INCH-POUND

MIL-PRF-28861/5C W/Amendment 1 23 January 2009 SUPERSEDING MIL-PRF-28861/5C 10 February 2003

## PERFORMANCE SPECIFICATION SHEET

# FILTERS, RADIO FREQUENCY/ELECTROMAGNETIC INTERFERENCE SUPPRESSION, HERMETICALLY SEALED, STYLE FS50

This specification is approved for use by all Departments and Agencies of the Department of Defense.

The requirements for acquiring the product described herein shall consist of this specification sheet and MIL-PRF-28861.

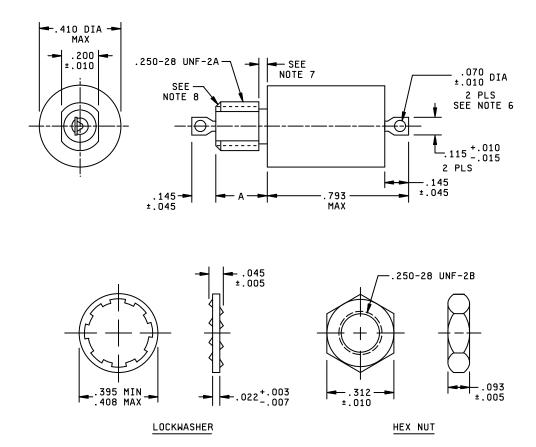
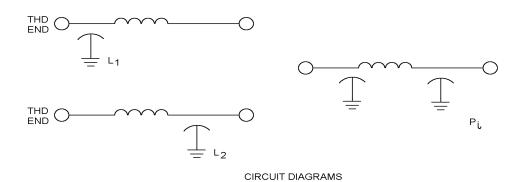


FIGURE 1. Case and hardware dimensions and circuit diagrams.

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	Α
Dash	dimension
number	(±.010)
001	
through	.187
012	
013	
through	.312
024	

Inches	mm	Inches	mm
.003	0.08	.145	3.68
.005	0.13	.187	4.75
.007	0.18	.200	5.08
.010	0.25	.250	6.35
.015	0.38	.312	7.92
.022	0.56	.395	10.03
.045	1.14	.408	10.36
.070	1.78	.410	10.41
.093	2.36	.793	20.14
.115	2.92		

## NOTES:

- 1. Dimensions are in inches.
- 2. Metric equivalents are given for general information only.
- 3. Circuit diagrams are for information only.
- 4. All filters shall be supplied with mounting hardware (hex nut and lockwasher). Mounting hardware shall be furnished with the same finish as the filter case.
- 5. Terminal identification (nonsymmetrical filters): The case shall be marked at the threaded end of the filter with the symbol "C" or the symbol "L" as follows, or the circuit diagram shall be marked on the case.

 $\begin{tabular}{lll} Circuit & Symbol \\ L_1 & C \\ L_2 & L \end{tabular}$ 

- 6. Optional slot may be supplied,  $.050 \pm .010$  inches  $(1.27 \pm 0.25 \text{ mm}) \times .070 \pm .010$  inches  $(1.78 \pm 0.25 \text{ mm})$ .
- 7. Imperfect thread or undercut optional .050 inch (1.27 mm) maximum.
- 8. One imperfect thread allowed .035 inch (0.89 mm) maximum.
- 9. Recommended mounting torque: 44 inch-ounces  $\pm$  4 inch-ounces.

FIGURE 1. Case and hardware dimensions and circuit diagram - Continued.

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#### **REQUIREMENTS:**

Design and construction:

Dimensions and configuration: See figure 1.

Weight: 10 grams maximum.

Case finish: T, S, or G in accordance with MIL-PRF-28861 (pure tin finish is prohibited).

Mounting hardware: Shall be furnished with the same finish as the filter case (pure tin finish is prohibited).

Terminals: Solderable.

Operating temperature range: -55°C to +125°C.

Rated voltage: 200 V dc/125 V ac, 0 to 400 Hz.

Rated current: See table I.

Capacitance: See table I for minimum capacitance value.

Dissipation factor: 3 percent maximum.

Voltage and temperature limits of capacitance: +15 percent, -40 percent.

Insulation resistance:

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

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

Insertion loss: See table I.

Voltage drop: See table I.

DC resistance: See table I.

Seal: In accordance with MIL-PRF-28861. Leakage rate for class S filters shall not exceed 1 x 10<sup>-7</sup> atm cm<sup>3</sup>/s.

Temperature rise: +25°C maximum.

Solderability of terminals: In accordance with MIL-PRF-28861.

Product assurance level: In accordance with MIL-PRF-28861 and table I.

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

TABLE I. Electrical characteristics.

	Pro	Product		Maxi-	Capaci-	Maxi-	Maxi-														
Dash	assni	assurance	Cịr.	mnm	tance	mnm	mnm			Min	Minimum insertion loss (dB) in accordance with MIL-STD-220 $1/\sqrt{2}$	sertion	loss (dB	) in acc	ordance	with M	IL-STD-	220 1/	<u>2</u> /		
number	le\	level	cuit	current	(JuF)	volt-	20														
	ö	Class		(amps)	+100%	age	resist-			4	At +25°C						At -55°	At -55°C and +125°C	125°C		
	В	S			%0-	drop	ance	100	150	300	_	10	100	_	100	150	300	_	10	100	_
						(volts)	(ohms)	kHz	kHz	kHz	MHz	MHz	MHz	GHz	kHz	kHz	kHz	MHz	MHz	MHz	GHz
001, 013	X	×	L1	0.25	0.15	0.375	1.5	22	28	40	9	09	09	70	20	26	38	58	09	09	70
002, 014	X	×	L2	0.25	0.15	0.375	1.5	22	28	40	60	90	9	70	20	26	38	58	09	09	70
003, 015	X	×	н	0.25	0.30	0.375	1.5	34	44	62	80	80	80	80	32	42	09	78	80	80	80
004, 016	X	×	L1	1.0	0.15	0.250	0.25	8	13	24	45	90	9	70	9	11	22	43	09	09	70
005, 017	X	×	L2	1.0	0.15	0.250	0.25	8	13	24	45	90	9	70	9	11	22	43	09	09	70
006, 018	X	×	н	1.0	0.30	0.250	0.25	18	32	50	80	80	80	80	16	30	48	78	80	80	80
007, 019	X	×	L1	3.0	0.15	0.150	0.05	5	8	16	30	90	9	70	3	9	14	28	58	09	70
008, 020	X	×	L2	3.0	0.15	0.150	0.05	5	8	16	30	90	9	70	3	9	14	28	58	09	70
009, 021	X	×	н	3.0	0.30	0.150	0.05	-	1	19	59	80	80	80	;	1	17	57	80	80	80
010, 022	X	×	L1	5.0	0.15	0.075	0.015	5	8	14	26	55	55	70	3	9	12	24	53	55	70
011, 023	X	×	L2	5.0	0.15	0.075	0.015	5	8	14	26	55	55	70	3	9	12	24	53	55	70
012, 024	X	×	н	5.0	0.30	0.075	0.015	1		-	51	80	80	80	:	-		49	80	80	80

Insertion loss measurements shall be made under full load over the frequency range of 100 kHz to 10 MHz. Insertion loss measurements above this frequency range shall be under no load.

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. 7

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\* Reference documents. In addition to MIL-PRF-28861, this specification sheet references the following document:

#### MIL-STD-220

The margin of this specification sheet is marked with asterisks 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.

Custodians:

Army - CR Navy - EC Air Force - 85 DLA - CC NASA - NA Preparing activity: DLA - CC

(Project 5915-2009-014)

Review activities:

Army - AV, MI Navy - AS, MC, OS, SH Air Force - 19, 99

\* NOTE: The activities listed above were interested in this document as of the date of this document. Since organizations and responsibilities can change, you should verify the currency of the information above using ASSIST Online database at <a href="http://assist.daps.dla.mil">http://assist.daps.dla.mil</a>.