

REVISIONS			
LTR	DESCRIPTION	DATE	APPROVED
A	Add requirements for termination finish (see 3.4); Editorial and DoD policy corrections throughout.	12 DEC 02	K. Cottongim
B	Add pure tin, manufacturer edibility, and pulse application paragraphs. Editorial changes throughout.	25 MAR 10	M. Radecki

Prepared in accordance with [ASME Y14.100](#)

Source control drawing

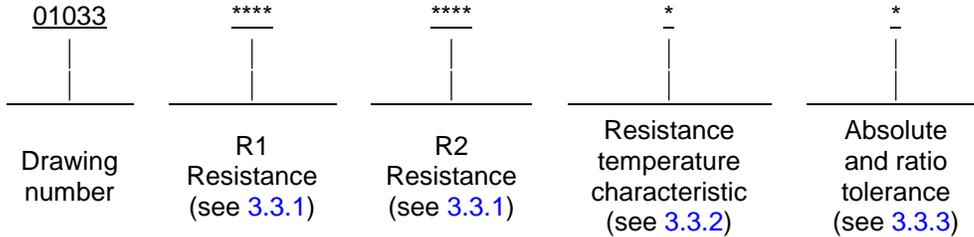
REV STATUS OF PAGES	REV	B	B	B	B	B	B	B									
	PAGES	1	2	3	4	5	6	7									

PMIC N/A	PREPARED BY Jesus V. Garcia III	DEFENSE SUPPLY CENTER, COLUMBUS COLUMBUS, OH
Original date of drawing: 26 February 2001	CHECKED BY Andrew Ernst	TITLE RESISTOR, FIXED, FILM, CHIP, VOLTAGE DIVIDER, STYLE 1206
	APPROVED BY Kendall A. Cottongim	
	SIZE A	CODE IDENT. NO. 037Z3
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1. SCOPE

1.1 Scope. This drawing describes the requirements for a voltage divider, fixed film, chip resistor, style 1206.

1.2 Part or Identifying Number (PIN). The complete PIN is as follows:



2. APPLICABLE DOCUMENTS

2.1 Government documents.

* 2.1.1 Specifications and standards. 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 cited in the solicitation or contract.

DEPARTMENT OF DEFENSE SPECIFICATIONS

[MIL-PRF-55342](#) - Resistors, Chip, Fixed, Film, Nonestablished Reliability, Established Reliability, Space Level, General Specification For.

DEPARTMENT OF DEFENSE STANDARDS

[MIL-STD-690](#) - Failure Rate Sampling Plans and Procedures.
[MIL-STD-790](#) - Standard Practice for Established Reliability and High Reliability Qualified Products List (QPL) Systems for Electrical, Electronic, and Fiber Optic Parts Specifications.
[MIL-STD-1285](#) - Marking of Electrical and Electronic Parts.

* (Copies of these documents are available online at <https://assist.daps.dla.mil/quicksearch/> or from the Standardization Document Order Desk, 700 Robbins Avenue, Building 4D, Philadelphia, PA 19111-5094.)

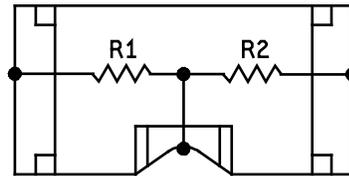
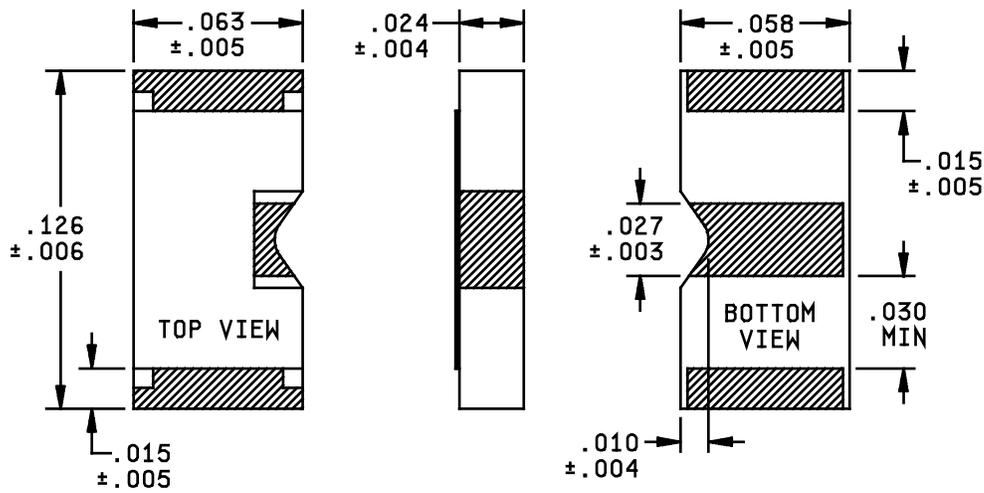
* 2.2 Order of precedence. Unless otherwise noted herein or in the event of a conflict between the text of this document and the references cited herein (except for related specification sheets), the text of this document takes precedence. Nothing in this document, however, supersedes applicable laws and regulations unless a specific exemption has been obtained.

3. REQUIREMENTS

3.1 Item requirements. The individual item requirements shall be as specified herein and [MIL-PRF-55342](#).

3.2 Interface and physical dimensions. The resistor shall meet the interface and physical dimensions as specified in [MIL-PRF-55342](#) and herein (see [figure 1](#)).

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SCHEMATIC

<u>Inches</u>	<u>mm</u>	<u>Inches</u>	<u>mm</u>	<u>Inches</u>	<u>mm</u>	<u>Inches</u>	<u>mm</u>
0.003	0.076	0.006	0.152	0.024	0.609	0.058	1.473
0.004	0.102	0.010	0.254	0.027	0.685	0.063	1.600
0.005	0.127	0.015	0.381	0.030	0.762	0.126	3.200

NOTES:

1. Dimensions are in inches.
2. Metric equivalents are given for general information only.
3. The picturization of the resistor above is a given representation 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.

FIGURE 1. RESISTOR, FIXED, FILM, CHIP.

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3.3 Electrical characteristics.

3.3.1 Resistance. The nominal resistance expressed in ohms is identified by four digits; the first three digits represent the significant figures and the last digit specifies the number of zeros to follow. When the value of the resistance is less than 1,000 ohms, or when fractional values of an ohm are required, the "R" shall be substituted for one of the significant figures.

3.3.1.1 Resistance range.

3.3.1.1.1 Package resistance range. The package resistance range shall be 10 ohms to 200 kilohms.

3.3.1.1.2 Individual resistance range. The individual resistance range, per resistor, is 5 ohms to 125 kilohms.

3.3.2 Resistance temperature characteristic (RTC). The resistance temperature characteristic is identified by a single letter in accordance with [table I](#).

TABLE I. Resistance temperature characteristic.

Symbol	Resistance temperature characteristic (RTC) in part per million (ppm)
E	25
H	50
K	100

3.3.3 Absolute and ratio tolerance. The absolute and ratio tolerances are identified by a single letter in accordance with [table II](#).

TABLE II. Absolute and Ratio tolerances.

Symbol	Absolute tolerance (±)	Ratio tolerance (±)
A	0.05	0.05
B	0.05	0.10
C	0.05	0.50
D	0.05	1.00
E	0.10	0.05
F	0.10	0.10
G	0.10	0.50
H	0.10	1.00
J	0.50	0.05
K	0.50	0.10
M	0.50	0.50
N	0.50	1.00
P	1.00	0.05
R	1.00	0.10
S	1.00	0.50
T	1.00	1.00

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3.3.4 Power rating.

3.3.4.1 Package power rating. The package power rating is 0.250 watts.

3.3.4.2 Individual resistor power rating. The individual power rating per resistor is 0.125 watts.

3.3.5 Operating temperature. The operating temperature shall be -65°C to +150°C.

3.4 Termination material. Termination material shall be in accordance with [MIL-PRF-55342](#), code letter B.

* 3.4.1 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 [6.4](#)).

3.5 Moisture resistance. When resistors are tested as specified in [4.4.1.2.2](#), there shall be no evidence of mechanical damage; the change in resistance between the initial and final measurements shall not exceed the limits as specified in [MIL-PRF-55342](#).

3.6 Marking. Marking of the individual chip resistors is not required; however, each unit package shall be marked in accordance with [MIL-STD-1285](#) and include the PIN as specified herein (see [1.2](#)), the manufacturer's name or Commercial and Government Entity (CAGE) code, date, and lot codes.

3.7 Recycled, recovered, or environmentally preferable materials. Recycled, recovered, or environmentally preferable materials should be used to the maximum extent possible provided that the material meets or exceeds the operational and maintenance requirements, and promotes economically advantageous life cycle costs.

* 3.8 Manufacturer eligibility. To be eligible for listing as a approved source of supply, a manufacturer shall be listed on the [MIL-PRF-55342](#) Qualified Products List for at least one part, or perform the group A and group B inspections specified herein on a sample agreed upon by the manufacturer and DSCC-VA.

* 3.8.1 Certificate of compliance. A certificate of compliance shall be required from manufacturers requesting to be listed as an approved source of supply.

3.9 Workmanship. Resistors shall be processed in such a manner as to be uniform in quality and parts shall be free from any defects that will affect life, serviceability, or appearance.

4. VERIFICATION

4.1 Qualification inspection. Qualification inspection is not applicable to this document.

4.2 Reliability assurance program. The reliability assurance provisions specified in [MIL-PRF-55342](#) and maintained in accordance with [MIL-STD-790](#) are not applicable to this document.

4.3 Product level qualification. Product level qualification specified in [MIL-PRF-55342](#) and [MIL-STD-690](#) is not applicable to this document.

4.4 Conformance inspection.

4.4.1 Inspection of product for delivery. Inspection of product for delivery shall consist of group A (ER level) and group B inspections.

4.4.1.1 Group A inspection. Group A inspection (ER level) shall be in accordance with [MIL-PRF-55342](#). PPM testing and verification as specified in [MIL-PRF-55342](#) are not applicable to this document.

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4.4.1.2 Group B inspection. Group B inspection shall be in accordance with [MIL-PRF-55342](#).

4.4.1.2.1 Certification. The procuring activity may accept a certificate of compliance in lieu of Group B inspection.

4.4.1.2.2 Moisture resistance. Moisture resistance shall be in accordance with [MIL-PRF-55342](#).

4.4.1.3 Visual and mechanical inspection. Resistors shall be examined to verify that the materials, design, construction, physical dimensions, marking, and workmanship are in accordance with the applicable requirements [3.2](#), [3.6](#), and [3.9](#).

4.5 Inspection of packaging. Inspection of packaging shall be in accordance with [MIL-PRF-55342](#).

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 Department 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.

6. NOTES

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

6.1 Intended use. Resistors conforming to this drawing are intended for use when military specifications do not exist and qualified military devices that will perform the required function are not available for the OEM application. These items are suited for high current pulse applications and can be used as microwave terminations.

6.2 Ordering data. The contract or purchase order should specify the following:

- a. Complete PIN (see [1.2](#)).
- b. Requirements for delivery. One copy of the conformance inspection data with each shipment of parts by the manufacturer.
- c. Packaging requirements (see [5.1](#)). (i.e. Electrostatic discharge (ESD) sensitive packaging).
- d. Whether the manufacturer performs the group B tests or provides certification of compliance with group B requirements (see [4.4.1.2.1](#)).

6.3 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](#) that specifies a preventive packaging procedure.

* 6.4 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 3 percent 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).

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- * 6.5 Pulse applications. Designers are CAUTIONED on using the above 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 [MIL-PRF-55342](#).
- * 6.6 User of record. Coordination of this document for future revisions is coordinated only with the approved source of supply and the users of record of this document. Requests to be added as a recorded user of this drawing may be achieved online at resistor@dla.mil or in writing to: DSCC-VAT, Post Office Box 3990, Columbus, OH 43218-3990 or by telephone (614) 692-0552 or DSN 850-0552.
- * 6.7 Approved source of supply. Approved source of supply is listed herein. Additional sources will be added as they become available. Assistance in the use of this drawing may be obtained online at resistor@dla.mil or contact DSCC-VAT, Post Office Box 3990, Columbus, OH 43218-3990 or by telephone (614) 692-0552 or DSN 850-0552.

DSCC drawing PIN	Vendor similar designation or type number <u>1/</u>	Vendor CAGE	Vendor name and address
01033*****	PFC-D1206-03-****-****-_*_*	57027	IRC, Inc. Advanced Film Division 4222 South Staples Corpus Christi, TX 78411

1/ Parts must be purchased to the DSCC PIN to assure that all performance requirements and tests are met.

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