

REVISIONS			
LTR	DESCRIPTION	DATE	APPROVED
A	Added suggested source of supply. Added 1 $\mu$ F at 25 V dc, .065 T maximum. Editorial changes throughout.	16 May 94	D. Moore
B	Page 4 – Revised inspection of product for delivery requirements.	23 May 96	Andrew R. Ernst
C	Page 2 - Added termination finish options. Page 3 - Added footnote for dimensional tolerance change for solder coated parts. Page 4 - Added Voltage Temperature Limit requirements. Changed insulation resistance requirements. Revised marking and workmanship paragraphs. Added environmental and mechanical requirements paragraph. Table I; Changed -05 T max dimension. Page 5 - Incorporated inspection of product for delivery requirements into drawing from MIL-PRF-55681. Page 6 - Added note regarding tin plated finish. Page 7 - Revised sources of supply list. Editorial changes throughout.	2 June 99	Kenneth A. Bernier
D	Added suggested source of supply that was added by letter dated January 15, 1999.	11 August 99	Kendall A. Cottongim
E	Added suggested source of supply.	16 November 00	Kendall A. Cottongim
F	Added suggested source of supply.	5 February 02	Kendall A. Cottongim
G	Page 7 - Corrected vendor E part numbers	7 August '02	Kendall A. Cottongim
H	5 year review. Editorial changes throughout.	22 January 08	Michael A. Radecki

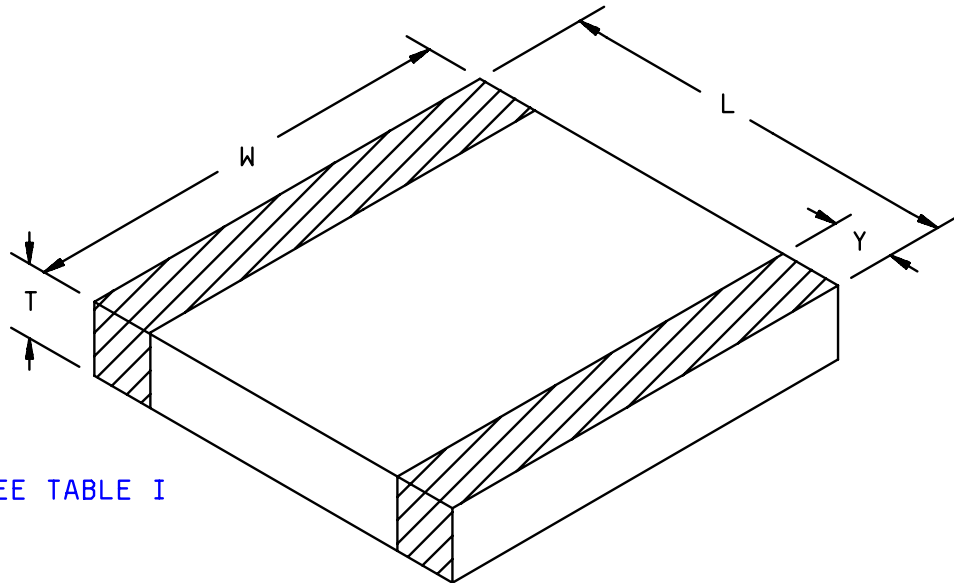
CURRENT DESIGN ACTIVITY CAGE CODE 037Z3  
DEFENSE LOGISTICS AGENCY  
DEFENSE SUPPLY CENTER COLUMBUS  
COLUMBUS, OHIO 43218-3990

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

Source control drawing

REV STATUS OF PAGES	REV	H	H	H	H	H	H	H									
	PAGES	1	2	3	4	5	6	7									
PMIC N/A	PREPARED BY ROBERT GRILLOT							DEFENSE ELECTRONIC SUPPLY CENTER DAYTON, OH									
Original date of drawing 91-09-11	CHECKED BY EDWARD H. BACK							TITLE CAPACITORS, FIXED, CERAMIC, CHIP, .56 $\mu$ F THROUGH 1 $\mu$ F									
	APPROVED BY DAVID E. MOORE							DWG NO. <b>91019</b>									
	SIZE A	CODE IDENT. NO. 14933						PAGE 1 OF 7									
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SEE TABLE I

Dimensions (See note 3)		
L	W	Y
+0.025	+0.010	
-0.010	-0.020	Min
.225	.210	.010

Inches	mm
.010	0.25
.020	0.51
.025	0.64
.210	5.33
.225	5.72

Notes:

1. Dimensions are in inches.
2. Metric equivalents are given for general information only.
3. For solder coated parts an additional +.025 to the length and width tolerance is allowed. An additional +.020 tolerance is allowed on the thickness (see [table I](#)).

FIGURE 1. Case dimensions and configuration.

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3.2 Electrical characteristics.

3.2.1 Rated voltage. The rated voltage shall be in accordance with table I.

3.2.2 Dielectric type. The dielectric type shall be ceramic.

3.2.3 Temperature coefficient and voltage temperature limits (VTL). The temperature coefficient shall be 0 ±15 percent (-55°C to +125°C) and shall meet the VTL requirements of characteristic BR of MIL-PRF-55681.

3.2.4 Operating frequency. Operating frequency shall be up to 50 GHz.

3.2.5 Capacitance. See table I. Measured in accordance with method 305 of MIL-STD-202, 1 kHz at 1.0 V rms ±0.2 V rms at +25°C.

3.2.6 Dissipation factor (+25°C). 2.5 percent maximum (measured under the same conditions as capacitance).

3.2.7 Insulation resistance. Measured in accordance with method 302 of MIL-STD-202 at rated voltage.

At +25°C: 100,000 megohms or 1,000 megohm-microfarads, whichever is less.

At +125°C: 10,000 megohms or 100 megohm-microfarads, whichever is less.

3.2.8 Dielectric withstanding voltage. 2.0 times rated voltage.

3.2.9 Capacitance tolerance. K = ±10 percent.

3.3 Environmental and mechanical requirements. The environmental and mechanical requirements shall be in accordance with MIL-PRF-55681.

3.4 Marking. Capacitors may be marked with the PIN as specified in 1.2, but are not required to be marked. Marking shall be on the package and 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.

3.5 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.

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

3.7 Workmanship. Capacitors shall be so processed that when inspected under 20X to 40X magnification, they shall be uniform in quality and shall be free from pits, cracks, rough edges, adhered foreign material, and other defects which will affect life or serviceability. The capacitors shall exhibit no delamination (separation in the layers of ceramic) or demetallization (lift-off) on the terminations.

TABLE I. Electrical characteristics

DSCC drawing 91019- 1/	Capacitance μF	Capacitance tolerance	WV dc	T Max
01-	.56	K	50	.065
02-	.68	K	50	.065
03-	.82	K	50	.090
04-	1.0	K	50	.090
05-	1.0	K	25	.070

1/ Complete PIN shall include an additional symbol to indicate termination finish where applicable (see 1.2).

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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 groups A and B inspections of this drawing (see tables II and III herein).

4.2.2 Certification. The procuring activity, at its discretion, may accept a certificate of compliance for group B requirements in lieu of performing group B tests (see 6.3f).

TABLE II. Group A Inspection.

Inspection	Requirement paragraph of MIL-PRF-55681	Test method paragraph of MIL-PRF-55681	Sampling Procedure
<u>Subgroup 1</u> Voltage conditioning	3.6	4.8.3	100 percent inspection
<u>Subgroup 2</u> IR (at 125°C) Visual and mechanical examination	3.9 3.1, 3.4, 3.5, 3.5.1, 3.24 through 3.26 inclusive	4.8.6 4.8.2	Table X, column A of MIL-PRF-55681 Table X, column B of MIL-PRF-55681
<u>Subgroup 3</u> Solderability	3.13	4.8.10	13 samples/0 failures allowed
<u>Subgroup 4</u> Voltage-temperature limits	3.14 (and 3.2.3 herein)	4.8.11	13 samples/ 0 failures allowed

TABLE III. Group B inspection.

Inspection	Requirement paragraph of MIL-PRF-55681	Test method paragraph of MIL-PRF-55681	Number of Sample units to be inspected	Number of defectives permitted
<u>Subgroup 1</u> Thermal shock and immersion	3.15	4.8.12	12	0
<u>Subgroup 2</u> Resistance to soldering heat Moisture resistance	3.16 3.17	4.8.13 4.8.14	12	0
<u>Subgroup 3</u> Life (at 125°C)	3.19	4.8.16	25	0
<u>Subgroup 4</u> Humidity, steady state, low voltage	3.18	4.8.15	12	0

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## 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.

## 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 original equipment manufacturer 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 Tin plated finish (termination finish Y). [MIL-PRF-55681](#) capacitors have not historically had a problem with tin whisker growth. However, tin whisker growth could adversely affect the operation of electronic equipment systems. For additional information, see [ASTM B545](#), "Standard Specification for Electrodeposited Coating of Tin".

6.3 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.
- d. Title, number, and date of the specification.
- e. Whether the manufacturer performs the group B tests or provides certification of compliance for group B requirements.
- f. Requirements for notification of change of product to procuring activity, if applicable.

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

6.5 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 may be achieved online at [capacitorfilter@dla.mil](mailto:capacitorfilter@dla.mil) or if in writing to: Defense Supply Center, Columbus, ATTN: DSCC/VAT, Post Office Box 3990, Columbus, OH 43218-3990 or by telephone (614) 692-4709 or DSN 850-4709.

6.6 Approved sources of supply. Approved sources of supply are listed herein. Additional sources will be added as they become available. Assistance in the use of this drawing may be obtained online at [capacitorfilter@dla.mil](mailto:capacitorfilter@dla.mil), or by contacting Defense Supply Center, Columbus, ATTN: DSCC-VAT, Post Office Box 3990, Columbus, OH 43218-3990 or by telephone (614) 692-4709 or DSN 850-4709.

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DSCC drawing PIN 91019-	Vendor A similar vendor type <u>1/</u>	Vendor B Similar vendor type <u>1/</u>	Vendor C similar vendor type <u>1/</u>	Vendor D similar vendor type <u>1/</u>	Vendor E similar vendor type <u>1/</u>	Vendor F similar vendor type <u>1/</u>
01	PCI1562-01	500S47W564K*4H	C2220E564K5XAH	2221E564KU	22205C564KH*9C	CG2220BR564KWB
02	PCI1562-02	500S47W684K*4H	C2220E684K5XAH	2221E684KU	22205C684KH*9C	CG2220BR684KWB
03	PCI1562-03	500S47W824K*4H	C2220E824K5XAH	2221E824KU	22205C824KH*93	CG2220BR824KWB
04	PCI1562-04	500S47W105K*4H	C2220E105K5XAH	2221E105KU	22205C105KH*93	CG2220BR105KWB
05	PCI1562-05	250S47W105K*4H	C2220E105K3XAH	2221E105KU25V	22203C105KH*9Q	CL2220BR105KWB

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

<u>Vendor</u>	<u>Vendor CAGE</u>	<u>Vendor name and address</u>
A	60212	Presidio Components Incorporated 7169 Construction Court San Diego, CA 92121-2615
B	29454	Johanson Dielectric 15191 Bledsoe Street Sylmar, CA 91342-2700
C	31433	Kemet Electronics Corporation P.O. Box 5928 Greenville, SC 29606-5928 Plant: Periferico Alianza Y Jose Arrese #10 Matamoros Tamaulipas, Mexico 87340
D	0LR95	Spectrum Control Technology, Inc. 1900 West College Avenue State College, PA 16801
E	96095	Olean Advanced Products A Division of AVX Corporation 1695 Seneca Avenue Olean, NY 14760-3736
F	0YBX7	Union Technology Corporation 718 Monterey Pass Road Monterey Park, CA 91754-3607

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