

INCH-POUND
MIL-PRF-39009/2B
3 July 1997
SUPERSEDING
MIL-R-39009/2A
22 April 1970

PERFORMANCE SPECIFICATION

RESISTORS, FIXED, WIRE-WOUND, (POWER TYPE, CHASSIS MOUNTED), NONESTABLISHED RELIABILITY, AND ESTABLISHED RELIABILITY, STYLES RER40, RER45, RER50, AND RER55

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

1. SCOPE

1.1 Scope. This specification covers the associated requirements for nonestablished reliability and established reliability styles RER40, RER45, RER50, and RER55 resistors. These resistors are noninductively wound.

2. APPLICABLE DOCUMENTS

2.1 General. The documents listed in this section are specified in section 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 user 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.

Beneficial comment (recommendations, additions, deletions) and any pertinent data which may be of use in improving this document should be address to: US Army Communications - Electronics Command, ATTN: AMSEL-LC-LEO-E-EP, Fort Monmouth, NJ 07703-5023 by using the Standardization Document Improvement Proposal (DD Form 1426) appearing at the end of this document or by letter.

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).

SPECIFICATION

DEPARTMENT OF DEFENSE

MIL-PRF-39009 - Resistors, Fixed, Wire-Wound (Power Type, Chassis Mounted), Nonestablished Reliability, and Established Reliability, General Specification for.

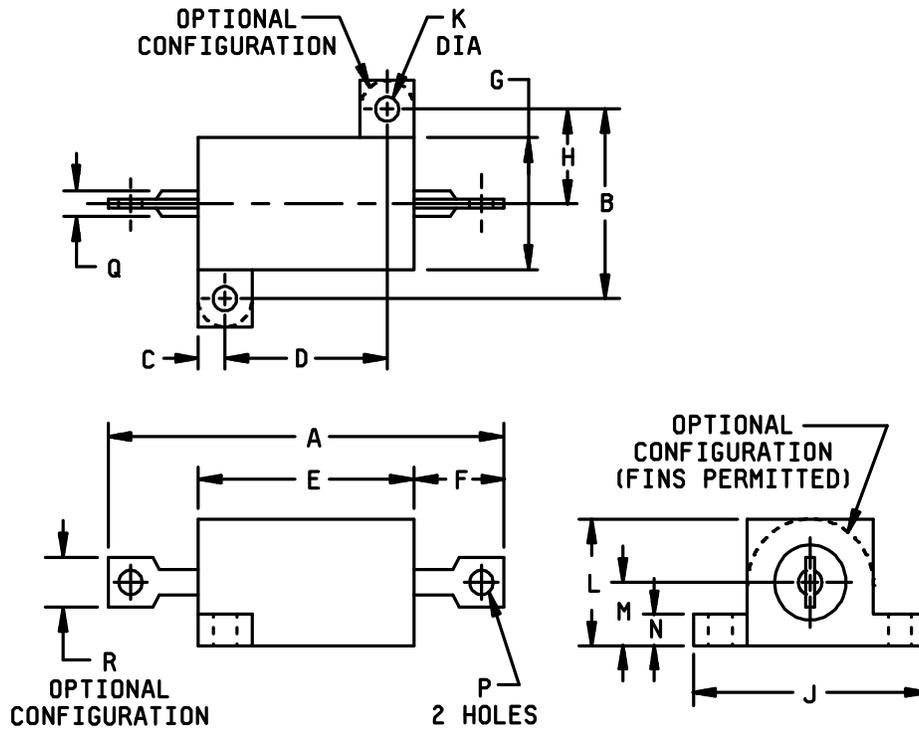
(Unless otherwise indicated, copies of the above specifications, standards, and handbooks are available from the Defense Printing Service Detachment Office, Building 4D (Customer Service), 700 Robbins Avenue, Philadelphia PA 19111-5094.)

2.3 Order of precedence. In the event of a conflict between the text of this document and the references cited herein, 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. The requirements for acquiring the product described herein shall consist of this document and MIL-PRF-39009.

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



Resistor style	A ±.062 (1.57)	B ±.010 (0.25)	C ±.031 (0.79)	D ±.010 (0.25)	E ±.062 (1.57)	F ±.062 (1.57)	G ±.062 (1.57)	H ±.031 (0.79)	J ±.031 (0.79)	K ±.005 (0.13)	L ±.031 (0.79)	M ±.062 (1.57)	N ±.031 (0.79)	P ±.005 (0.79)	Q min AWG	R min
RER40	1.125 (28.58)	0.490 (12.45)	0.078 (1.98)	0.444 (11.28)	0.600 (15.24)	0.266 (6.76)	0.334 (8.48)	0.245 (6.22)	0.646 (16.41)	0.093 (2.36)	0.320 (8.13)	0.133 (3.38)	0.065 (1.65)	0.050 (1.27)	16	0.085 (2.16)
RER45	1.375 (34.93)	0.625 (15.88)	0.094 (2.39)	0.562 (14.27)	0.750 (19.05)	0.312 (7.92)	0.438 (11.13)	0.312 (7.92)	0.812 (20.62)	0.094 (2.39)	0.406 (10.31)	0.203 (5.16)	0.094 (2.39)	0.085 (2.16)	12	0.140 (3.56)
RER50	1.938 (49.23)	0.781 (19.84)	0.172 (4.37)	0.719 (18.26)	1.062 (26.97)	0.438 (11.13)	0.531 (13.49)	0.391 (9.93)	1.094 (27.79)	0.125 (3.18)	0.562 (14.27)	0.281 (7.14)	0.094 (2.39)	0.085 (2.16)	12	0.140 (3.56)
RER55	2.781 (70.64)	0.844 (21.44)	0.188 (4.78)	1.562 (39.67)	1.938 (49.23)	0.438 (11.13)	0.594 (15.09)	0.422 (10.72)	1.156 (29.36)	0.125 (3.18)	0.625 (15.88)	0.312 (7.92)	0.094 (2.39)	0.085 (2.16)	12	0.140 (3.56)

NOTES:

1. All dimensions are in inches.
2. Metric equivalents (to the nearest .01 mm) are given for general information only and are based upon 1 inch = 5.4 mm.
3. Millimeters are in parentheses.

FIGURE 1. Styles RER40, RER45, RER50, and RER55 (non-inductively wound) resistors.

3.2.1 Weight. The maximum weight shall be as specified in table I.

TABLE I. Weight.

Resistor style	Weight (grams, maximum)
RER40	3.3
RER45	8.8
RER50	16.5
RER55	35.0

3.3 Power rating. The power rating shall be as specified in table II, based on full-load operation at an ambient temperature of 25°C, when mounted on the chassis specified in 4.4 (see 6.5).

TABLE II. Power rating.

Resistor style	Power rating (watts)
RER40	5
RER45	10
RER50	20
RER55	30

3.3.1 Power rating (free air). The free air (resistor not mounted on a chassis) power rating based on full load operation at 25°C shall be as specified in table III.

TABLE III. Power rating (free air).

Resistor style	Power rating (watts)
RER40	3
RER45	6
RER50	8
RER55	10

3.4 Resistance. The minimum and maximum nominal resistance values shall be as specified in table IV.

TABLE IV. Minimum and maximum nominal resistance values.

Resistor style	Resistance values	
	Minimum	Maximum
	<u>Ohms</u>	<u>Ohms</u>
RER40	1	1,650
RER45	1	2,800
RER50	1	6,040
RER55	1	19,600

4. VERIFICATION

4.1 Sampling and inspection. Sampling and inspection shall be in accordance with MIL-PRF-39009 and as specified herein.

4.2 Dielectric withstanding voltage.

4.2.1 At atmospheric pressure. The magnitude of the test voltage shall be as specified in table V.

TABLE V. Dielectric withstanding voltages at atmospheric pressure.

Resistor style	Dielectric withstanding test voltage
	<u>Volts (rms)</u>
RER40	1,000
RER45	1,000
RER50	1,000
RER55	2,000

4.2.2 At reduced barometric pressure. The magnitude of the test voltage shall be 500 volts.

4.3 Terminal strength. The direct pull shall be as specified in table VI.

TABLE VI. Direct pull.

Resistor style	Direct pull (pounds)
RER40	5 +0, -1/4
RER45	5 +0, -1/4
RER50	10 +0, -1/2
RER55	10 +0, -1/2

4.4 Chassis dimensions. The chassis dimensions shall be as specified in table VII.

TABLE VII. Chassis dimensions.

Resistor style	Length, width, and height	Thickness
	<u>Inches</u>	<u>Inch</u>
RER40	6 x 4 x 2	.04
RER45	6 x 4 x 2	.04
RER50	7 x 5 x 2	.04
RER55	7 x 5 x 2	.04

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 material 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 or Defense Agency, or within the Military Department's System Command. 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.

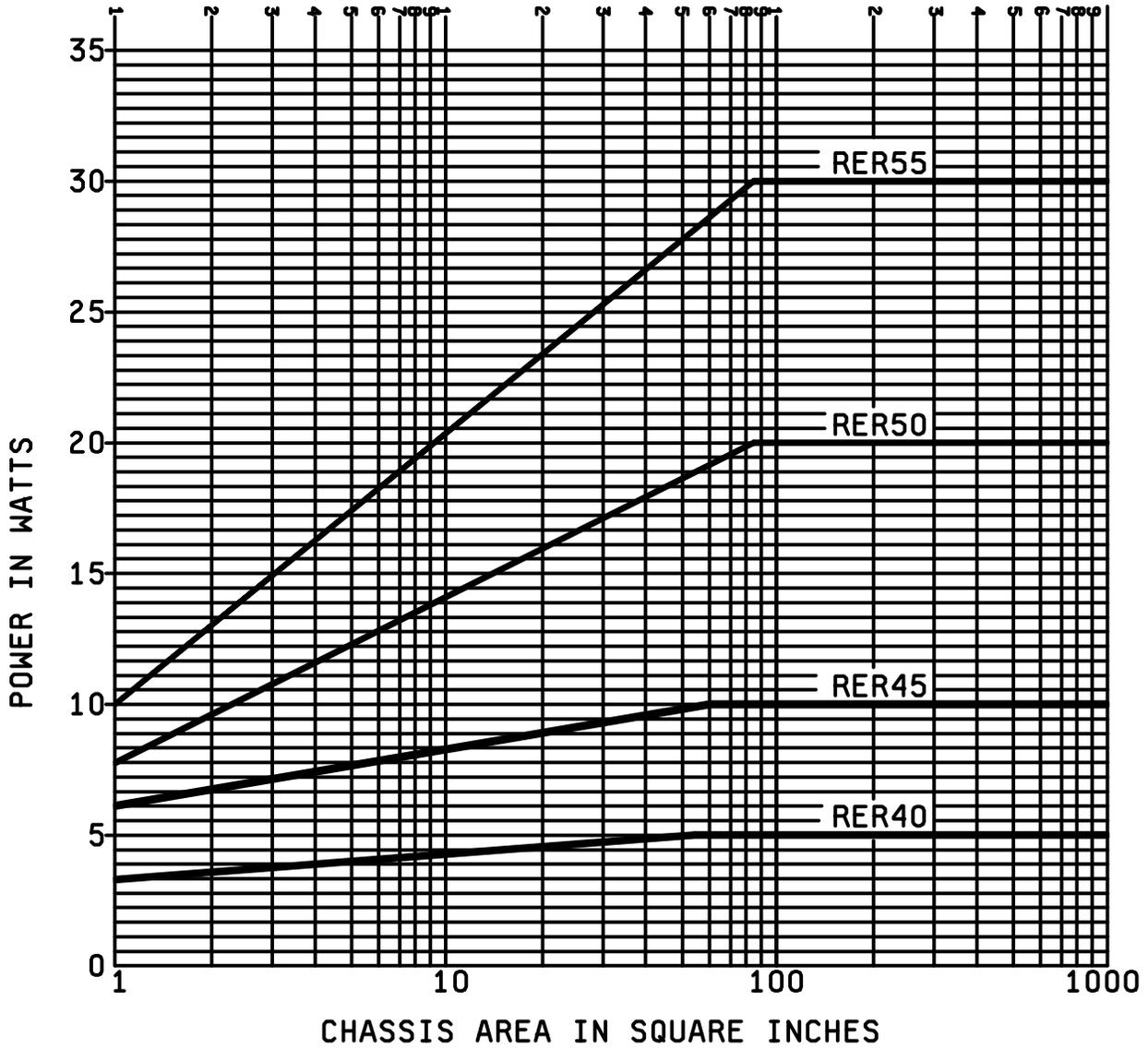
6. NOTES

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

6.1 Intended use. In addition to the notes specified herein, the notes specified in MIL-PRF-39009 are applicable to this specification.

6.2 Acquisition requirements. Acquisition documents must specify the following:

- a. Title, number, and date of this specification and the complete PIN (see 1.2.1).
- b. Issue of DoDISS to be cited in the solicitation, and if required, the specific issue of individual documents referenced (see 2.1).
- c. Packaging requirements (see 5.1).



NOTE: The chassis derating curves are based on the full power ratings at an ambient temperature of 25°C. These curves are independent of the temperature derating curves.

FIGURE 2. Chassis area derating curves.

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6.3 MIL-R-18546/1 substitution data. Resistors of this specification, regardless of failure rate (FR), are substitutes for resistors of the same resistance value and characteristic N of the inactivated specification MIL-R-18546/1 as in accordance with table VIII.

TABLE VIII. Substitution data.

MIL-R-18546/1 characteristic N (Non-Inductive wound)	Substitute MIL-PRF-39009/2
<u>Style</u> RE60 RE65 RE70 RE75	<u>Style</u> RER40 RER45 RER50 RER55

6.3.1 Interchangeability. The increase in power rating for RER50 by this revision does not require the assignment of new Federal Stock Numbers for items previously described as RE50, 15 watt rating. Items in this specification are mutually interchangeable with items of the same type designation procured under MIL-R-39009/2A.

6.4 Chassis area derating curves. Figure 2 may be used for design information.

6.5 Change in power rating RER50. The revision of style RER50 to 20 watts from the previous 15 watt rating is based on qualification of similar style RE70 (characteristic N) under MIL-R-18546. In addition, the accumulated FR component hours at 15 watts have been halved for qualification FR level retention. Until Sufficient hours are established at 20 watts, the Qualified Products List will continue to list FR levels at the previous 15 watt rating, and in addition, the FR level at the 20 watt rating

6.6 Changes from previous issue. Marginal notations are not used in this revision to identify changes with respect to the previous issue due to the extensiveness of the changes.

Custodians:
Army - CR
Navy - EC
Air Force - 11

Review activities:
Army - AT, AV, CR4, MI
Navy - CG, MC, OS
Air Force - 17, 19, 85

Preparing activity:
Army - CR

Agent:
DLA - CC

(Project 5905-1441-02)

STANDARDIZATION DOCUMENT IMPROVEMENT PROPOSAL

INSTRUCTIONS

1. The preparing activity must complete blocks 1, 2, 3, and 8. In block 1, both the document number and revision letter should be given.
2. The submitter of this form must complete blocks 4, 5, 6, and 7.
3. The preparing activity must provide a reply within 30 days from receipt of the form.

NOTE: This form may not be used to request copies of documents, nor to request waivers, or clarification of requirements on current contracts. Comments submitted on this form do not constitute or imply authorization to waive any portion of the referenced document(s) or to amend contractual requirements.

I RECOMMEND A CHANGE:

1. DOCUMENT NUMBER
MIL-PRF-39009/2B

2. DOCUMENT DATE (YYMMDD)
3-JUL-1997

3. DOCUMENT TITLE RESISTORS, FIXED, WIRE-WOUND, (POWER TYPE, CHASSIS MOUNTED), NONESTABLISHED RELIABILITY, AND ESTABLISHED RELIABILITY, STYLES RER40, RER45, RER50, AND RER55

4. NATURE OF CHANGE *(Identify paragraph number and include proposed rewrite, if possible. Attach extra sheets as needed.)*

5. REASON FOR RECOMMENDATION

6. SUBMITTER

a. NAME *(Last, First, Middle Initial)*

b. ORGANIZATION

c. ADDRESS *(Include Zip Code)*

d. TELEPHONE *(Include Area Code)*
(1) Commercial
(2) AUTOVON
(if applicable)

7. DATE SUBMITTED
(YYMMDD)

8. PREPARING ACTIVITY

a. NAME

US Army Communications-Electronics Command

b. TELEPHONE *Include Area Code)*

(1) Commercial
(908)427-3441

(2) AUTOVON
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c. ADDRESS *(Include Zip Code)*
ATTN: AMSEL-LC-LEO-E-EP
Fort Monmouth, NJ 07703-5023

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