REVISIONS			
LTR	**DESCRIPTION**	**DATE**	**APPROVED**
A	Added a ±10% tolerance option.	14 March 2012	Michael A. Radecki

Prepared in accordance with ASME Y14.100

Source control drawing

REV STATUS OF PAGES																		
REV	A	A	A	A	A	A												
PAGES	1	2	3	4	5	6												

PMIC N/A	**PREPARED BY** John Bonitatibus	**DESIGN ACTIVITY** **DLA LAND AND MARITIME** **COLUMBUS, OH 43218-3990**
Original date of drawing 31 January 2012	**CHECKED BY** William E. Sindelar	**TITLE** CAPACITORS, FIXED, GLASS DIELECTRIC, (AXIAL WIRE-LEAD TERMINALS)
	APPROVED BY Michael A. Radecki	
	SIZE **A** / **CODE IDENT. NO.** 037Z3	**DWG NO.** **09020**
	SCALE N/A / **REV** A	**PAGE** 1 **OF** 6

1. SCOPE

1.1 Scope. This drawing describes the requirements for glass dielectric capacitors screened to MIL-PRF-23269.

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

09020	-001
Drawing number	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.daps.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 and table I).

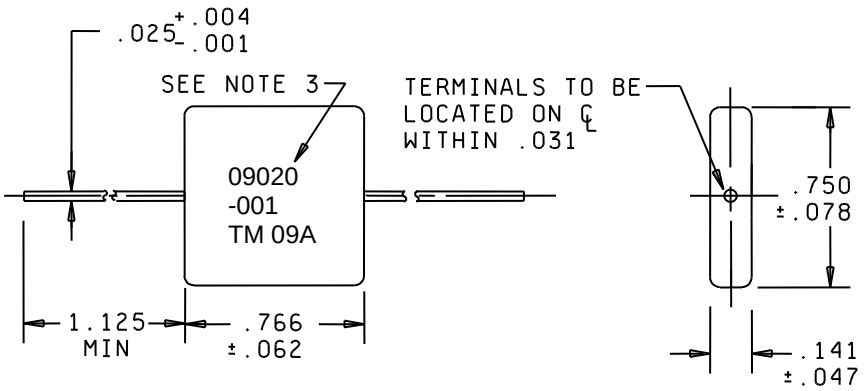
3.1.1 Case material. Glass.

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.



Inches	mm	Inches	mm
.001	0.03	.078	1.98
.004	0.10	.141	3.58
.025	0.64	.750	19.05
.031	0.79	.766	19.46
.047	1.19	1.125	28.58
.062	1.57		

NOTES:
1. Dimensions are in inches.
2. Metric equivalents are given for general information only.
3. See marking requirement.

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.

3.3.6 Insulation resistance (IR). When measured as specified in MIL-PRF-23269, the insulation resistance shall be 100,000 megaohms, 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.

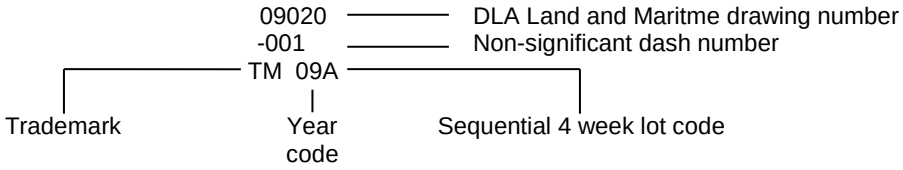
3.6 Moisture resistance (manufacturer eligibility only (see 3.9). In accordance with MIL-PRF-23269. The following detail shall apply: Dissipation factor: 0.1 percent maximum.

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 - VAT.

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.

TABLE I. Electrical characteristics and dash numbers.

Capacitance (nF)	Capacitance tolerance	DLA Land and Maritime Drawing PIN 09020-	
		500 V dc	100 V dc
3.6	±1%	001	101
3.6	±2%	002	102
3.6	±5%	003	103
3.6	±10%	037	137
3.9	±1%	004	104
3.9	±2%	005	105
3.9	±5%	006	106
3.9	±10%	038	138
4.3	±1%	007	107
4.3	±2%	008	108
4.3	±5%	009	109
4.3	±10%	039	139
4.7	±1%	010	110
4.7	±2%	011	111
4.7	±5%	012	112
4.7	±10%	040	140
5.1	±1%	013	113
5.1	±2%	014	114
5.1	±5%	015	115
5.1	±10%	041	141
5.6	±1%	016	116
5.6	±2%	017	117
5.6	±5%	018	118
5.6	±10%	042	142
6.2	±1%	019	119
6.2	±2%	020	120
6.2	±5%	021	121
6.2	±10%	043	143
		300Vdc	100 V dc
6.8	±1%	022	122
6.8	±2%	023	123
6.8	±5%	024	124
6.8	±10%	044	144
7.5	±1%	025	125
7.5	±2%	026	126
7.5	±5%	027	127
7.5	±10%	045	145
8.2	±1%	028	128
8.2	±2%	029	129
8.2	±5%	030	130
8.2	±10%	046	146
9.1	±1%	031	131
9.1	±2%	032	132
9.1	±5%	033	133
9.1	±10%	047	147
10.0	±1%	034	134
10.0	±2%	035	135
10.0	±5%	036	136
10.0	±10%	048	148

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

6.5 Changes from previous issue. The margins of this specification are marked with vertical lines to indicate where changes from the previous issue were made. 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 to the last previous issue.

6.6 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.

6.7 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.

Vendor	Vendor CAGE	Vendor name and address	Similar designation 1/
A	16299	AVX Corporation 3900 Electronics Drive Raleigh, NC 27604-1698	FM30******079192

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