

INCH-POUND

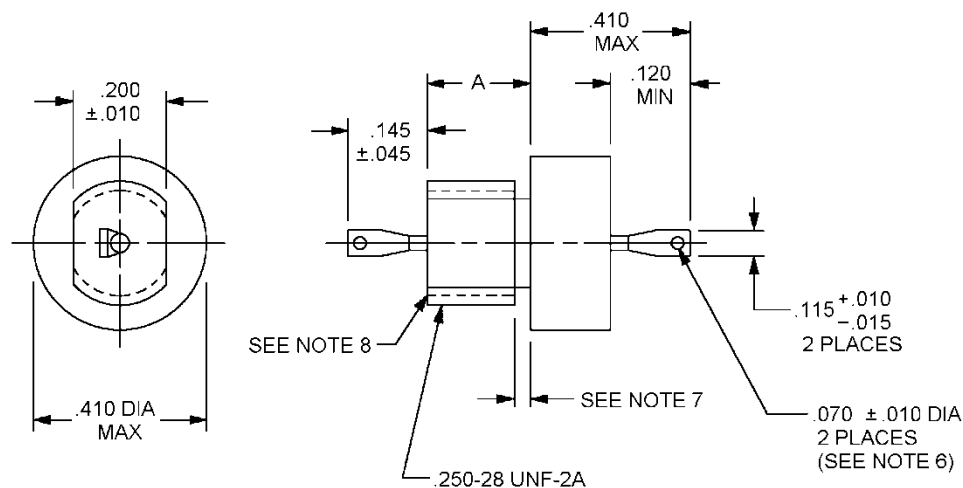
MIL-PRF-28861/1E
28 Septmebr 2016
SUPERSEDING
MIL-PRF-28861/1D
w/AMENDMENT 1
10 May 2005

PERFORMANCE SPECIFICATION SHEET

FILTERS AND CAPACITORS, RADIO FREQUENCY/ELECTROMAGNETIC INTERFERENCE
SUPPRESSION, HERMETICALLY SEALED, STYLES FS10 AND FS11

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.



STYLES FS10 AND FS11

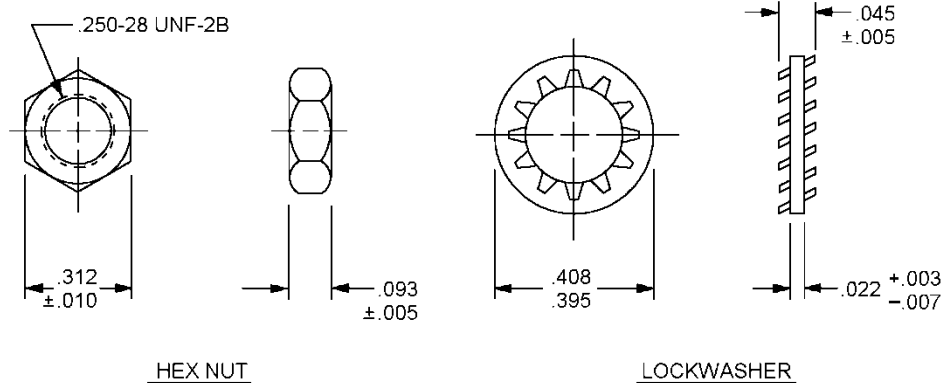
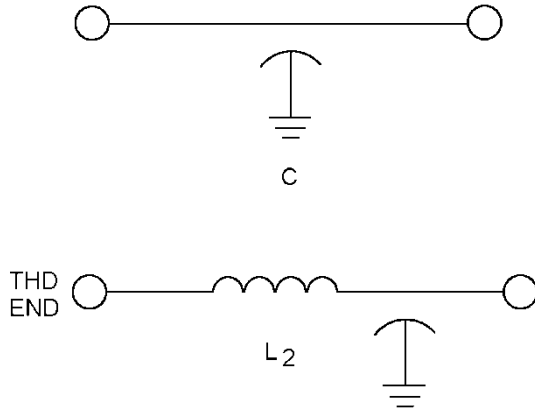


FIGURE 1. Case and hardware dimensions and circuit diagrams.



Dash number	A dimension (± 0.010)
001 through 010 and 021 through 026	.187
011 through 020 and 031 through 036	.312

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CIRCUIT DIAGRAMS

Inches	mm	Inches	mm
.003	0.08	.120	3.05
.005	0.13	.140	3.56
.007	0.18	.187	4.75
.010	0.25	.200	5.08
.015	0.38	.250	6.35
.022	0.56	.312	7.92
.045	1.14	.395	10.03
.070	1.78	.408	10.36
.093	2.36	.410	10.41
.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 "L" or the circuit diagram shall be marked on the case.
6. Optional slot may be supplied, $.050 \pm 0.010$ inches (1.27 ± 0.25 mm) x $.070 \pm 0.010$ inches (1.78 ± 0.25 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-ounce ± 4 inch-ounce.

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

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REQUIREMENTS:

Design and construction:

Dimensions and configuration: See figure 1.

Weight: 5 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: See table I.

Rated current: 15 amperes.

Capacitance: See table I.

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: 0.12 V dc maximum.

DC resistance: 0.008 ohm maximum.

Seal: In accordance with MIL-PRF-28861. Leakage rate for class S filters shall not exceed 1×10^{-7} atm cm³/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.

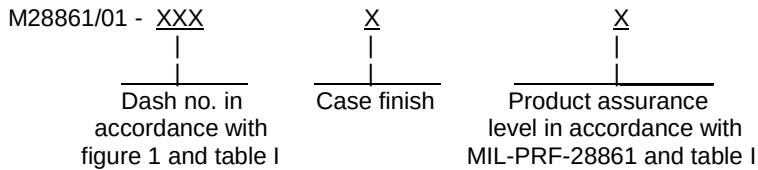
TABLE I. Electrical characteristics.

Dash number	Product assurance level		Style	Cir- cuit	Rated voltage		Minimum capaci- tance (μF)	Minimum insertion loss (dB) in accordance with MIL-STD-220 <u>2/</u> <u>3/</u>													
	Class							At +25°C							At -55°C and +125°C						
					B	S		DC volts	AC <u>1/</u> volts	30 kHz	150 kHz	300 kHz	1 MHz	10 MHz	100 MHz	1 GHz	30 kHz	150 kHz	300 kHz	1 MHz	10 MHz
001, 011	X	---	FS10	L2	50	---	1.2	15	28	33	40	40	70	70	13	26	31	38	38	70	70
002, 012	X	---	FS10	C	50	---	1.2	15	28	33	40	40	70	70	13	26	31	38	38	70	70
003, 013	X	X	FS11	L2	70	---	0.7	10	24	30	40	40	64	70	8	22	28	38	38	64	70
004, 014	X	X	FS11	C	70	---	0.7	10	24	30	40	40	64	70	8	22	28	38	38	64	70
005, 015	X	X	FS11	L2	100	---	0.45	6	19	25	36	40	60	70	4	17	23	34	38	60	70
006, 016	X	X	FS11	C	100	---	0.45	6	19	25	36	40	60	70	4	17	23	34	38	60	70
007, 017	X	X	FS11	L2	150	---	0.25	---	14	20	31	40	56	70	---	12	18	29	38	56	70
008, 018	X	X	FS11	C	150	---	0.25	---	14	20	31	40	56	70	---	12	18	29	38	56	70
009, 019	X	X	FS11	L2	200	125	0.15	---	10	16	26	40	52	70	---	9	14	25	38	52	70
010, 020	X	X	FS11	C	200	125	0.15	---	10	16	26	40	52	70	---	9	14	25	38	52	70
021, 031	X	X	FS11	L2	200	125	0.01	---	---	---	2	20	40	55	---	---	---	---	18	40	55
022, 032	X	X	FS11	C	200	125	0.01	---	---	---	2	20	40	55	---	---	---	---	18	40	55
023, 033	X	X	FS11	L2	200	125	0.0027	---	---	---	---	10	28	45	---	---	---	---	8	28	45
024, 034	X	X	FS11	C	200	125	0.0027	---	---	---	---	10	28	45	---	---	---	---	8	28	45
025, 035	X	X	FS11	L2	200	125	0.001	---	---	---	---	2	20	35	---	---	---	---	2	20	35
026, 036	X	X	FS11	C	200	125	0.001	---	---	---	---	2	20	35	---	---	---	---	2	20	35

1/ 0 to 400 Hz.2/ Insertion loss measurements shall be made under full load over the frequency range of 150 kHz to 10 MHz. Insertion loss measurements above or below this frequency range shall be made under no load.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.

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



Marking: Filters and capacitors shall be marked, as a minimum, with the following information:

- Military PIN.
- JAN brand.
- Source code.
- Date code.
- Terminal identification or circuit diagram (nonsymmetrical filters only).

In addition, full marking, in accordance with MIL-PRF-28861 shall be marked on the package.

Cataloging information. Dash numbers 002, 004, 006, 008, 010, 012, 014, 016, 018, 020, 022, 024, 026, 032, 034, and 036 shall be cataloged under FSC 5910 as feed-through ceramic capacitors. Dash numbers 001, 003, 005, 007, 009, 011, 013, 015, 017, 019, 021, 023, 025, 031, 033, and 035 shall be cataloged under FSC 5915 as radio frequency interference filters.

Referenced documents. In addition to MIL-PRF-28861, this specification sheet references the following documents:

MIL-STD-220

Marginal notations are not used in this revision to identify changes with respect to the previous issue due to the extent of the changes.

Custodians:

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

Preparing activity:

DLA - CC

(Project 59GP-2016-003)

Review activities:

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

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 the ASSIST Online database at <https://assist.dla.mil/>.