

PERFORMANCE SPECIFICATION

RESISTORS, FIXED, FILM, INSULATED, STYLE RL42....TX

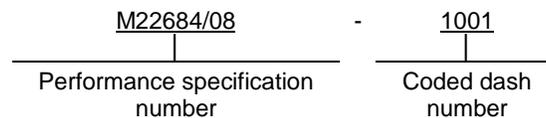
This specification is approved for use by all Departments and Agencies of the Department of Defense.

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:



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.

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.

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



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DEPARTMENT OF DEFENSE SPECIFICATION

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

DEPARTMENT OF DEFENSE STANDARDS

MIL-STD-202 - Test Methods for Electronic and Electrical Components Parts.

MIL-STD-202-108 - Test Method Standard Method 108, Life (At Elevated Ambient Temperature)

MIL-STD-1285 - Marking of Electrical and Electronic Parts.

(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 2 watts 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.

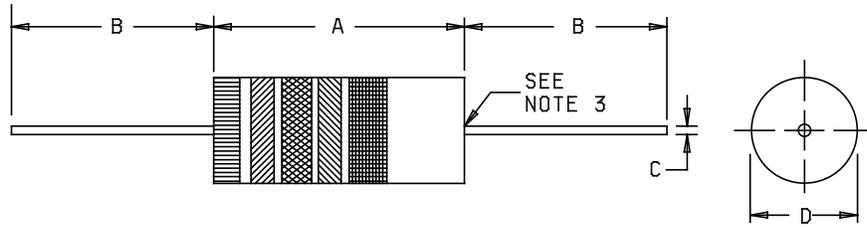
3.6 Terminal type. The terminal type available shall be in accordance with MIL-PRF-22684 and table I.

3.7 Thermal shock. Resistors shall be tested as specified in MIL-PRF-22684 except 150°C +3°C, -0°C shall be used instead of 85°C +3°C, -0°C.

3.8 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	.648	.728	16.46	18.49
B	1.375	1.625	34.92	41.28
C	.040	.047	1.09	1.19
D	.280	.336	7.11	8.53

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.

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

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

3.11 Life. Resistors shall be tested as specified in MIL-PRF-22684 except the change in resistance shall not exceed 3.0 percent.

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Table I. Part Number Designation. (M22684/08-)

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
1001	RL42S100GTX	2	10	S	1053	RL42S121GTX	2	120	S
1002	RL42S100JTX	5			1054	RL42S121JTX	5		
1003	RL42S110GTX	2	11		1055	RL42S131GTX	2	130	
1004	RL42S110JTX	5			1056	RL42S131JTX	5		
1005	RL42S120GTX	2	12		1057	RL42S151GTX	2	150	
1006	RL42S120JTX	5			1058	RL42S151JTX	5		
1007	RL42S130GTX	2	13		1059	RL42S161GTX	2	160	
1008	RL42S130JTX	5			1060	RL42S161JTX	5		
1009	RL42S150GTX	2	15		1061	RL42S181GTX	2	180	
1010	RL42S150JTX	5			1062	RL42S181JTX	5		
1011	RL42S160GTX	2	16		1063	RL42S201GTX	2	200	
1012	RL42S160JTX	5			1064	RL42S201JTX	5		
1013	RL42S180GTX	2	18		1065	RL42S221GTX	2	220	
1014	RL42S180JTX	5			1066	RL42S221JTX	5		
1015	RL42S200GTX	2	20		1067	RL42S241GTX	2	240	
1016	RL42S200JTX	5			1068	RL42S241JTX	5		
1017	RL42S220GTX	2	22		1069	RL42S271GTX	2	270	
1018	RL42S220JTX	5			1070	RL42S271JTX	5		
1019	RL42S240GTX	2	24		1071	RL42S301GTX	2	300	
1020	RL42S240JTX	5			1072	RL42S301JTX	5		
1021	RL42S270GTX	2	27		1073	RL42S331GTX	2	330	
1022	RL42S270JTX	5			1074	RL42S331JTX	5		
1023	RL42S300GTX	2	30		1075	RL42S361GTX	2	360	
1024	RL42S300JTX	5			1076	RL42S361JTX	5		
1025	RL42S330GTX	2	33		1077	RL42S391GTX	2	390	
1026	RL42S330JTX	5			1078	RL42S391JTX	5		
1027	RL42S360GTX	2	36		1079	RL42S431GTX	2	430	
1028	RL42S360JTX	5			1080	RL42S431JTX	5		
1029	RL42S390GTX	2	39		1081	RL42S471GTX	2	470	
1030	RL42S390JTX	5			1082	RL42S471JTX	5		
1031	RL42S430GTX	2	43		1083	RL42S511GTX	2	510	
1032	RL42S430JTX	5			1084	RL42S511JTX	5		
1033	RL42S470GTX	2	47		1085	RL42S561GTX	2	560	
1034	RL42S470JTX	5			1086	RL42S561JTX	5		
1035	RL42S510GTX	2	51		1087	RL42S621GTX	2	620	
1036	RL42S510JTX	5			1088	RL42S621JTX	5		
1037	RL42S560GTX	2	56		1089	RL42S681GTX	2	680	
1038	RL42S560JTX	5			1090	RL42S681JTX	5		
1039	RL42S620GTX	2	62		1091	RL42S751GTX	2	750	
1040	RL42S620JTX	5			1092	RL42S751JTX	5		
1041	RL42S680GTX	2	68		1093	RL42S821GTX	2	820	
1042	RL42S680JTX	5			1094	RL42S821JTX	5		
1043	RL42S750GTX	2	75		1095	RL42S911GTX	2	910	
1044	RL42S750JTX	5			1096	RL42S911JTX	5		
1045	RL42S820GTX	2	82		1097	RL42S102GTX	2	1,000	
1046	RL42S820JTX	5			1098	RL42S102JTX	5		
1047	RL42S910GTX	2	91		1099	RL42S112GTX	2	1,100	
1048	RL42S910JTX	5			1100	RL42S112JTX	5		
1049	RL42S101GTX	2	100		1101	RL42S122GTX	2	1,200	
1050	RL42S101JTX	5			1102	RL42S122JTX	5		
1051	RL42S111GTX	2	110	1103	RL42S132GTX	2	1,300		
1052	RL42S111JTX	5		1104	RL42S132JTX	5			

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Table I. Part number designation (M22684/08-) - 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
1105	RL42S152GTX	2	1,500	S	1157	RL42S183GTX	2	18,000	S
1106	RL42S152JTX	5			1158	RL42S183JTX	5		
1107	RL42S162GTX	2	1,600		1159	RL42S203GTX	2	20,000	
1108	RL42S162JTX	5			1160	RL42S203JTX	5		
1109	RL42S182GTX	2	1,800		1161	RL42S223GTX	2	22,000	
1110	RL42S182JTX	5			1162	RL42S223JTX	5		
1111	RL42S202GTX	2	2,000		1163	RL42S243GTX	2	24,000	
1112	RL42S202JTX	5			1164	RL42S243JTX	5		
1113	RL42S222GTX	2	2,200		1165	RL42S273GTX	2	27,000	
1114	RL42S222JTX	5			1166	RL42S273JTX	5		
1115	RL42S242GTX	2	2,400		1167	RL42S303GTX	2	30,000	
1116	RL42S242JTX	5			1168	RL42S303JTX	5		
1117	RL42S272GTX	2	2,700		1169	RL42S333GTX	2	33,000	
1118	RL42S272JTX	5			1170	RL42S333JTX	5		
1119	RL42S302GTX	2	3,000		1171	RL42S363GTX	2	36,000	
1120	RL42S302JTX	5			1172	RL42S363JTX	5		
1121	RL42S332GTX	2	3,300		1173	RL42S393GTX	2	39,000	
1122	RL42S332JTX	5			1174	RL42S393JTX	5		
1123	RL42S362GTX	2	3,600		1175	RL42S433GTX	2	43,000	
1124	RL42S362JTX	5			1176	RL42S433JTX	5		
1125	RL42S392GTX	2	3,900		1177	RL42S473GTX	2	47,000	
1126	RL42S392JTX	5			1178	RL42S473JTX	5		
1127	RL42S432GTX	2	4,300		1179	RL42S513GTX	2	51,000	
1128	RL42S432JTX	5			1180	RL42S513JTX	5		
1129	RL42S472GTX	2	4,700		1181	RL42S563GTX	2	56,000	
1130	RL42S472JTX	5			1182	RL42S563JTX	5		
1131	RL42S512GTX	2	5,100		1183	RL42S623GTX	2	62,000	
1132	RL42S512JTX	5			1184	RL42S623JTX	5		
1133	RL42S562GTX	2	5,600		1185	RL42S683GTX	2	68,000	
1134	RL42S562JTX	5			1186	RL42S683JTX	5		
1135	RL42S622GTX	2	6,200		1187	RL42S753GTX	2	75,000	
1136	RL42S622JTX	5			1188	RL42S753JTX	5		
1137	RL42S682GTX	2	6,800		1189	RL42S823GTX	2	82,000	
1138	RL42S682JTX	5			1190	RL42S823JTX	5		
1139	RL42S752GTX	2	7,500		1191	RL42S913GTX	2	91,000	
1140	RL42S752JTX	5			1192	RL42S913JTX	5		
1141	RL42S822GTX	2	8,200		1193	RL42S104GTX	2	100,000	
1142	RL42S822JTX	5			1194	RL42S104JTX	5		
1143	RL42S912GTX	2	9,100		1195	RL42S114GTX	2	110,000	
1144	RL42S912JTX	5			1196	RL42S114JTX	5		
1145	RL42S103GTX	2	10,000		1197	RL42S124GTX	2	120,000	
1146	RL42S103JTX	5			1198	RL42S124JTX	5		
1147	RL42S113GTX	2	11,000		1199	RL42S134GTX	2	130,000	
1148	RL42S113JTX	5			1200	RL42S134JTX	5		
1149	RL42S123GTX	2	12,000		1201	RL42S154GTX	2	150,000	
1150	RL42S123JTX	5			1202	RL42S154JTX	5		
1151	RL42S133GTX	2	13,000		1203	RL42S164GTX	2	160,000	
1152	RL42S133JTX	5			1204	RL42S164JTX	5		
1153	RL42S153GTX	2	15,000		1205	RL42S184GTX	2	180,000	
1154	RL42S153JTX	5			1206	RL42S184JTX	5		
1155	RL42S163GTX	2	16,000		1207	RL42S204GTX	2	200,000	
1156	RL42S163JTX	5			1208	RL42S204JTX	5		

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Table I. Part number designation (M22684/08-) - 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
1209	RL42S224GTX	2	220,000	S	1231	RL42S624GTX	2	620,000	S
1210	RL42S224JTX	5			1232	RL42S624JTX	5		
1211	RL42S244GTX	2	240,000		1233	RL42S684GTX	2	680,000	
1212	RL42S244JTX	5			1234	RL42S684JTX	5		
1213	RL42S274GTX	2	270,000		1235	RL42S754GTX	2	750,000	
1214	RL42S274JTX	5			1236	RL42S754JTX	5		
1215	RL42S304GTX	2	300,000		1237	RL42S824GTX	2	820,000	
1216	RL42S304JTX	5			1238	RL42S824JTX	5		
1217	RL42S334GTX	2	330,000		1239	RL42S914GTX	2	910,000	
1218	RL42S334JTX	5			1240	RL42S914JTX	5		
1219	RL42S364GTX	2	360,000		1241	RL42S105GTX	2	1,000,000	
1220	RL42S364JTX	5			1242	RL42S105JTX	5		
1221	RL42S394GTX	2	390,000		1243	RL42S115GTX	2	1,100,000	
1222	RL42S394JTX	5			1244	RL42S115JTX	5		
1223	RL42S434GTX	2	430,000		1245	RL42S125GTX	2	1,200,000	
1224	RL42S434JTX	5			1246	RL42S125JTX	5		
1225	RL42S474GTX	2	470,000		1247	RL42S135GTX	2	1,300,000	
1226	RL42S474JTX	5			1248	RL42S135JTX	5		
1227	RL42S514GTX	2	510,000		1249	RL42S155GTX	2	1,500,000	
1228	RL42S514JTX	5			1250	RL42S155JTX	5		
1229	RL42S564GTX	2	560,000						
1230	RL42S564JTX	5							

3.12 Power conditioning. When resistors are tested as specified in 4.2, there shall be no mechanical damage.

3.13 Marking. At the option of the manufacturer, parts may be marked in accordance with method I of MIL-STD-1285. The PIN, FSCM, date and lot code, resistance value, and tolerance shall be marked on the parts as in the following example:

M22684/ - PIN
08-1239 - Source code
12345 - Date and lot code
8401AA - Resistance value and tolerance
910K 2%

If this type marking is used, then the green colored band for TX identification may be omitted. Marking shall remain legible after all tests.

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 except power conditioning shall be performed on 100 percent of the product supplied under this specification.

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4.2 Power conditioning (see 3.12). Resistors shall be tested in accordance with [method 108](#) of [MIL-STD-202](#). The following details and exceptions shall apply:

- a. Measurement before conditioning: DC resistance measured in accordance with paragraph 3.7 of [MIL-PRF-22684](#).
- b. Conditioning procedures: Each resistor supplied under this specification shall be subjected to power conditioning for a period of 24 hours at 150 percent rated power. Mounting shall be such that 25°C, +10°C, -5°C ambient air can be circulated around the resistors by means of forced air with a velocity not exceeding 500 FPM. The maximum applied voltage shall not exceed 500 V rms.
- c. Measurement after conditioning: After power conditioning, the resistors shall be stabilized at room conditions for a minimum of 2 hours before the dc resistance measurements are made. Resistors that are outside of the tolerance limit and those that have changed more than 0.5 percent due to the conditioning shall be removed from the lot. When the combined quantity removed exceeds 10 percent of the lot, the entire lot shall be rejected. The supplier shall have a complete record available of all test results obtained during power conditioning testing (see ordering data).

4.3 TX identification. Resistors procured to, and meeting all of the criteria specified herein shall bear a green colored band in place of the band "E" in accordance with appendix B to [MIL-PRF-22684](#). The symbol "TX" shall be printed at one of the locations specified below:

- a. Preferred: On the green colored band described above.
- b. On the packing which packaged the items in groups.

In the event the resistor sample fails to meet the requirements of [MIL-PRF-22684](#) and this specification sheet, the manufacturer shall remove the green band from the sample tested and also from all the resistors represented by the sample.

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 03008 for high power pulse applications.

6.4 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.

Custodians:

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

Preparing activity:
DLA - CC

(Project 5905-2008-074)

Review activities:

Army - AR, AT, CR4, MI
Navy - AS, CG, MC, OS
Air Force - 19, 99

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>.