

1. SCOPE

1.1 Scope. This drawing and MIL-PRF-55365 describes the requirements for tantalum chip capacitors.

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



2. APPLICABLE DOCUMENTS

2.1 Government documents.

2.1.1 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 6.5).

DEPARTMENT OF DEFENSE SPECIFICATIONS

- MIL-PRF-55365 - Capacitors, Fixed, Electrolytic (Tantalum), Chip, Established Reliability and Nonestablished Reliability, General Specification for.
- MIL-PRF-55365/4 - Capacitors, Chip, Fixed, Tantalum, Polarized, Established Reliability and Nonestablished Reliability, Styles CWR06 and CWR09.

DEPARTMENT OF DEFENSE STANDARDS

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

(Copies of these documents are available online at <http://assist.daps.dla.mil/quicksearch/> or www.dodssp.daps.mil or from the Standardization Document Order Desk, 700 Robbins Avenue, Building 4D, 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

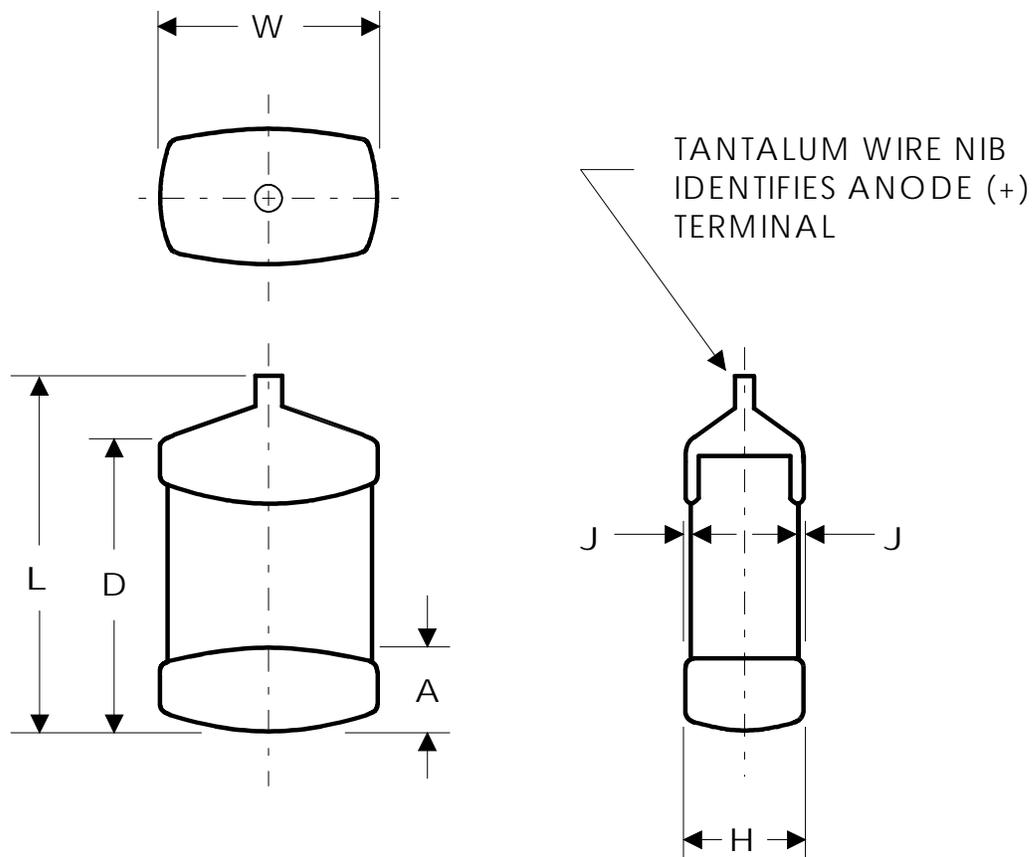
3.1 Interface and physical dimensions. The interface and physical dimensions shall be as specified herein (see figure 1).

3.1.1 Changes to product. The manufacturer shall notify the procuring activity of any changes to the product that may affect the form, fit or function of the device. Such notification shall be given prior to shipment of any device incorporating the identified change.

3.1.2 Termination finish. Termination finish shall be either letter H or letter K per MIL-PRF-55365.

3.1.3 Nickel barrier. When a nickel barrier is used on device terminations, the thickness shall be 100 μ-inch minimum.

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L	W	H (max.)	A	D (REF)	J (max.)
.265 - .281 (6.73 - 7.14)	.225 - .245 (5.72 - 6.22)	.130 (3.30)	.020 - .060 (0.51 - 1.52)	.243 (6.17)	.004 (0.10)

NOTES:

1. Dimensions are in inches.
2. Metric equivalents are given in parenthesis for general information only.
3. These capacitors are designed for mounting by dip soldering, vapor phase, reflow soldering, or other conventional means.
4. These capacitors will have a minimum of two bonding pads (top and bottom), on the major (width) dimension.

FIGURE 1. Case dimensions and configuration.

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3.2 Electrical characteristics.

3.2.1 Rated voltage. The rated voltage shall be as specified in table I.

3.2.2 Minimum capacitance. When measured in accordance with MIL-PRF-55365, except at a frequency of 100KHz \pm 5 KHz, the minimum capacitance shall be as specified in table I.

3.2.3 Capacitance tolerance. Capacitance tolerance shall be \pm 10 percent.

3.2.4 Surge current. In accordance with MIL-PRF-55365/4, option A, except total test circuit resistance shall not exceed 0.5 ohms maximum.

3.2.5 Equivalent series resistance (ESR). In accordance with MIL-PRF-55365, for each of the following conditions:

- a. 100KHz and +25°C, and
- b. 100KHz and low test temperature in table I (either -23°C or -40°C), and
- c. 120Hz and low test temperature in table I (either -23°C or -40°C).

3.3 Marking. Marking shall be in accordance with MIL-STD-1285, except the PIN shall be as specified in 1.2 with the manufacturer's name or CAGE code and date code marked on the unit packaging. Marking is not required on the individual parts.

3.4 Manufacturer eligibility. To be eligible for listing as a suggested source of supply, a manufacturer shall be listed on the MIL-PRF-55365 Qualified Products List for at least one part, or perform the group A and group C inspections specified herein on a sample of parts agreed upon by the manufacturer and DSCC-VA.

3.5 Certificate of compliance. A certificate of compliance shall be required from manufacturers requesting to be a suggested source of supply.

3.6 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.

3.7 Workmanship. The capacitor shall be uniform in quality and free from any defects that will affect life, serviceability, or appearance.

TABLE I. Electrical characteristics.

PIN 02002-	Cap. (nom.) 120Hz (μ F)	Cap. (min.) 100KHz (μ F)	Voltage (Vdc)	ESR max (Ohm)					DC leakage (max) μ A			Dissipation factor (max) 120 Hz %		
				100KHz 25°C	120Hz -23°C	100KHz -23°C	120Hz -40°C	100KHz -40°C	25°C	85°C	125°C	25°C	85°C 125°C	-55°C
001	150	50	10	0.065	0.6	0.1	-	-	15	225	375	10	12	15
002	15	9.5	35	0.190	-	-	2.0	0.25	20	120	350	6	8	8
003	22	8.5	35	0.300	2.5	0.9	-	-	10	100	120	6	8	8
004	10	3.5	40	0.600	5	1.8	-	-	7.5	113	188	6	8	8
005	47	16	20	0.140	1.0	0.18	-	-	9.5	141	235	6	8	8

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4. VERIFICATION

4.1 Qualification inspection. Qualification inspection is not required.

4.2 Conformance inspection.

4.2.1 Inspection of product for delivery. Inspection of product for delivery shall consist of the inspections, inspection conditions, sample sizes, and acceptance criteria for group A (Weibull distribution) and group C inspections (for ER capacitors) of MIL-PRF-55365, as modified herein.

4.2.2 Part Per Million (PPM) system. PPM of MIL-PRF-55365 group A shall be optional.

4.2.3 Group A inspection. Group A inspection of MIL-PRF-55365 shall be performed with surge current option A and the additions of table II.

4.2.4 Group C inspection. Group C inspection of MIL-PRF-55365 shall be performed with the following exceptions:

- a. Testing on a quarterly basis is not applicable. When a purchase order is accepted, group C test samples shall be taken from the first available product that passes group A inspection and is planned for delivery. Suggested sources of supply may ship prior to completion of group C inspection.
- b. The successful completion of group C inspection shall certify acceptable quality for one calendar year.
- c. All dash numbers, with the exception of -002, shall receive separate group C inspections. Successful completion of group C inspection for -003 shall be used to certify -002.
- d. The sample sizes for group C inspection shall be half the number listed in MIL-PRF-55365. The accept numbers shall remain the same.
- e. Exponential life testing is not applicable.

TABLE II. Group A inspection additions.

Inspection	Requirement paragraph	Sampling size
<u>Subgroup 7</u> ^{1/} Capacitance ESR	3.2.2 3.2.5	10 samples 0 failures

^{1/} Tests only required when a value is specified in table I 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 activities within the Military Service 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.

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6. NOTES

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

6.1 Intended use. Tantalum chip capacitors are intended to be used in thin or thick film hybrid circuits or surface mount applications where microcircuitry is indicated.

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

- a. Complete PIN (see 1.2).
- b. Requirements for delivery of one copy of the conformance inspection data or certificate of compliance that parts have passed conformance inspection with each shipment of parts by the manufacturer.
- c. Requirements for packaging and packing.

6.3 Users of record. Coordination of this document for future revisions is coordinated only with the suggested sources of supply and the users of record of this document. Requests to be added as a recorded user of this drawing should be in writing to: Defense Supply Center, Columbus (DSCC), ATTN: DSCC-VAT, Post Office Box 3990, Columbus, OH 43216-5000, by e-mail to capacitorfilter@dsccl.dla.mil, or by telephone (614) 692-0561 or DSN 850-0561.

6.4 Suggested sources of supply. A suggested sources of supply are listed herein. Additional sources will be added as they become available. For assistance in the use of this drawing, contact Defense Supply Center, Columbus, ATTN: DSCC-VAT, P. O. Box 3990, Columbus, OH 43216-5000, by e-mail to capacitorfilter@dsccl.dla.mil, or by telephone (614) 692-0561 or DSN 850-0561.

<u>1/</u> PIN	Vendor's similar designation or type	Vendor CAGE	Vendor's name and address
02002-001	195D157X9010N8T550	SH905	Vishay Israel LTD Industrial Park PO Box 87 Dimona 86000, Israel
02002-002	195D156X9035N8T550		
02002-003	195D226X9035N8T550		
02002-004	195D106X9040N8T550		
02002-005	195D476X9020N8T550		

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

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