6.2). When actual packaging of materiel is to be performed by DoD personnel, these personnel need to contact the responsible packaging activity to ascertain requisite packaging requirements. Packaging requirements are maintained by the Inventory Control Point's packaging activity within the Military Department, the Military Department's System Command, or the Defense Agency. Packaging data retrieval is available from the managing Military Department's or Defense Agency's automated packaging files, CD-ROM products, or responsible packaging activity."

PAGE 25

6.3, last sentence, delete and substitute:

"Information pertaining to qualification of products may be obtained from Defense Supply Center, Columbus (DSCC-VQP), 3990 East Broad Street, Columbus, OH 43216-5000."

The margins of this amendment are marked with asterisks to indicate where changes from the previous issue 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 issue.

Custodians:
Army - CR
Navy - EC
Air Force - 85

Preparing activity:
DLA - CC

(Project 5905-1516)

Review activities:
Army - AR, AT, AV, CR4, MI
Navy - AS, MC, OS
Air Force - 17, 19, 99