

PERFORMANCE SPECIFICATION SHEET

FILTERS AND CAPACITORS, RADIO FREQUENCY/ELECTROMAGNETIC INTERFERENCE,
SUPPRESSION, NONHERMETICALLY SEALED, STYLE FS60

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

The requirements for acquiring the filters described herein
shall consist of this specification sheet and [MIL-PRF-28861](#).

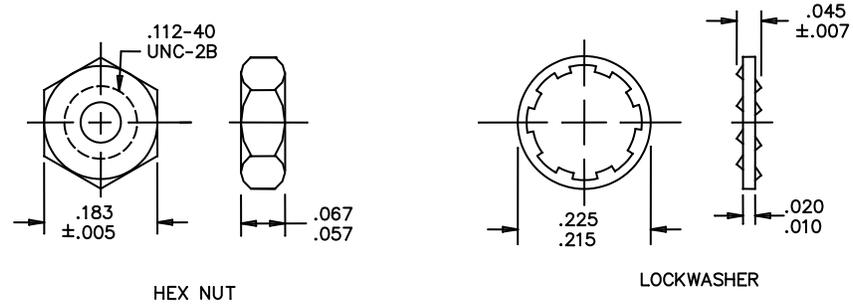
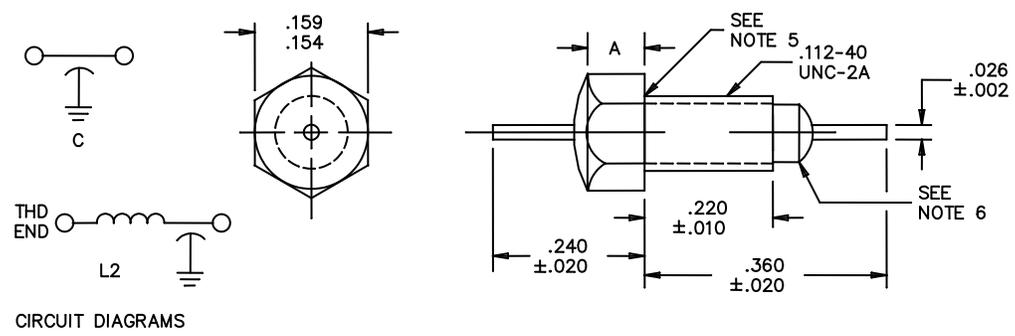


FIGURE 1. Case dimensions and circuit diagrams.

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Dash number	A dimension
-003	.145 ±.030
-001, -002 -004 thru -007	.120 ±.005

Inches	mm
.002	0.05
.005	0.13
.007	0.18
.010	0.25
.020	0.51
.026	0.66
.030	0.76
.045	1.14
.057	1.45
.067	1.70
.112	2.84
.120	3.05
.145	3.68
.154	3.91
.159	4.04
.183	4.65
.215	5.46
.220	5.59
.225	5.72
.240	6.10
.360	9.14

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. One and one-half imperfect threads allowed, .030 inch (0.76 mm) maximum.
6. One imperfect thread allowed .030 inch (0.76 mm) maximum.
7. Recommended mounting torque: 32 oz-in ± 4 oz-in.
8. Potting shall not extend beyond .030 inch (0.76 mm) from the filter body.

FIGURE 1. Case dimensions and circuit diagrams - Continued.

REQUIREMENTS:

Design and construction:

Dimensions and configuration: See figure 1.

Weight: 1 gram maximum.

Case: Steel.

Case finish: T, S, or G in accordance with [MIL-PRF-28861](#).

Terminals: Solderable.

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

Rated voltage: See table I.

Rated current: 5 amperes maximum.

Capacitance to ground: See table I for capacitance value.

Dissipation factor: 3 percent maximum.

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

Insulation resistance:

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.

Insertion loss:

At +25°C: In accordance with table I.

At -55°C and +125°C: A 3 dB degradation from the +25°C value shall be allowed.

Voltage drop: 0.1 volt maximum.

DC resistance: 0.02 ohm maximum.

Seal: Not applicable.

Temperature rise: +25°C maximum.

Thermal shock and immersion: Not applicable.

Moisture resistance: Not applicable.

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

Quality assurance provisions: In accordance with MIL-PRF-28861.

Product assurance level: In accordance with table I.

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TABLE I. Electrical characteristics

Dash number	Circuit	Product assurance level		Rated voltage V dc	Capacitance (μ F) -0,+100 percent	Minimum insertion loss (dB) in accordance with MIL-STD-220						Minimum insertion loss at resonant frequency <u>3/</u>
		Class				<u>1/</u> <u>2/</u>						
		B	S			1 MHz	10 MHz	100 MHz	200 MHz	1 GHz	10 GHz	
001	C	X	X	100	.027	10	30	39	43	65	70	40 dB 200 MHz - 1 GHz
002	L2	X	X	100	.027	10	30	50	45	70	70	-----
003	L2	X		100	.045	14	37	45	45	70	70	-----
004	C	X	X	200	1,000 pF	--	4	20	25	30	55	-----
005	C	X	X	200	5,000 pF	--	15	34	41	42	55	30 dB 200 MHz - 1 GHz
006	C	X		200	.01	4	21	35	42	50	60	35 dB 200 MHz - 1 GHz
007	L2	X		200	.01	4	21	35	44	50	60	35 dB 200 MHz - 1 GHz

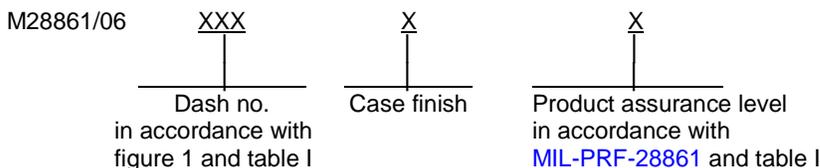
1/ For C circuits, insertion loss measurements shall be made under no load. For L2 circuits, insertion loss measurements shall be made under full load over the frequency range of 1MHz to 10MHz; above this frequency range, insertion loss measurements shall be made under no load.

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.

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



Marking: Filters shall be marked, as a minimum, with an abbreviated military PIN as shown in figure 2. Full marking, in accordance with MIL-PRF-28861, shall be marked on the unit package.



- J - Abbreviation for JAN
- 28861 - Abbreviation for M28861
- A - Indicates specification sheet 06
- C - Code indicating dash number as follows:

Code	Dash no.	Code	Dash no.
A	001	E	005
B	002	F	006
C	003	G	007
D	004		

- B - Code indicating product assurance level (for example, "B" indicates class B).
- 221 - Date code. First digit indicates the year (for example, "2" indicates 2002). The last two digits indicate the week.

FIGURE 2. Example of marking for the abbreviated military PIN on the hex flats (expanded view).

NOTES:

Application note: These nonhermetically sealed filters may be susceptible to moisture intrusion when subjected to repeated thermal cycling. If these items are to be utilized in applications enduring harsh environments, the user should consider placing them within hermetic enclosures.

Cataloging information: Dash numbers 001 and 004 through 006 shall be cataloged under FSC 5910 as feed-through ceramic capacitors. Dash numbers 002, 003, and 007 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](#)

- * Changes from previous issue: The margins of this specification are 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 59GP-2010-001)

Review activities:
Army - AR, AT, 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 <https://assist.daps.dla.mil> .