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** **DEFENSE SUPPLY CENTER, COLUMBUS** **COLUMBUS, OH**
Original date of drawing 17 February 2009	**CHECKED BY** Patrick Kyne	**TITLE** CAPACITORS, FIXED, METALLIZED PLASTIC DIELECTRIC, DC, IN NONMETAL CASES
	APPROVED BY Michael A. Radecki	
	SIZE A / **CODE IDENT. NO.** 037Z3	**DWG NO.** 09007
	REV	**PAGE** 1 **OF** 7

AMSC N/A

5910-E423

1. SCOPE

1.1 Scope. This drawing describes the requirements for metallized polycarbonate capacitors screened to MIL-PRF-55514.

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

09007	-001	K
Drawing number	Dash number (see table I)	Capacitance tolerance (see 3.2.4)

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-55514	-	Capacitors, Fixed, Plastic (or Metallized Plastic) Dielectric, DC or DC-AC, In Non-Metal Cases, Non-Established Reliability and Established Reliability, General Specification for.

(Copies of these documents are available online at http://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

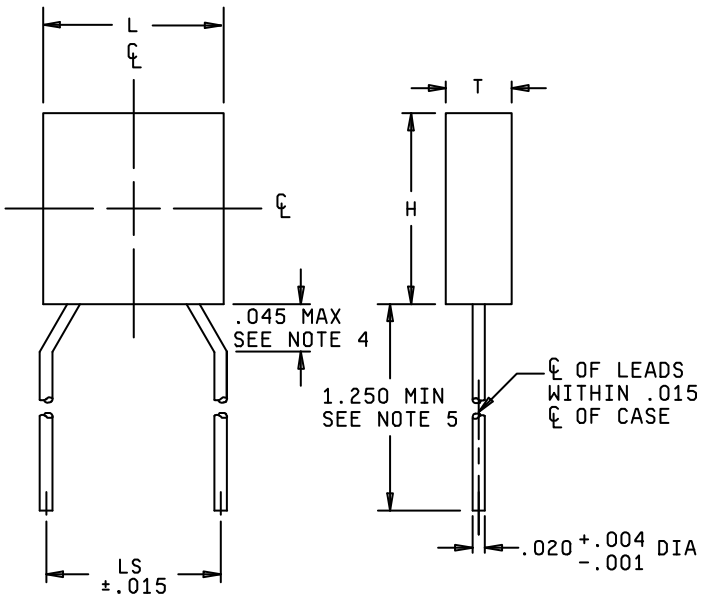
3.1 Interface and physical dimensions. The interface and physical dimensions shall be as specified in MIL-PRF-55514 and herein (see figure 1 and table I).

3.1.1 Case type. Molded or preformed.

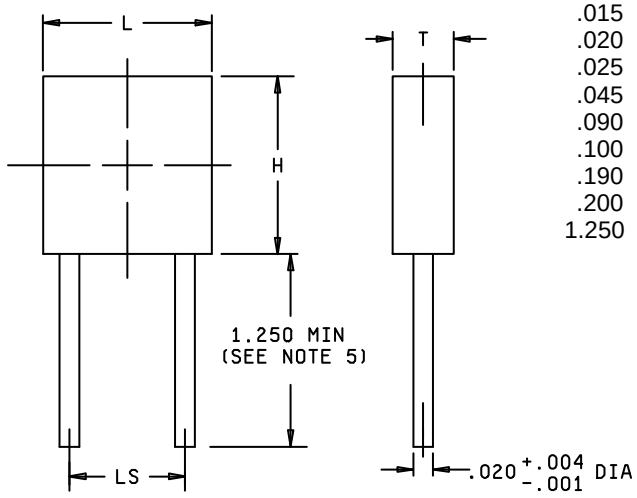
3.1.2 Pure tin. The use of pure tin, as an underplate or final finish is prohibited both internally and externally. Tin content of capacitor components and solder shall not exceed 97 percent, by mass. Tin shall be alloyed with a minimum of 3 percent lead, by mass (see 6.3).

3.1.3 Operating temperature range. The operating temperature range shall be -55°C to +85°C. Will operate to +125°C when properly derated to 50 percent of +85°C rated voltage.

Style “A”



Style “B”



Inches	mm
.001	0.03
.004	0.10
.015	0.38
.020	0.51
.025	0.64
.045	1.14
.090	2.29
.100	2.54
.190	4.83
.200	5.08
1.250	31.75

NOTES:
1. Dimensions are in inches.
2. Metric equivalents are given for general information.
3. Unless otherwise specified, tolerance is ±.010 inch (0.25 mm).
4. For flush mounting .078 inch (1.98 mm) printed-circuit hole diameter is required to clear shoulder.
5. Lead length may be a minimum of one inch (25.4 mm) long for use in tape and reel packaging, when specified in the ordering data.

FIGURE 1. Dimensions and configuration.

3.2 Electrical characteristics.

3.2.1 Rated voltage. See table I for +85°C ratings. For +125°C operation, linearly derate +85°C rating by 50 percent.

3.2.2 Dielectric type. Metallized polycarbonate.

3.2.3 Dielectric withstanding voltage (DWV). In accordance with MIL-PRF-55514, except the surge current shall be limited to 1 ampere, maximum.

3.2.4 Capacitance tolerance (see table I). F = ±1 percent, G = ±2 percent, J = ±5 percent, and K = ±10 percent.

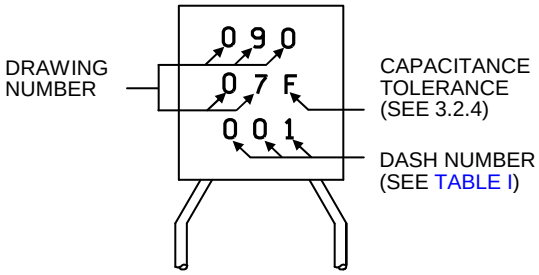
3.2.5 Dissipation factor (DF). In accordance with MIL-PRF-55514, except dissipation factor shall not exceed .3 percent.

3.3 Preconditioning. Not applicable.

3.4 Burn-in. In accordance with MIL-PRF-55514, except DC: 48 hours at +125°C at 1.4 times the derated +125°C dc voltage rating. The current to each capacitor shall be limited to 1 ampere maximum by a series resistor. AC: not applicable.

3.5 Resistance to soldering heat. In accordance with MIL-PRF-55514, except that spacers or standoffs of .25 inch (6.4 mm) are required.

3.6 Marking. In accordance with MIL-PRF-55514, except the capacitor shall be marked with the PIN as specified herein (see 1.2), the manufacturer's symbol or Commercial and Government Entity (CAGE) code, and date lot codes. Minimum marking as shown in the following example will be permitted. Full marking shall be included on the package.



Note: Manufacturer's symbol or CAGE code, date code and lot symbol in accordance with MIL-PRF-55514 shall be marked on the reverse side.

3.7 Manufacturer eligibility. To be eligible for listing as an approved source of supply, a manufacturer shall be listed on the MIL-PRF-55514 Qualified Products Database for at least one part, or perform the group A and group B inspections specified herein on a sample of parts agreed upon by the manufacturer and DSCC-VA.

3.8 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.

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

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

TABLE I. Electrical characteristics and dimensions.

DSCC Drawing 09007- 1/	Capacitance Value in µF	Rated voltage at +85°C in volts	Capacitance Tolerance (see 3.2.4)	Dimensions 2/			
				T	H	L	LS
Style "A" 3/							
001-	.033	50	F, G, J, K	.090 (2.29)	.200 (5.08)	.190 (4.83)	.200 (5.08)
002-	.039	50	F, G, J, K	.090 (2.29)	.200 (5.08)	.190 (4.83)	.200 (5.08)
003-	.047	50	F, G, J, K	.090 (2.29)	.200 (5.08)	.190 (4.83)	.200 (5.08)
004-	.056	50	F, G, J, K	.090 (2.29)	.200 (5.08)	.190 (4.83)	.200 (5.08)
005-	.022	75	F, G, J, K	.090 (2.29)	.200 (5.08)	.190 (4.83)	.200 (5.08)
006-	.027	75	F, G, J, K	.090 (2.29)	.200 (5.08)	.190 (4.83)	.200 (5.08)
007-	.01	100	F, G, J, K	.090 (2.29)	.200 (5.08)	.190 (4.83)	.200 (5.08)
008-	.012	100	F, G, J, K	.090 (2.29)	.200 (5.08)	.190 (4.83)	.200 (5.08)
009-	.015	100	F, G, J, K	.090 (2.29)	.200 (5.08)	.190 (4.83)	.200 (5.08)
010-	.018	100	F, G, J, K	.090 (2.29)	.200 (5.08)	.190 (4.83)	.200 (5.08)
011-	.0068	150	F, G, J, K	.090 (2.29)	.200 (5.08)	.190 (4.83)	.200 (5.08)
012-	.0082	150	F, G, J, K	.090 (2.29)	.200 (5.08)	.190 (4.83)	.200 (5.08)
013-	.0039	200	F, G, J, K	.090 (2.29)	.200 (5.08)	.190 (4.83)	.200 (5.08)
014-	.0047	200	F, G, J, K	.090 (2.29)	.200 (5.08)	.190 (4.83)	.200 (5.08)
015-	.0056	200	F, G, J, K	.090 (2.29)	.200 (5.08)	.190 (4.83)	.200 (5.08)
016-	.001	250	F, G, J, K	.090 (2.29)	.200 (5.08)	.190 (4.83)	.200 (5.08)
017-	.0012	250	F, G, J, K	.090 (2.29)	.200 (5.08)	.190 (4.83)	.200 (5.08)
018-	.0015	250	F, G, J, K	.090 (2.29)	.200 (5.08)	.190 (4.83)	.200 (5.08)
019-	.0018	250	F, G, J, K	.090 (2.29)	.200 (5.08)	.190 (4.83)	.200 (5.08)
020-	.0022	250	F, G, J, K	.090 (2.29)	.200 (5.08)	.190 (4.83)	.200 (5.08)
021-	.0027	250	F, G, J, K	.090 (2.29)	.200 (5.08)	.190 (4.83)	.200 (5.08)
022-	.0033	250	F, G, J, K	.090 (2.29)	.200 (5.08)	.190 (4.83)	.200 (5.08)
Style "B"							
023-	.068	50	F, G, J, K	.095 (2.41)	.245 (6.22)	.295 (7.49)	.200 (5.08)
024-	.082	50	F, G, J, K	.095 (2.41)	.245 (6.22)	.295 (7.49)	.200 (5.08)
025-	.10	50	F, G, J, K	.095 (2.41)	.245 (6.22)	.295 (7.49)	.200 (5.08)
026-	.12	50	F, G, J, K	.095 (2.41)	.295 (7.49)	.295 (7.49)	.200 (5.08)
027-	.15	50	F, G, J, K	.095 (2.41)	.295 (7.49)	.295 (7.49)	.200 (5.08)
028-	.18	50	F, G, J, K	.095 (2.41)	.295 (7.49)	.295 (7.49)	.200 (5.08)
029-	.22	50	F, G, J, K	.095 (2.41)	.395 (10.03)	.395 (10.03)	.300 (7.62)
030-	.27	50	F, G, J, K	.095 (2.41)	.395 (10.03)	.395 (10.03)	.300 (7.62)
031-	.33	50	F, G, J, K	.095 (2.41)	.395 (10.03)	.395 (10.03)	.300 (7.62)
032-	.39	50	F, G, J, K	.095 (2.41)	.395 (10.03)	.395 (10.03)	.300 (7.62)
033-	.47	50	F, G, J, K	.145 (3.68)	.395 (10.03)	.395 (10.03)	.300 (7.62)
034-	.56	50	F, G, J, K	.145 (3.68)	.395 (10.03)	.395 (10.03)	.300 (7.62)
035-	.78	50	F, G, J, K	.195 (4.95)	.395 (10.03)	.395 (10.03)	.300 (7.62)
036-	.82	50	F, G, J, K	.195 (4.95)	.395 (10.03)	.395 (10.03)	.300 (7.62)
037-	1.00	50	F, G, J, K	.195 (4.95)	.395 (10.03)	.395 (10.03)	.300 (7.62)

1/ The complete PIN will include an additional symbol to indicate capacitance tolerance (see 1.2).
2/ Metric equivalents are in parentheses and are for general information only.
3/ Care must be taken during wave soldering to assure that style A capacitors are not damaged due to overheating. During the wave soldering operation, the style A capacitors shall not be exposed to conditions in excess of the resistance to soldering heat requirements of MIL-PRF-55514.

4. VERIFICATION

4.1 Conformance inspection.

4.1.1 Inspection of product for delivery. Inspection of product for delivery shall consist of the group A inspection of MIL-PRF-55514. Group B inspection of MIL-PRF-55514 shall be performed when specified on the purchase order (see 6.2c).

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 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 group B testing (see 4.1.1).

d. Requirements for notification of change of product to the acquiring activity, if applicable.

e. 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 Soldering. These capacitors are heat sensitive. Vapor phase soldering is not recommended. For applications that require wave soldering that exceeds 5 seconds in duration, it is recommended that a spacer or standoff be used.

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

6.6 Cross reference to MIL-PRF-55514/8. This drawing replaces MIL-PRF-55514/8. Cross references are listed in table II.

TABLE II. DSCC Drawing 09007 PIN to MIL-PRF-55514/8 PIN cross reference.

DSCC Drawing 09007- 1/	MIL-PRF-55514/8 2/	DSCC Drawing 09007- 1/	MIL-PRF-55514/8 2/
001-	CFR12RRA333--	023-	CFR16RRA683--
002-	CFR12RRA393--	024-	CFR16RRA823--
003-	CFR12RRA473--	025-	CFR16RRA104--
004-	CFR12RRA563--	026-	CFR16RRA124--
005-	CFR12RRG223--	027-	CFR16RRA154--
006-	CFR12RRG273--	028-	CFR16RRA184--
007-	CFR12RRB103--	029-	CFR16RRA224--
008-	CFR12RRB123--	030-	CFR16RRA274--
009-	CFR12RRB153--	031-	CFR16RRA334--
010-	CFR12RRB183--	032-	CFR16RRA394--
011-	CFR12RRH682--	033-	CFR16RRA474--
012-	CFR12RRH822--	034-	CFR16RRA564--
013-	CFR12RRC392--	035-	CFR16RRA684--
014-	CFR12RRC472--	036-	CFR16RRA824--
015-	CFR12RRC562--	037-	CFR16RRA105--
016-	CFR12RRK102--		
017-	CFR12RRK122--		
018-	CFR12RRK152--		
019-	CFR12RRK182--		
020-	CFR12RRK222--		
021-	CFR12RRK272--		
022-	CFR12RRK332--		

1/ The complete PIN will include an additional symbol to indicate capacitance tolerance (F, G, J, or K) (see 1.2).
2/ The complete PIN will include additional symbols to indicate capacitance tolerance (F, G, J, or K) and product level (C, M, P, R, or S).

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: Defense Supply Center, Columbus, ATTN: DSCC-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 Defense Supply Center, Columbus, ATTN: DSCC-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	50558	Electronic Concepts, Inc. 526 Industrial Way West Eatontown, NJ 07724-2212 Plant locations: 1. Same as above. 2. Electronic Concepts of Europe, Ltd. Oughterard, Co. Galway, Ireland	Same as drawing PIN

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