

REVISIONS			
LT	DESCRIPTION	DATE	APPROVED

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

Source control drawing

REV STATUS OF PAGES	REV																		
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PMIC N/A	PREPARED BY John Bonitatibus		DESIGN ACTIVITY DLA LAND AND MARITIME COLUMBUS, OH 43218-3990																
Original date of drawing 11 December 2012	CHECKED BY Mark Rush		TITLE CAPACITORS, FIXED, GLASS DIELECTRIC, (AXIAL WIRE-LEAD TERMINALS)																
	APPROVED BY Michael A. Radecki		DWG NO. 13005																
	SIZE A	CODE IDENT. NO. 037Z3	PAGE 1 OF 7																
	SCALE N/A		REV																

1. SCOPE

1.1 Scope. This drawing describes the requirements for glass dielectric capacitors screened to MIL-PRF-23269. The capacitors described herein are possible replacements for MIL-PRF-23269/2 capacitors (see 6.4 and table II).

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

13005
├──
Drawing
number

-001
├──
Dash number
(see table I)

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 of 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.

DEPARTMENT OF DEFENSE SPECIFICATIONS

MIL-PRF-23269 - Capacitors, Fixed, Glass Dielectric, Established Reliability, 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 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 Interface and physical dimensions. The interface and physical dimensions shall be as specified in MIL-PRF-23269 and herein (see figure 1).

3.1.1 Case material. Glass.

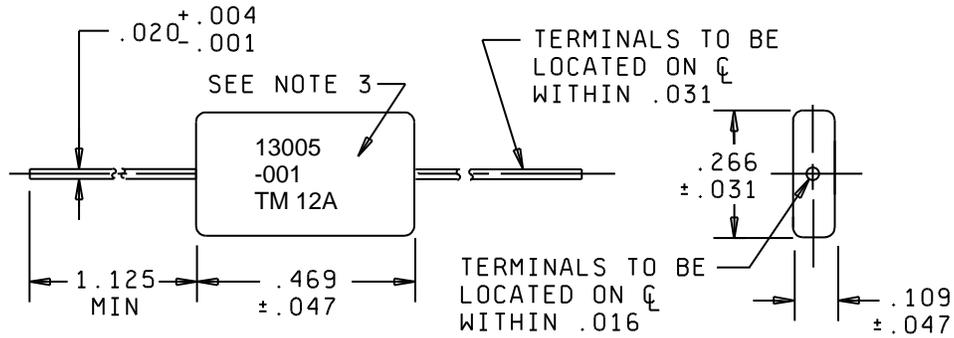
3.1.2 Terminals. Solderable.

3.1.3 Seal. Hermetic.

3.1.4 Pure tin. The use of pure tin, as an underplate or final finish is prohibited both internally and externally. Tin content of capacitor components and solder shall not exceed 97 percent, by mass. Tin shall be alloyed with a minimum of 3 percent lead, by mass (see 6.3).

3.2 Rated temperature. -55°C to +125°C.

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Inches	mm	Inches	mm
.001	0.03	.047	1.19
.004	0.10	.109	2.77
.016	0.41	.266	6.76
.020	0.51	.469	11.91
.031	0.79	1.125	28.58

NOTES:

1. Dimensions are in inches.
2. Metric equivalents are given for general information only.
3. See marking requirement (see 3.8).

FIGURE 1. Dimensions and configurations.

3.3 Electrical characteristics.

3.3.1 Capacitance tolerance. See [table I](#).

3.3.2 Rated voltage. See [table I](#).

3.3.3 Capacitance. When measured as specified in [MIL-PRF-23269](#), the capacitance shall be within the applicable tolerance of the nominal value specified in [table I](#).

3.3.4 Dissipation factor. When measured as specified in [MIL-PRF-23269](#), the dissipation factor shall not exceed 0.1 percent.

3.3.5 Temperature coefficient and capacitance drift (manufacturer eligibility only (see 3.9)). When measured as specified in [MIL-PRF-23269](#), the capacitors shall meet the following requirements:

- a. Temperature coefficient: 140 parts per million (ppm)/°C ±25 ppm/°C.
- b. Capacitance drift: 0.1 percent or 0.1 pF, whichever is greater.

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3.3.6 Insulation resistance (IR). When measured as specified in [MIL-PRF-23269](#), the insulation resistance shall be 100,000 megohms, minimum, at +25°C.

3.3.7 Quality factor (Q) (manufacturer eligibility only (see 3.9)). In accordance with [MIL-PRF-23269](#).

3.4 Seal. In accordance with [MIL-PRF-23269](#), test I.

3.5 Thermal shock (manufacturer eligibility group C only (see 3.9)). In accordance with [MIL-PRF-23269](#). The following detail shall apply: Dissipation factor: 0.1 percent maximum.

3.6 Moisture resistance (manufacturer eligibility only (see 3.9)). In accordance with [MIL-PRF-23269](#). The following detail shall apply: Dissipation factor: 0.1 percent maximum.

3.7 Life (manufacturer eligibility only (see 3.9)). In accordance with [MIL-PRF-23269](#). The following details shall apply:

- a. ΔCapacitance (240 hours and 2,000 hours): 0.5 percent maximum.
- b. Dissipation factor (240 hours and 2,000 hours): 0.15 percent maximum.

3.8 Marking. In accordance with [MIL-PRF-23269](#), except the capacitor shall be marked with the PIN as specified herein (see 1.2).



3.9 Manufacturer eligibility. To be eligible for listing as an approved source of supply, a manufacturer shall be listed on the [MIL-PRF-23269 Qualified Products Database](#) 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 DLA Land and Maritime-VA.

3.10 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.

3.11 Certificate of compliance. A certificate of compliance shall be required from manufacturers requesting to be an approved source of supply.

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

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 group A inspection of [MIL-PRF-23269](#).

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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TABLE I. Electrical characteristics.

DLA Land and Maritime drawing (PIN) 13005-		Capacitance (pF)	Capacitance tolerance
500 Vdc	100 Vdc		
001	101	220	±1%
002	102	220	±2%
003	103	220	±5%
004	104	240	±1%
005	105	240	±2%
006	106	240	±5%
007	107	270	±1%
008	108	270	±2%
009	109	270	±5%
010	110	300	±1%
011	111	300	±2%
012	112	300	±5%
013	113	330	±1%
014	114	330	±2%
015	115	330	±5%
016	116	360	±1%
017	117	360	±2%
018	118	360	±5%
019	119	390	±1%
020	120	390	±2%
021	121	390	±5%
022	122	430	±1%
023	123	430	±2%
024	124	430	±5%
025	125	470	±1%
026	126	470	±2%
027	127	470	±5%
028	128	510	±1%
029	129	510	±2%
030	130	510	±5%
300 Vdc	100 Vdc		
031	131	560	±1%
032	132	560	±2%
033	133	560	±5%
034	134	620	±1%
035	135	620	±2%
036	136	620	±5%
037	137	680	±1%
038	138	680	±2%
039	139	680	±5%
040	140	750	±1%
041	141	750	±2%
042	142	750	±5%
043	143	820	±1%
044	144	820	±2%
045	145	820	±5%
046	146	910	±1%
047	147	910	±2%
048	148	910	±5%

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TABLE I. Electrical characteristics. – Continued.

DLA Land and Maritime drawing (PIN) 13005-		Capacitance (pF)	Capacitance tolerance
300 Vdc	100 Vdc		
049	149	1,000	±1%
050	150	1,000	±2%
051	151	1,000	±5%
052	152	1,100	±1%
053	153	1,100	±2%
054	154	1,100	±5%
055	155	1,200	±1%
056	156	1,200	±2%
057	157	1,200	±5%

6. NOTES

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

6.1 Intended use. Capacitors 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 OEM application. This drawing is intended exclusively to prevent the proliferation of unnecessary duplicate specifications, drawings, and stock catalog listings. When a military specification exists and the product covered by this drawing has been qualified for listing, this drawing becomes obsolete and will not be used for new design.

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 notification of change of product to the acquiring activity, if applicable.
- d. Requirements for packaging and packing.

6.3 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).

6.4 MIL-PRF-23269/2 replacements. The capacitors described herein are possible replacements for MIL-PRF-23269/2 capacitors. Users are cautioned to evaluate this document for their particular application before citing it as a replacement document. MIL-PRF-23269/2 capacitors have failure rate levels (FRL) established in accordance with MIL-STD-690. DLA Land and Maritime drawing 13005 capacitors are non-established reliability.

TABLE II. Replacement data.

MIL-PRF-23269/2 PIN	DLA Land and Maritime drawing PIN 13005-
-001 through -057 ^{1/}	001 through 057
7001 through 7057	101 through 157

^{1/} The complete MIL-PRF-23269/2 PIN shall include an additional character to indicate the FRL (3, 4, 5, or 6).

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6.5 Replaceability. Capacitors covered by this drawing will replace the same commercial device covered by contractor prepared specification or drawing.

6.6 Changes from previous issue. Not applicable.

6.7 Users of record. Coordination of this document for future revisions is coordinated only with the approved 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: DLA Land and Maritime, ATTN: VAT, Post Office Box 3990, Columbus, OH 43218-3990, by email to capacitorfilter@dla.mil, or by telephone (614) 692-4709 or DSN 850-4709.

6.8 Approved sources of supply. Approved sources of supply are listed herein. Additional sources will be added as they become available. For assistance in the use of this drawing, contact DLA Land and Maritime, ATTN: VAT, Post Office Box 3990, Columbus, OH 43218-3990, by email to capacitorfilter@dla.mil, or by telephone (614) 692-4709 or DSN 850-4709.

<u>Vendor</u>	<u>Vendor CAGE</u>	<u>Vendor name and address</u>	<u>Similar designation</u> ^{1/}
A	16299	AVX Corporation 3900 Electronics Drive Raleigh, NC 27604-1698	ER15 Series

^{1/} Parts must be purchased to the DLA Land and Maritime PIN to assure that all performance requirements and tests are met.

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