

PERFORMANCE SPECIFICATION

RESISTOR, FIXED, FILM, NONESTABLISHED RELIABILITY,
ESTABLISHED RELIABILITY, AND SPACE LEVEL, STYLE RN*65 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](#).

"S" Product Rate Level is inactive for
new design for RNC65, see [6.6](#)

1. SCOPE

1.1 Scope. This specification covers the associated requirements for style RN*65 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:

<u>RN*65 1/</u>	<u>C1001FS</u>
Style and	Coded number
Termination type	

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.

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 Army Standardization Program Lead Engineering Operations Division (PRD), ATTN: CERDEC, Pod 153, Bldg. 6010, Aberdeen Proving Ground, MD 21005 or emailed to usarmy.APG.cerdec.mbx.standardization-crx@mail.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>.

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w/ Amendment 3

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

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Resistor, Fixed, Film, Nonestablished Reliability, Established Reliability, and Space Level, 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 Requirements. Requirements shall be in accordance with MIL-PRF-55182, and as specified herein.

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

3.2.1 Characteristic. Style RN*65 1/ is available in characteristic C, characteristic E, characteristic H, characteristic J, and characteristic K.

3.2.2 Terminal. 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 0.250 watt (see 6.3).

3.4 Voltage rating. The continuous working voltage shall not exceed 300 volts.

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

TABLE I. Minimum and maximum resistance values.

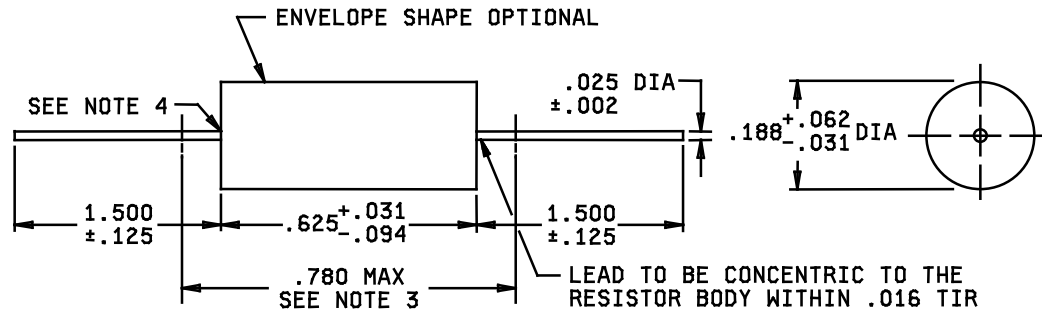
Minimum resistance		Maximum resistance	
Characteristic	Ohms	Characteristic	Megohms
H 1/	1.0	H	8.06
J	10.0	J	8.06
K 1/	1.0	K	8.06
C	10.0	C	4.99
E	10.0	E	4.99

1/ For resistance tolerance D and resistance tolerance F only. For resistance tolerance B, the minimum resistance value shall be 10.0 ohms.

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

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

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Inches	mm	Inches	mm	Inches	mm	Inches	mm	Inches	mm	Inches	mm
0.002	0.05	0.025	0.64	0.062	1.57	0.125	3.18	0.625	15.88	1.500	38.10
0.016	0.41	0.031	0.79	0.094	2.39	0.188	4.78	0.780	19.81		

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.
5. Lead length for new design and tape and reel packaging shall be 1.00 inch +.625 inch, -.00 inch (25.4 mm +15.80 mm, -0.00 mm).
6. Lead concentric tolerance is to be measured at the point of lead egress from the resistor body.

FIGURE 1. Style RN*65 resistors. 1/

3.7 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.

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

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 of life test has been established at 0.5 watt, 350 volts maximum voltage. It should be noted that the failure rate level is established at the condition of 125°C, .250 watt and 10,000-hour 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 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 [03004](#) 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 RNC65 Product rate level substitution. Due to the loss of the source of supply for the "S" Product Rate Level (effective 15 October 1997), it is recommended that the "R" Product Rate Level be used for equivalent characteristic, resistance value and tolerance.

6.7 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.

6.8 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).

6.9 Amendment notations. The margins of this specification are marked with vertical lines to indicate modification 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 and relationship.

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Custodians:

Army - CR
Navy - EC
Air Force - 85
DLA - CC
NASA - NA

Preparing activity:

Army - CR

Agent:

DLA - CC

Review activities:

Army - AR
Navy - AS, CG, MC, OS
Air Force - 19, 99

(Project 5905-2015-005)

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>.