

INCH-POUND  
MIL-PRF-32159/12  
w/ Amendment 2  
21 February 2013  
SUPERSEDING  
MIL-PRF-32159/12  
w/ Amendment 1  
6 December 2007

## PERFORMANCE SPECIFICATION

RESISTORS, CHIP, FIXED, FILM, ZERO OHM, INDUSTRIAL,  
HIGH RELIABILITY, SPACE LEVEL, STYLE RCZ0603

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-32159](#).

### 1. SCOPE

- \* 1.1 Scope. This specification covers the requirements for style RCZ0603, fixed, film, chip, zero ohm, industrial, high reliability, space level resistors. This style is available in all termination materials. Designers are CAUTIONED on using these resistors in high power pulses application (see [6.5](#)).

1.2 Part or Identifying Number (PIN). Chip resistors covered by this specification are identified by a PIN which must consist of the basic number of this specification and a coded dash number. The PIN must be in the following form:

<u>M32159</u>	<u>B12C</u>
Performance	Coded dash
specification number	number

The coded dash number must be derived in accordance with [MIL-PRF-32159](#).

### 2. APPLICABLE DOCUMENTS

- \* 2.1 General. The documents listed in this section are specified in sections 3, 4 or 5 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 of documents in sections 3, 4 or 5 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, OH 43218-3990, or emailed to [Resistor@dla.mil](mailto: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>.

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2.2 Government documents.

2.2.1 Specifications, standards, and handbooks. The following specifications, standards, and handbooks forms 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-32159** - Resistors, Chip, Fixed, Film, Zero Ohm, Industrial, High Reliability, Space Level, General Specification for.

\* (Copies of these documents are available online at <https://assist.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 associated specifications, specification sheets or MS standards), 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-32159**.

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 0.070 watts.

3.4 Current rating (by termination). The maximum current rating shall be 1.5 amps for terminations B/G, 1.1 amps for termination styles C/D, and 0.68 amps for termination styles U/T.

3.5 Resistance (by termination). Maximum resistance value shall be 0.030 ohms for termination styles B/G, 0.060 ohms for termination styles C/D, and 0.150 ohms for termination styles U/T.

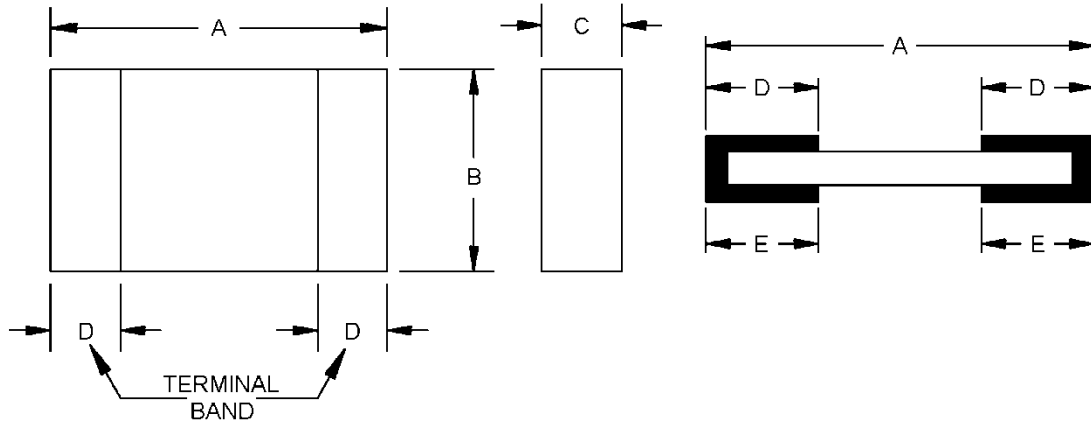
4. VERIFICATION

4.1 Verification. Verification shall be in accordance with **MIL-PRF-32159**.

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CONFIGURATION A

CONFIGURATION B



Inches	mm	Inches	mm
0.005	0.13	0.032	.81
0.006	0.15	0.033	.84
0.010	0.25	0.060	1.52
0.012	0.31	0.064	1.63
0.015	0.38		

Configuration	Dimension A Inch	Dimension B Inch	Dimension C Inch	Dimension D Inch	Dimension E Inch
A	0.060 ±.005	0.032 ±.005	0.010 / 0.033	0.010 ±.005	N/A
B	0.064 ±.006	0.032 ±.005	0.010 / 0.033	0.012 ±.005	0.015 ±.005

NOTES:

1. Dimensions are in inches.
2. Metric equivalents are given for general information only.
3. Unless otherwise specified, tolerance is ±.005 (0.13 mm).
4. The pictorial view of the styles above is given as representative of the envelope of the item. Slight deviations from the outline shown, which are contained within the envelope, and do not alter the functional aspects of the device are acceptable.
5. Configuration A covers termination materials D, and T.
6. Configuration B covers termination materials B, C, G, and U.

FIGURE 1. Style RCZ0603.

## 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 Intended use. Chip resistors are intended to be use in thin or thick film hybrid circuits where micro-circuitry is indicated and in surface mount applications.

6.2 Acquisition requirements. Acquisition documents should specify the following:

- a. Title, number, date of this specification, the applicable associated specification, and the 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 (see 5.1).
- d. If marking is required (see MIL-PRF-32159).

6.3 Tolerance for wraparound termination. The added tolerance for the wraparound type termination is intended to apply only to termination, metallization, and pretinning material.

- \* 6.4 Electrostatic charge effects. Under relatively low humidity conditions, some types of film resistors, particularly those with small dimensions and high sheet resistivity materials, are prone to sudden significant changes in resistance (usually reductions in value) and to changes in temperature coefficient of resistance as a result of discharge of static charges built up on associated objects during handling, packaging, or shipping. Substitution of more suitable implements and materials can help minimize this problem. For example, use cotton gloves, static eliminator devices, air humidifiers, and operator and workbench grounding systems can reduce static buildup during handling. Means of alleviating static problems during shipment include elimination of loose packaging of resistors and use of metal foil (conductive) and static dissipation packaging materials. Direct shipments to the government are controlled by MIL-DTL-39032 which specifies a preventive packaging procedure.

- \* 6.5 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, damages and premature failures are possible. These resistors only see a five second short time overload as part of the group B inspection of MIL-PRF-32159.

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6.6 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.

Custodians:  
Army - CR  
Navy - EC  
Air Force - 85  
DLA – CC

Preparing activity:  
DLA -CC  
  
(Project 5905-2012-016)

Review activities:  
Army - AR, AT, AV, CR4  
Navy - AS, CG, MC, OS  
Air Force - 19, 99

Civil agencies:  
NASA – NA

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>.