INCH-POUND
MIL-PRF-39005/11C
w/ Amendment 3
14 November 2014
SUPERSEDING
MIL-PRF-39005/11C
w/ Amendment 2
13 November 2009

PERFORMANCE SPECIFICATION SHEET

RESISTOR, FIXED, WIRE WOUND (ACCURATE), NONESTABLISHED RELIABILITY AND ESTABLISHED RELIABILITY STYLE RBR80 AND RBR81

*

The RBR81 portion of this specification is Inactive for New Design after 20 October 2009. Its suggested replacement is DLA Land and Maritime drawing 09008.

This specification is approved for use by all Departments and Agencies of the Department of Defense.

The requirements for acquiring the product described herein shall consist of this specification sheet and MIL-PRF-39005.

1. SCOPE

1.1 Scope. This specification covers the performance requirements for styles RBR80 and RBR81 1/, nonestablished reliability, established reliability, accurate, wire-wound, fixed resistors.

1.2 Part or Identifying Number (PIN). Resistors covered by this specification are identified by a PIN which consists of the style designation, terminal, resistance, resistance tolerance, and product level designator. The PIN is derived in accordance with MIL-PRF-39005 and is in the following form:

RBR80	L	12601	F	S
Style	Terminal	Resistance	Resistance tolerance	Product level designator

2. APPLICABLE DOCUMENTS

* 1/ RBR81 is Inactive for New Design. Its suggested replacement is DLA Land and Maritime drawing 09008.

Comments, suggestions, or questions on this document should be addressed to: DLA Land and Maritime, ATTN: VAT, Post Office Box 3990, Columbus, Ohio 43218-3990, or emailed to resistor@dla.mil. Since contact information can change, you may want to verify the currency of this address information using the ASSIST Online database at https://assist.dla.mil.

2.1 General. The documents listed in this section are specified in sections 3 and 4 of this specification. This section does not include documents cited in other sections of this specification or recommended for additional information or as examples. 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 cited in the solicitation or contract.

DEPARTMENT OF DEFENSE SPECIFICATION

MIL-PRF-39005 - Resistor, Fixed, Wire-Wound (Accurate), Nonestablished Reliability and Established Reliability, General Specification for.

* (Copies of these documents are available online at http://quicksearch.dla.mil.)

* 2.3 Order of precedence. Unless otherwise noted herein, or in the contract, in the event of a conflict between the text of this document and the references cited herein (except for related specification 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. REQUIREMENTS

3.1 General. The requirements for acquiring the product described herein shall consist of this document and MIL-PRF-39005.

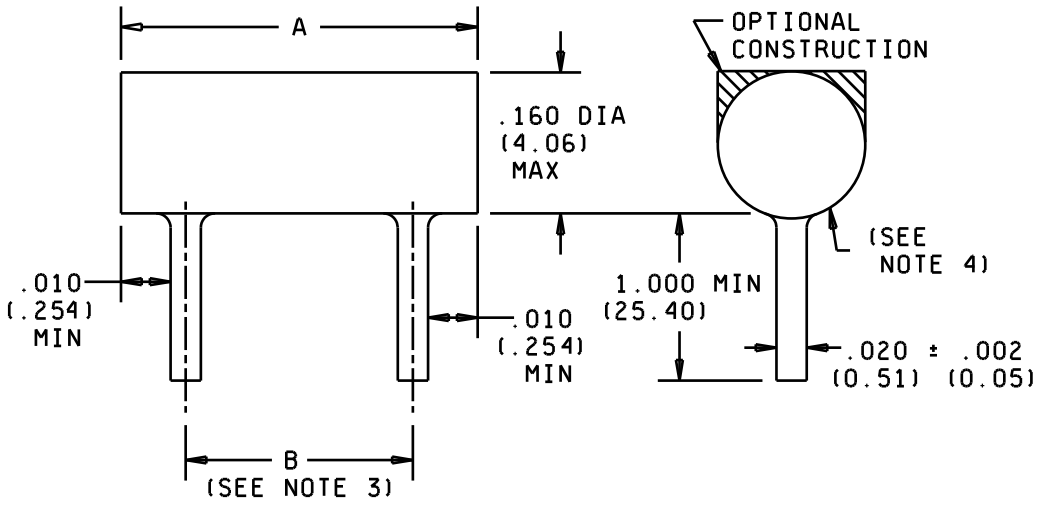
3.2 Interface and physical dimensions. Resistors shall meet the interface and physical dimensions specified in figure 1.

3.3 Minimum resistance value and applicable tolerance. Minimum resistance values and applicable tolerances are as follows:

Minimum resistance (ohms) 1/	Resistance tolerance (percent)
1000	T (±0.01)
100	Q (±0.02) and A (±0.05)
10	B (±0.10) and F (±1.0)

1/ Minimum resistance values are available for both styles RBR80 and RBR81 2/, but it is preferred that style RBR81 2/ be limited in use to resistance values exceeding 0.120 megohms.

* 2/ RBR81 is Inactive for New Design. Its suggested replacement is DLA Land and Maritime drawing 09008.



Style	A, Max	B, ±0.005 (0.13)
RBR80	0.325 (8.26)	0.225 (5.72)
RBR81 (see note 6)	0.500 (12.70)	0.400 (10.16)

NOTES:
1. Dimensions are in inches.
2. Metric equivalents are in parenthesis.
3. The lead measurements shall be made at the point of emergence from the body.
4. Leads are to be clean and solderable to within 0.005 (0.13 mm) from the resistor body.
5. Resistance measurement points for all values of resistance shall be .375 ±.0625 (9.53 mm ±1.588 mm) from the end of the body.
* 6. RBR81 is Inactive for New Design. Its suggested replacement is DLA Land and Maritime drawing 09008.

FIGURE 1. Style RBR80 and RBR81 resistors.

3.4 Maximum resistance value. Maximum resistance values shall be as follows:

Resistor style	Maximum resistance 1/ (megohms)
RBR80	0.120
RBR81 2/	0.250

1/ Based on use of .0006-inch or larger diameter wire.

* 2/ RBR81 is Inactive for New Design. Its suggested replacement is DLA Land and Maritime drawing 09008.

3.5 Power rating. Power rating shall be 0.1 watt.

3.6 Maximum voltage. Maximum voltage shall be 100 volts direct current or peak.

3.7 Maximum weight. The maximum weight shall be 0.4 gram for style RBR80 and 0.55 gram for style RBR81 1/.

3.8 Resistance-temperature characteristic. The resistance-temperature characteristic shall not exceed the value listed in table I.

TABLE I. Maximum resistance-temperature characteristic.

Resistance (ohms)	Parts / million /°C (PPM / °C)
Less than 100 ohms	±10
100 ohms and above	± 5

3.9 Maximum allowable reactance (see 4.4). The maximum allowable reactance shall be defined as follows:

a For resistance values less than 500 ohms, the phase angle shall not exceed +5 degrees.

b. For resistance values 500 ohms or greater, but less than 20,000 ohms, the phase angle shall not exceed ±10 degrees.

c. For resistance values 20,000 ohms or greater, but less than 50,000 ohms, the effective parallel capacitance shall not exceed 4.0 pF.

d. For resistance values of 50,000 ohms or greater, the maximum effective parallel capacitance shall not exceed 6.0 pF.

* 1/ RBR81 is Inactive for New Design. Its suggested replacement is DLA Land and Maritime drawing 09008.

3.10 Life. The maximum allowable change in resistance after 2,000 hours (qualification inspection) shall be as follows:

a. For resistance values of 10 ohms or greater, but less than 100 ohms, the change in resistance shall not exceed ±0.1 percent.

b. For resistance values of 100 ohms or greater, the change in resistance shall not exceed ±0.05 percent.

3.11 High temperature exposure. The maximum allowable change in resistance after 2,000 hours exposure to an ambient of 145°C shall be as follows:

a. For resistance values of 10 ohms or greater, but less than 100 ohms, the change in resistance shall not exceed ±0.1 percent.

b. For resistance values of 100 ohms or greater, the change in resistance shall not exceed ±0.05 percent.

3.12 Marking. Due to size limitations, style RBR80 resistor shall be marked with the following minimum information:

BR80L - Partial style and terminal designator
12701 - Coded resistance value
FMJ - Tolerance, failure rate, JAN marking
7445A - Date code, lot code

The complete marking is required on the unit package. Where manufacturers are able to provide more information, the following is preferred in the sequence presented: Style and source code.

4. VERIFICATION

4.1 Classification of inspection. The inspection requirements specified herein are classified as follows.

4.2 Qualification inspection. Qualification inspection shall be in accordance with MIL-PRF-39005. In addition, following the completion of group V of table VII, the 30 samples shall be tested as specified in 4.4, herein, with zero defectives allowed.

4.3 Conformance inspection. Sampling and inspection shall be in accordance with MIL-PRF-39005. In addition, prior to subjection the 102 sample units to the annual group C (table X) “High temperature exposure” test, 30 of these samples (10-high value, 10-10,000 ohms, 10-low value) will be tested as specified in 4.4, herein, with zero defectives allowed.

4.4 Maximum allowable reactance. The inherent reactance shall be measured as follows:

a. Test instrument: Hewlett-Packard RX meter, model 250B; Tektronic LC meter, type 130, or any other equivalent meter.

b. Frequency range: 100 kHz to 500 kHz.

5. PACKAGING

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

6. NOTES

(This section contains information of a general or explanatory nature that may be helpful, but is not mandatory.)

6.1 Notes. The notes specified in MIL-PRF-39005 are applicable to this specification.

6.2 Acquisition requirements. Acquisition documents must specify the following:

a. Title, number, and date of the specification.

b. Unless otherwise specified (see 2.1), the versions of the individual documents referenced will be those in effect on the date of release of the solicitation.

c. Packaging requirements (see 5.1).

6.3 Supplementary insulation. Where potential to ground is over 250 volts, supplementary insulation should be provided.

6.4 Amendment notations. The margins of this specification are marked with asterisks to indicate modifications generated by this amendment. 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.

Custodians:
Navy - EC
DLA -CC

Preparing activity:
DLA - CC

(Project 5905-2014-044)

NOTE: The activities listed above were interested in this document as of the date of this document. Since organizations and responsibilities can change, you should verify the currency of the information above using the ASSIST Online database at https://assist.dla.mil.