INCH-POUND
MIL-PRF-55182/7M
w/ Amendment 2
13 January 2012
SUPERSEDING
MIL-PRF-55182/7M
w/ Amendment 1
8 April 2009

PERFORMANCE SPECIFICATION

RESISTORS, FIXED, FILM, NONESTABLISHED RELIABILITY, ESTABLISHED RELIABILITY, AND SPACE LEVEL, STYLE RN*50 1/

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-55182.

1. SCOPE

1.1 Scope. This specification covers the associated requirements for style RN*50 1/, nonestablished reliability, established reliability, and space level, film, fixed resistors. Designers are CAUTIONED on using these resistors in high power pulse applications (see 6.4).

1.2 Part or Identifying Number (PIN). Resistors covered by this specification are identified by a PIN which is derived in accordance with MIL-PRF-55182 and is in the following form:

RN*50 1/	C1001FS
Style and Termination type	Coded number

2. APPLICABLE DOCUMENTS

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-55182 - Resistors, Fixed, Film, Nonestablished Reliability, Established Reliability, and Space Level, General Specification for.

1/ Third letter is variable, dependent upon lead material or capability (see table I of MIL-PRF-55182).

Comments, suggestions, or questions on this document should be addressed to: US Army Communications-Electronics RDEC, ATTN: AMSRD-CER-PR-D, Aberdeen Proving Ground, Bldg. 6010 K-130, C2/CNT East, MD 21005 or emailed to James.W.McArthur@us.army.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.daps.dla.mil.

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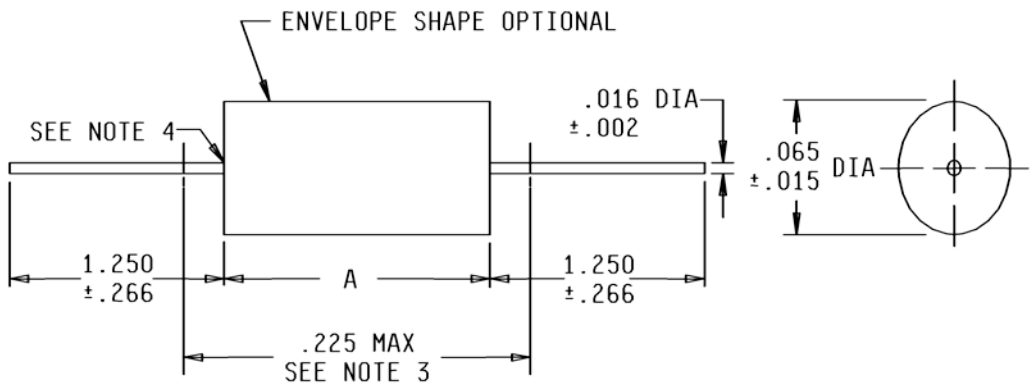

Characteristic	Dimension A ±0.020
C, E	0.180
H, J, K	0.150

Inches	mm
0.002	0.05
0.015	0.38
0.016	0.41
0.020	0.51
0.065	1.65
0.150	3.81
0.180	4.57
0.225	5.72
0.266	6.76
1.250	31.75

NOTES:
1. Dimensions are in inches.
2. Metric equivalents are given for general information only.
3. The maximum length is "clean lead" to "clean lead".
4. The end of the body shall be that point at which the body diameter equals the nearest drill size larger than 250 percent of the nominal lead diameter.

FIGURE 1. Style RN*50 resistors. 1/

(Copies of these documents are available online at http://assist.daps.dla.mil/quicksearch/ or from the Standardization Document Order Desk, 700 Robbins Avenue, Building 4D, Philadelphia, PA 19111-5094.)

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-55182.

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

3.2.1 Characteristic. Style RN*50 1/ is available in characteristic C, characteristic E, characteristic H, characteristic J, and characteristic K.

1/ Third letter is variable, dependent upon lead material or capability (see table I of MIL-PRF-55182).

3.2.2 Terminal types. Terminal RNC is inactive for new design when specified with characteristics C and E. Terminal RNR is inactive for new design with when specified with characteristics H, J, and K. Terminal type RNN is inactive for new design when specified with characteristics H, J, and K (see 6.5).

3.3 Power rating. The power rating shall be 0.05 watt (see 6.3).

3.4 Voltage rating. The continuous working voltage shall not exceed 200 volts.

3.5 Resistance. Minimum and maximum resistance values shall be as specified in table I.

TABLE I. Minimum and maximum resistance values.

Minimum resistance		Maximum resistance	
Characteristic	Ohms	Characteristic	Megohms
H	10.0	H	0.796
J	10.0	J	0.796
K	10.0	K	0.796
C	10.0	C	0.1
E	10.0	E	0.1

3.6 Voltage coefficient (applicable to resistors of 1,000 ohms and above). The voltage coefficient shall not exceed ±0.005 percent per volt.

3.7 Mechanical shear. The mechanical shear test is applicable to this specification.

3.8 Marking. Due to size limitations this style resistor shall be marked with the following minimum information:

226K - Date code, characteristic.
49R9 - Coded resistance value.
FMCJ - Tolerance, product level, lead material, JAN marking.
* - Manufacturer's code (see qualified products list for manufacturer's code symbols).

* 3.9 Pure tin. The use of pure tin, as an underplate or final finish is prohibited both internally and externally. Tin content of resistor components and solder shall not exceed 97 percent, by mass. Tin shall be alloyed with a minimum of 3 percent lead, by mass (see 6.7).

4. VERIFICATION

4.1 Verification. Verification shall be in accordance with MIL-PRF-55182.

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 material 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 which may be helpful, but is not mandatory.)

6.1 Notes. The notes specified in MIL-PRF-55182 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). (i.e. Electrostatic discharge (ESD) sensitive packaging).

6.3 Power rating at 70°C. The power rating at 70°C for 2,000 hours life test has been established at 0.1 watt, maximum voltage 200 volts. It should be noted that the failure rate level is established at the single condition of 125°C, 0.05 watt and 10,000 hour life test duration.

6.4 Pulse applications. Designers are CAUTIONED on using these resistors in high power pulse applications. Since they have not been qualified nor tested for such applications, damage and premature failure are possible. This resistor only sees a one hour overload (see paragraph 4.8.3 of MIL-PRF-55182) as part of the group A inspection of this specification. Designers MAY CONSIDER using DLA Land and Maritime drawing 03003 for high power pulse applications. NOTE: This resistor does not have the geometry (form, fit) of the MIL-PRF-55182 resistor, nor are they subject to the same Qualification/verification, Conformance inspection, or Periodic Group C inspection requirements.

6.5 RNN terminal substitution. Due to the loss of the last source of supply for weldable RNN style resistors with characteristic H, J, and K, it is recommended instead to use the RNC style resistors with solderable/weldable terminals for equivalent characteristic, resistance value, tolerance, and product level.

6.6 Electrostatic charge. Under several combinations of conditions, these resistors can be electrically damaged, by electrostatic charges, and drift from specified value. Users should consider this phenomena when ordering or shipping resistors. Direct shipment to the Government is controlled by MIL-DTL-39032 which specifies a preventive packaging procedure.

* 6.7 Tin whisker growth. The use of alloys with tin content greater than 97 percent, by mass, may exhibit tin whisker growth problems after manufacture. Tin whiskers may occur anytime from a day to years after manufacture and can develop under typical operating conditions, on products that use such materials. Conformal coatings applied over top of a whisker-prone surface will not prevent the formation of tin whiskers. Alloys of tin containing 3 percent or more lead, by mass, have shown to inhibit the growth of tin whiskers. For additional information on this matter, refer to ASTM-B545 (Standard Specification for Electrodeposited Coatings of Tin).

6.8 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.

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