

INCH-POUND

MIL-R-22684/3C
w/Amendment 2
27 May 2016
SUPERSEDING
MIL-R-22684/3C
w/Amendment 1
5 February 2009

MILITARY SPECIFICATION

RESISTOR, FIXED, FILM, INSULATED, STYLE RL32

This specification is inactive for design after
2 July 1970. Use [MIL-PRF-39017/3](#).

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-22684](#).

1. SCOPE

1.1 Scope. This specification covers the associated requirements for insulated, film, fixed resistors of 2-percent and 5-percent resistance tolerance. These resistors are capable of full-load operation at an ambient temperature of 70°C and have a resistance-temperature characteristic of ± 200 parts per million per degree Celsius (ppm/°C). Designers are CAUTIONED on using these resistors in high power pulse applications (see [6.3](#)).

1.2 Part or Identifying Number (PIN). Resistors covered by this specification are identified by a PIN which consists of the basic number of this specification and a coded dash number taken from [table 1](#). The PIN is in the following form:

<u>M22684/03</u>	-	<u>1001</u>
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Performance specification number		Coded dash number

The coded dash number is derived in accordance with paragraph 6.2.2 of [MIL-PRF-22684](#).

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.

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 by email 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/>

AMSC N/A

FSC 5905



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-22684 - Resistor, Fixed, Film (Insulated), General Specification.

(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, 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-22684.

3.2 Interface and physical dimensions. Resistors shall meet the interface and physical dimensions specified on [figure 1](#), as applicable.

3.3 Power rating. The power rating shall be 1 watt based on full load operation at an ambient temperature of 70°C.

3.4 Voltage rating. The maximum continuous working voltage shall not exceed 500 volts.

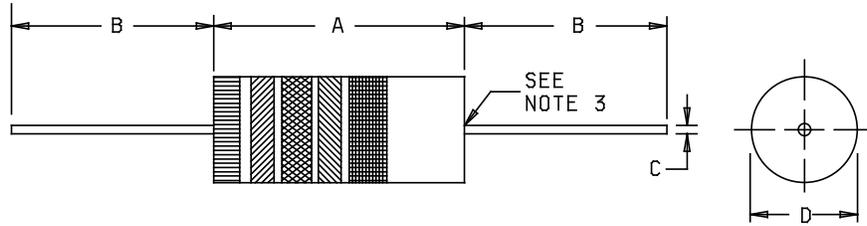
3.5 Resistance values and resistance tolerances. The minimum and maximum standard resistance values and associated resistance tolerances shall be as listed in [table I](#).

3.6 Terminal type. The terminal type available shall be in accordance with MIL-PRF-22684 and [table I](#).

3.7 Dielectric withstanding voltage. Resistors shall be tested as specified in MIL-PRF-22684. The magnitude of test voltage shall be as follows:

Atmospheric pressure	-	1,000 volts rms
Barometric pressure	-	500 volts rms

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Ltr	DIMENSIONS			
	INCHES		MILLIMETERS	
	MIN	MAX	MIN	MAX
A	0.520	0.593	13.21	15.06
B	1.375	1.625	34.92	41.28
C	0.038	0.042	0.96	1.07
D	0.175	0.205	4.45	5.21

NOTES:

1. Dimensions are in inches.
2. Metric equivalents are given for general information only.
3. The end of the body shall be that point at which the diameter equals the nearest drill size larger than 250 percent of the nominal lead diameter. The leads shall be solderable to within .125 inch (3.18 mm) of the resistor body.

FIGURE 1. Configuration and dimensions.

3.8 Insulation resistance. Resistors shall be tested as specified in MIL-PRF-22684 except the insulation resistance shall be not less than 100 megohms.

3.9 Moisture resistance. Resistors shall be tested as specified in MIL-PRF-22684 except the change in resistance shall not exceed 1.5 percent.

3.10 Life. Resistors shall be tested as specified in MIL-PRF-22684 except the change in resistance shall not exceed 2.0 percent.

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Table I. PIN designation. (M22684/03-)

Dash No.	Type Designation	Resistance tolerance (percent)	Nominal total resistance value (in Ohms)	Terminal	Dash No.	Type Designation	Resistance tolerance (percent)	Nominal total resistance value (in Ohms)	Terminal
0001	RL32S100G	2	10	S	0053	RL32S121G	2	120	S
0002	RL32S100J	5			0054	RL32S121J	5		
0003	RL32S110G	2	11		0055	RL32S131G	2	130	
0004	RL32S110J	5			0056	RL32S131J	5		
0005	RL32S120G	2	12		0057	RL32S151G	2	150	
0006	RL32S120J	5			0058	RL32S151J	5		
0007	RL32S130G	2	13		0059	RL32S161G	2	160	
0008	RL32S130J	5			0060	RL32S161J	5		
0009	RL32S150G	2	15		0061	RL32S181G	2	180	
0010	RL32S150J	5			0062	RL32S181J	5		
0011	RL32S160G	2	16		0063	RL32S201G	2	200	
0012	RL32S160J	5			0064	RL32S201J	5		
0013	RL32S180G	2	18		0065	RL32S221G	2	220	
0014	RL32S180J	5			0066	RL32S221J	5		
0015	RL32S200G	2	20		0067	RL32S241G	2	240	
0016	RL32S200J	5			0068	RL32S241J	5		
0017	RL32S220G	2	22		0069	RL32S271G	2	270	
0018	RL32S220J	5			0070	RL32S271J	5		
0019	RL32S240G	2	24		0071	RL32S301G	2	300	
0020	RL32S240J	5			0072	RL32S301J	5		
0021	RL32S270G	2	27		0073	RL32S331G	2	330	
0022	RL32S270J	5			0074	RL32S331J	5		
0023	RL32S300G	2	30		0075	RL32S361G	2	360	
0024	RL32S300J	5			0076	RL32S361J	5		
0025	RL32S330G	2	33		0077	RL32S391G	2	390	
0026	RL32S330J	5			0078	RL32S391J	5		
0027	RL32S360G	2	36		0079	RL32S431G	2	430	
0028	RL32S360J	5			0080	RL32S431J	5		
0029	RL32S390G	2	39		0081	RL32S471G	2	470	
0030	RL32S390J	5			0082	RL32S471J	5		
0031	RL32S430G	2	43		0083	RL32S511G	2	510	
0032	RL32S430J	5			0084	RL32S511J	5		
0033	RL32S470G	2	47		0085	RL32S561G	2	560	
0034	RL32S470J	5			0086	RL32S561J	5		
0035	RL32S510G	2	51		0087	RL32S621G	2	620	
0036	RL32S510J	5			0088	RL32S621J	5		
0037	RL32S560G	2	56		0089	RL32S681G	2	680	
0038	RL32S560J	5			0090	RL32S681J	5		
0039	RL32S620G	2	62		0091	RL32S751G	2	750	
0040	RL32S620J	5			0092	RL32S751J	5		
0041	RL32S680G	2	68		0093	RL32S821G	2	820	
0042	RL32S680J	5			0094	RL32S821J	5		
0043	RL32S750G	2	75		0095	RL32S911G	2	910	
0044	RL32S750J	5			0096	RL32S911J	5		
0045	RL32S820G	2	82		0097	RL32S102G	2	1,000	
0046	RL32S820J	5			0098	RL32S102J	5		
0047	RL32S910G	2	91		0099	RL32S112G	2	1,100	
0048	RL32S910J	5			0100	RL32S112J	5		
0049	RL32S101G	2	100		0101	RL32S122G	2	1,200	
0050	RL32S101J	5			0102	RL32S122J	5		
0051	RL32S111G	2	110	0103	RL32S132G	2	1,300		
0052	RL32S111J	5		0104	RL32S132J	5			

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Table I. PIN designation (M22684/03-) - continued.

Dash No.	Type Designation	Resistance tolerance (percent)	Nominal total resistance value (in Ohms)	Terminal	Dash No.	Type Designation	Resistance tolerance (percent)	Nominal total resistance value (in Ohms)	Terminal
0105	RL32S152G	2	1,500	S	0157	RL32S183G	2	18,000	S
0106	RL32S152J	5			0158	RL32S183J	5		
0107	RL32S162G	2	1,600		0159	RL32S203G	2	20,000	
0108	RL32S162J	5			0160	RL32S203J	5		
0109	RL32S182G	2	1,800		0161	RL32S223G	2	22,000	
0110	RL32S182J	5			0162	RL32S223J	5		
0111	RL32S202G	2	2,000		0163	RL32S243G	2	24,000	
0112	RL32S202J	5			0164	RL32S243J	5		
0113	RL32S222G	2	2,200		0165	RL32S273G	2	27,000	
0114	RL32S222J	5			0166	RL32S273J	5		
0115	RL32S242G	2	2,400		0167	RL32S303G	2	30,000	
0116	RL32S242J	5			0168	RL32S303J	5		
0117	RL32S272G	2	2,700		0169	RL32S333G	2	33,000	
0118	RL32S272J	5			0170	RL32S333J	5		
0119	RL32S302G	2	3,000		0171	RL32S363G	2	36,000	
0120	RL32S302J	5			0172	RL32S363J	5		
0121	RL32S332G	2	3,300		0173	RL32S393G	2	39,000	
0122	RL32S332J	5			0174	RL32S393J	5		
0123	RL32S362G	2	3,600		0175	RL32S433G	2	43,000	
0124	RL32S362J	5			0176	RL32S433J	5		
0125	RL32S392G	2	3,900	0177	RL32S473G	2	47,000		
0126	RL32S392J	5		0178	RL32S473J	5			
0127	RL32S432G	2	4,300	0179	RL32S513G	2	51,000		
0128	RL32S432J	5		0180	RL32S513J	5			
0129	RL32S472G	2	4,700	0181	RL32S563G	2	56,000		
0130	RL32S472J	5		0182	RL32S563J	5			
0131	RL32S512G	2	5,100	0183	RL32S623G	2	62,000		
0132	RL32S512J	5		0184	RL32S623J	5			
0133	RL32S562G	2	5,600	0185	RL32S683G	2	68,000		
0134	RL32S562J	5		0186	RL32S683J	5			
0135	RL32S622G	2	6,200	0187	RL32S753G	2	75,000		
0136	RL32S622J	5		0188	RL32S753J	5			
0137	RL32S682G	2	6,800	0189	RL32S823G	2	82,000		
0138	RL32S682J	5		0190	RL32S823J	5			
0139	RL32S752G	2	7,500	0191	RL32S913G	2	91,000		
0140	RL32S752J	5		0192	RL32S913J	5			
0141	RL32S822G	2	8,200	0193	RL32S104G	2	100,000		
0142	RL32S822J	5		0194	RL32S104J	5			
0143	RL32S912G	2	9,100	0195	RL32S114G	2	110,000		
0144	RL32S912J	5		0196	RL32S114J	5			
0145	RL32S103G	2	10,000	0197	RL32S124G	2	120,000		
0146	RL32S103J	5		0198	RL32S124J	5			
0147	RL32S113G	2	11,000	0199	RL32S134G	2	130,000		
0148	RL32S113J	5		0200	RL32S134J	5			
0149	RL32S123G	2	12,000	0201	RL32S154G	2	150,000		
0150	RL32S123J	5		0202	RL32S154J	5			
0151	RL32S133G	2	13,000	0203	RL32S164G	2	160,000		
0152	RL32S133J	5		0204	RL32S164J	5			
0153	RL32S153G	2	15,000	0205	RL32S184G	2	180,000		
0154	RL32S153J	5		0206	RL32S184J	5			
0155	RL32S163G	2	16,000	0207	RL32S204G	2	200,000		
0156	RL32S163J	5		0208	RL32S204J	5			

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Dash No.	Type Designation	Resistance tolerance (percent)	Nominal total resistance value (in Ohms)	Terminal
0209	RL32S224G	2	220,000	S
0210	RL32S224J	5		
0211	RL32S244G	2	240,000	
0212	RL32S244J	5		
0213	RL32S274G	2	270,000	
0214	RL32S274J	5		
0215	RL32S304G	2	300,000	
0216	RL32S304J	5		
0217	RL32S334G	2	330,000	
0218	RL32S334J	5		
0219	RL32S364G	2	360,000	
0220	RL32S364J	5		
0221	RL32S394G	2	390,000	
0222	RL32S394J	5		
0223	RL32S434G	2	430,000	
0224	RL32S434J	5		
0225	RL32S474G	2	470,000	
0226	RL32S474J	5		

Dash No.	Type Designation	Resistance tolerance (percent)	Nominal total resistance value (in Ohms)	Terminal
0227	RL32S514G	2	510,000	S
0228	RL32S514J	5		
0229	RL32S564G	2	560,000	
0230	RL32S564J	5		
0231	RL32S624G	2	620,000	
0232	RL32S624J	5		
0233	RL32S684G	2	680,000	
0234	RL32S684J	5		
0235	RL32S754G	2	750,000	
0236	RL32S754J	5		
0237	RL32S824G	2	820,000	
0238	RL32S824J	5		
0239	RL32S914G	2	910,000	
0240	RL32S914J	5		
0241	RL32S105G	2	1,000,000	
0242	RL32S105J	5		

4. VERIFICATION

4.1 Sampling and inspection. Sampling and inspection procedures shall be in accordance with Group A inspection and Group B inspection of MIL-PRF-22684 and as specified herein.

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 activity within the Military Service or Defense Agency, or within the military services 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-22684](#) are applicable to this specification.

6.2 Acquisition requirements. Acquisition documents must specify the following:

- a. Title, number, date of this specification, and complete PIN (see [1.2](#)).
- 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.

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6.3 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. These resistors only see a one time pulse (Short-time overload) as part of the group B inspection of this specification. Designers MAY CONSIDER using DLA Land and Maritime drawing [03006](#) for high power pulse applications.

6.4 Amendment notification. 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.

Custodians:

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

Preparing activity:
DLA - CC

(Project 5905-2016-046)

Review activities:

Army - AR, AT, EA, MI
Navy - CG, MC, OS
Air Force - 19

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