

REVISIONS			
LT	DESCRIPTION	DATE	APPROVED
A	Page 8 - Added caution note concerning soldering temperature. Deleted one source and added a new source of supply.	7 Aug 90	D. Moore
B	Inactivated drawing. Added supersession data.	9 Jan 91	D. Moore
C	Page 5 - Table I; insertion loss changes	29 Oct 97	W. Sindelar
D	Removed a source of supply. Editorial changes	25 Apr 01	K. A. Cottongim

This drawing is inactive for design as of 9 January 1991. For new design use MIL-PRF-28861/12. See 6.6 for supersession data.

PREVIOUS CAGE CODE 14933 SUPERSEDED BY 037Z3.
THE ORIGINAL FIRST PAGE OF THIS DRAWING HAS BEEN REPLACED.

Prepared in accordance with MIL-STD-100

Selected item drawing

REV STATUS OF PAGES	REV	D	D	D	D	D	D	D	D									
	PAGES	1	2	3	4	5	6	7	8									

PMIC N/A	PREPARED BY PATRICK G. KYNE		DEFENSE SUPPLY CENTER, COLUMBUS COLUMBUS, OH															
Original date of drawing 4 January 1988	CHECKED BY EDWARD H. BACK		TITLE FILTERS AND CAPACITORS, RADIO FREQUENCY/ ELECTROMAGNETIC INTERFERENCE SUPPRESSION, HERMETICALLY SEALED ON ONE END ONLY															
	APPROVED BY DAVID W. WITHROW																	
	SIZE A	CODE IDENT. NO. 14933	DWG NO. 88010															
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3.1.4 Weight. The weight shall be as follows:

For C circuit parts - .25 gram, maximum.
For L circuit parts - .75 gram, maximum.

3.2 Operating temperature range. The operating temperature range shall be -55°C to +150°C.

3.3 Temperature rise. The temperature rise shall be +25°C maximum.

3.4 Electrical characteristics.

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

3.4.2 Rated current. The rated current shall be 5 amperes maximum.

3.4.3 Rated frequency. The rated frequency shall be dc.

3.4.4 Capacitance. Capacitance shall be in accordance with table I.

3.4.5 Voltage and temperature limits of capacitance. Voltage and temperature limits of capacitance shall be +15, -40 percent.

3.4.6 Insulation resistance. Insulation resistance shall be as follows:

At +25°C: 1,000 megohm-microfarads or 100,000 megohms minimum, whichever is less.
At +125°C: 100 megohm-microfarads or 10,000 megohms minimum, whichever is less.

3.4.7 Insertion loss. Insertion loss shall be as follows:

At +25°C: In accordance with table I.
At -55°C and +150°C: A 3 dB degradation from the +25°C value shall be allowed.

3.4.8 Voltage drop. Voltage drop shall be .05 V dc.

3.4.9 DC resistance. DC resistance shall be 0.01 ohm, maximum.

3.4.10 Seal. Not applicable.

3.4.11 Solderability of terminals. Solderability of terminals shall be in accordance with MIL-PRF-28861, except temperature of solder shall be +300°C ± 5°C.

3.4.12 Resistance to soldering heat. Resistance to soldering heat shall be in accordance with MIL-PRF-28861, except temperature of solder shall be +300°C ± 5°C.

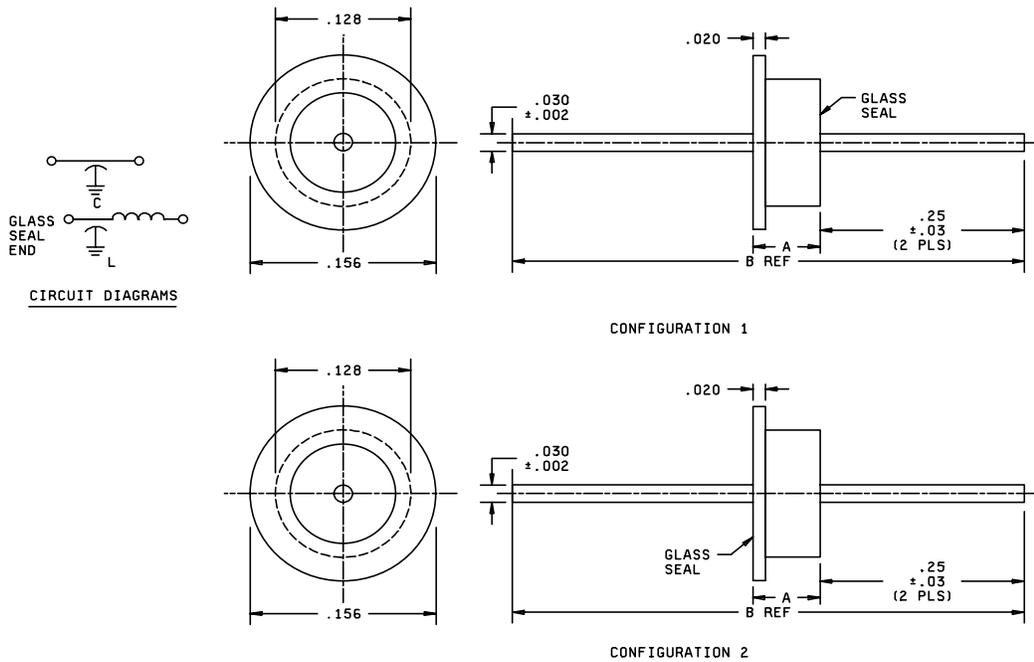
3.4.13 Solderability of mounting termination. Solderability of mounting termination shall be in accordance with MIL-PRF-28861, except temperature of solder shall be +300°C ± 5°C.

3.5 Product assurance level. Class B only.

3.6 Marking. Filters and capacitors shall not be marked. The unit package shall be marked in accordance with MIL-STD-1285, except the part number shall be as specified in 1.2 with the manufacturer's name or code, date code, voltage rating, and current rating.

3.7 Manufacturer eligibility. To be eligible for listing as a suggested source of supply, a manufacturer shall be listed on the MIL-PRF-28861 Qualified Products List for at least one part or, perform first article inspection in accordance with the MIL-PRF-28861 qualification inspection requirements for class B.

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Inches	mm
.002	0.05
.005	0.13
.020	0.51
.030	0.76
.03	0.80
.110	2.79
.128	3.25
.156	3.96
.200	5.08
.25	6.40
.625	15.88
.715	18.16

Circuit diagram	Dimensions	
	A ±.005	B Ref
L	.200	.715
C	.110	.625

Dash No.	Configuration
001 through 0016 033 and 034	1
017 through 032 035 and 036	2

NOTES:

1. Dimensions are in inches.
2. Metric equivalents are given for general information only.
3. Unless otherwise specified, tolerance is ± 0.005 .
4. Circuit diagram is for information only.
5. Filters shall be supplied with 60/40 solder preform.
6. Potting on nonhermetically sealed end shall not extend beyond .030 inch from the filter body.
7. Filters shall be installed using the recommended installation methods in 6.5.1.3 (solder-in style paragraph) of MIL-PRF-28861.

FIGURE 1. Circuit diagrams and case and hardware dimensions.

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TABLE I. Electrical characteristics.

Dash Number	Circuit	Rated voltage volts dc	Capacitance (pF) -0, +100 percent	Minimum insertion loss (dB) in accordance with MIL-STD-220 <u>1/</u> <u>2/</u>					Minimum insertion loss at resonant frequency <u>3/</u>
				1 Mhz	10 Mhz	100 Mhz	1 Ghz	10 Ghz	
001, 017 002, 018	L C	50 50	15,000 15,000	7 7	25 25	42 40	50 50	60 60	35dB 100Mhz-1Ghz
003, 019 004, 020	L C	100 100	2,700 2,700	--- ---	10 10	25 25	37 37	60 60	-----
005, 021 006, 022	L C	100 100	5,000 5,000	--- ---	15 15	30 30	43 43	60 60	-----
007, 023 008, 024	L C	200 200	10 10	--- ---	--- ---	--- ---	5 4	10 10	-----
009, 025 010, 026	L C	200 200	25 25	--- ---	--- ---	--- ---	10 10	15 15	5dB 1Ghz-10Ghz
011, 027 012, 028	L C	200 200	100 100	--- ---	--- ---	3 3	20 20	30 30	10dB 1Ghz -10Ghz
013, 029 014, 030	L C	200 200	500 500	--- ---	--- ---	15 15	30 30	40 40	28dB 1Ghz-10Ghz
015, 031 016, 032	L C	200 200	1,000 1,000	--- ---	4 4	20 20	33 31	55 55	25dB 1Ghz-10Ghz
033, 035 034, 036	L C	50 50	10,000 10,000	4 4	20 20	38 35	50 48	60 60	35dB 100Mhz-1Ghz

1/ For C circuits, insertion loss measurements shall be made under no load. For L circuits, insertion loss measurements shall be made under full load over the frequency range of 1 Mhz to 10 Mhz. Insertion loss measurements above this frequency range shall be made under no load.

2/ Except as specified in 3/, the insertion loss requirements between any two adjacent specified frequencies shall be that of the lower of the two frequencies in order to accommodate resonant dips.

3/ The frequency range in which the resonant frequency dip will occur and the minimum insertion loss at the resonant frequency.

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 Workmanship. Filters and capacitors shall be processed in such a manner as to be uniform in quality and shall be free from cold soldering, corrosion, pits, dents, cracks, rough sharp edges, misalignments, and other defects that will affect life, serviceability, or appearance. Cracks in glass seals are not allowed, however, minor meniscus crazing is acceptable.

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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 MIL-PRF-28861 for class B.

4.2.2 Certification. The acquiring activity, at its discretion, may accept a certification of compliance with group B requirements in lieu of performing group B tests (see 6.2c).

4.2.3 Inspection of packaging. Inspection of packaging shall be in accordance with MIL-PRF-28861.

5. PACKAGING

5.1 Packaging requirements. For acquisition purposes, the packaging requirements shall be as specified in the contract or order (see 6.2). When actual packaging of materiel is to be performed by DoD personnel, these personnel need to contact the responsible packaging activity to ascertain requisite packaging requirements. Packaging requirements are maintained by the Inventory Control Point's packaging activity within the Military Department or Defense Agency, or within the Military Department's System Command. 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

6.1 Intended use. Filters 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 on QPL-28861, this drawing becomes obsolete and will not be used for new design. The QPL-28861 product shall be the preferred item for all applications.

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 quality conformance inspection data with each shipment of parts by the manufacturer.
- c. Whether the manufacturer performs the group B tests or provides certification of compliance with group B requirements.
- d. Requirements for notification of change of product to acquiring activity, if applicable.
- e. Issue of the DoDISS to be cited in the solicitation, and if required, the specific issue of individual documents referenced (see 2.1.1).
- f. Requirements for packaging and packing.

6.3 Soldering temperature. Caution: These devices should not be exposed to soldering temperatures exceeding 300°C. Exposure time to soldering temperature of 300°C should not exceed one minute.

6.4 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 DSCC-VAT, Post Office Box 3990, Columbus, OH 43216-5000 or by telephone (614) 692-0562 or DSN 850-0562.

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

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6.6 Supersession data. For new design, use MIL-PRF-28861/12. See table II for part supersession data.

Table II. Part supersession data.

DSCC drawing PIN 88010-	Superseding PIN M28861/12-
001	001GB
002	002GB
003	003GB
004	004GB
005	005GB
006	006GB
007	007GB
008	008GB
009	009GB
010	010GB
011	011GB
012	012GB
013	013GB
014	014GB
015	015GB
016	016GB
017	017GB
018	018GB
019	019GB
020	020GB
021	021GB
022	022GB
023	023GB
024	024GB
025	025GB
026	026GB
027	027GB
028	028GB
029	029GB
030	030GB
031	031GB
032	032GB
033	033GB
034	034GB
035	035GB
036	036GB

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6.7 Suggested sources of supply. 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 DSCC-VAT, Post Office Box 3990, Columbus, OH 43216-5000, or telephone (614) 692-0562.

DSCC drawing PIN 88010-	Vendor similar designation or type number 1/	Vendor CAGE
001	ZS2C2-153HAA	59942
002	ZS1C2-153HAA	59942
003	ZS2A2-272HAA	59942
004	ZS1A2-272HAA	59942
005	ZS2A2-502HAA	59942
006	ZS1A2-502HAA	59942
007	ZS2B2-100HAA	59942
008	ZS1B2-100HAA	59942
009	ZS2B2-250HAA	59942
010	ZS1B2-250HAA	59942
011	ZS2B2-101HAA	59942
012	ZS1B2-101HAA	59942
013	ZS2B2-501HAA	59942
014	ZS1B2-501HAA	59942
015	ZS2B2-102HAA	59942
016	ZS1B2-102HAA	59942
017	ZR2C2-153HAA	59942
018	ZR1C2-153HAA	59942
019	ZR2A2-272HAA	59942
020	ZR1A2-272HAA	59942
021	ZR2A2-502HAA	59942
022	ZR1A2-502HAA	59942
023	ZR2B2-100HAA	59942
024	ZR1B2-100HAA	59942
025	ZR2B2-250HAA	59942
026	ZR1B2-250HAA	59942
027	ZR2B2-101HAA	59942
028	ZR1B2-101HAA	59942
029	ZR2B2-501HAA	59942
030	ZR1B2-501HAA	59942
031	ZR2B2-102HAA	59942
032	ZR1B2-102HAA	59942
033	ZS2C2-103HAA	59942
034	ZS1C2-103HAA	59942
035	ZR2C2-103HAA	59942
036	ZR1C2-103HAA	59942

1/ Caution: Do not use this number for item acquisition.
Items acquired to this number may not satisfy the
performance requirements of this drawing.

Vendor CAGE

59942

Vendor name and address

AVX Filters
11144 Penrose Street
Unit 5
Sun Valley, CA 91352-2756

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