

INCH-POUND

MIL-PRF-15733/61G
4 February 2011
SUPERSEDING
MIL-PRF-15733/61F
2 September 2010

PERFORMANCE SPECIFICATION SHEET

FILTERS, RADIO FREQUENCY INTERFERENCE,
STYLES FL30, FL32, FL34, AND FL43

PART OR IDENTIFYING NUMBERS (PIN's) M15733/61-0001 and 0004
ARE INACTIVE FOR NEW DESIGN AFTER 4 DECEMBER 1979.
SEE TABLE V FOR NEW DESIGN DATA.

This specification sheet 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-15733](#).

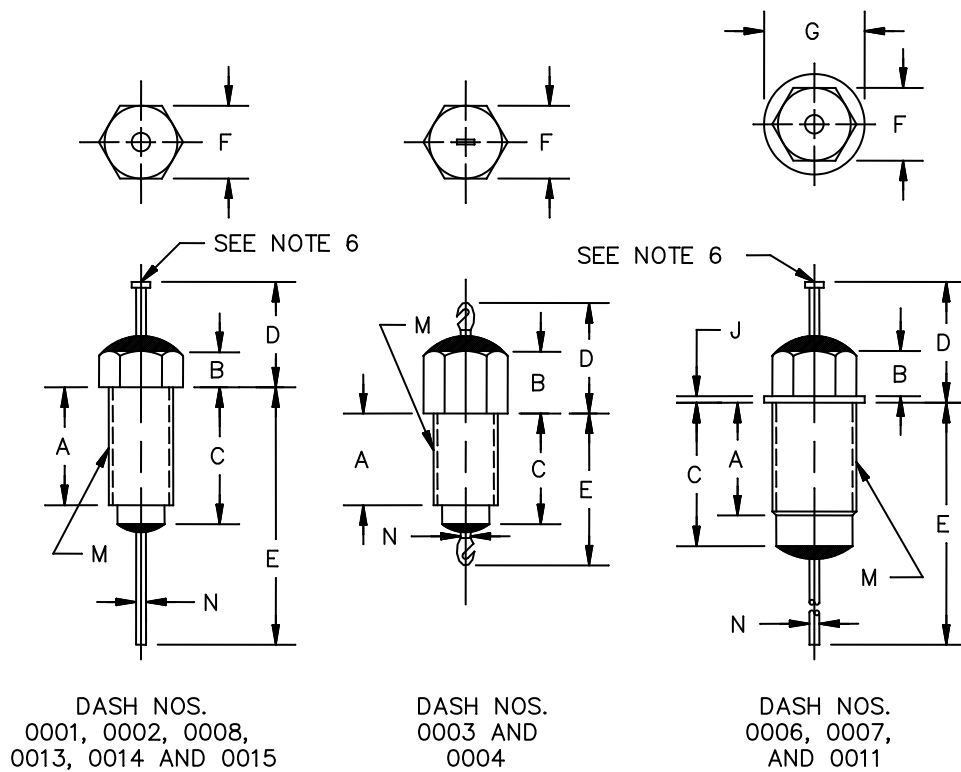
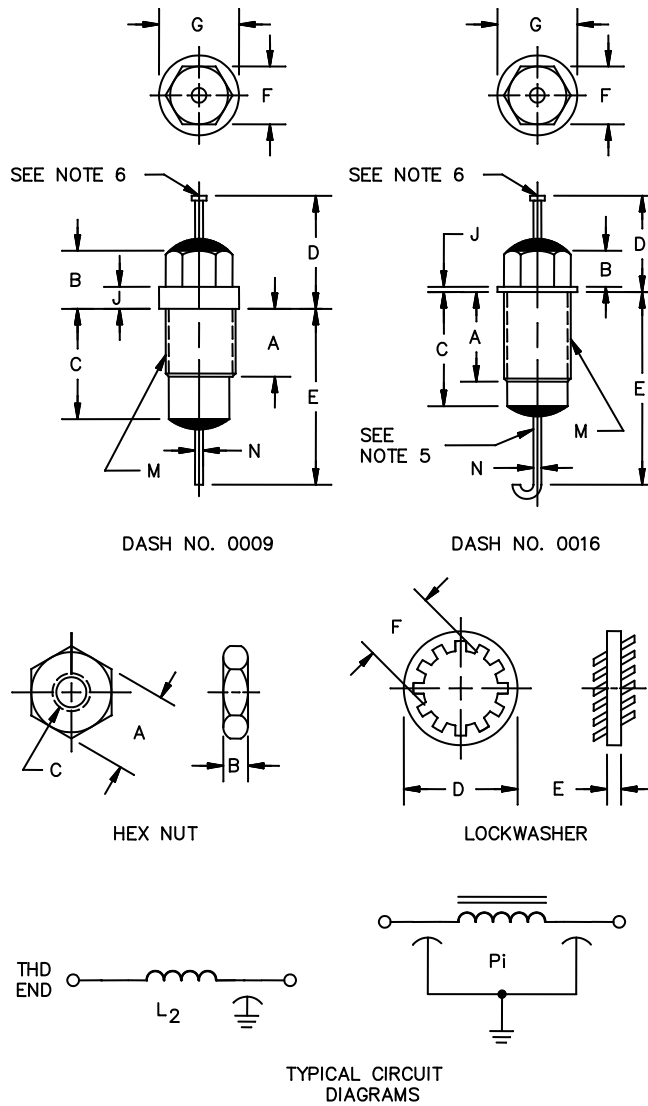


FIGURE 1. Filter and hardware dimensions and circuit configurations.



NOTES:

1. Circuit diagram is for information only.
2. Case is ground terminal.
3. Mounting hardware (lockwasher and hex nut) shall be supplied with each filter.
4. Terminal identification (nonsymmetrical filters): The case shall be marked at the threaded end of the filter, with the symbol "L" for L₂ circuits.
5. Hook bend radius: .046 (1.17 mm) (REF).
6. Turret head terminal is optional.
7. Potting shall not extend beyond .030 inch (0.76 mm) from the filter body.
8. An undercut or imperfect threads out to a maximum of .060 inch (1.52 mm) from the hex head or mounting surface is permissible.

FIGURE 1. Filter and hardware dimensions and circuit configurations - Continued.

MIL-PRF-15733/61G

TABLE I. Filter dimensions.

Type designation <u>1/</u>	Dash no.	A		B		C		D		E	
		Min	Max	Min	Max	Min	Max	Min	Max	Min	Max
FL30	0001	.203 (5.16)	.233 (5.92)	.172 (4.37)	.202 (5.13)	----	.291 (7.39)	.328 (8.33)	.390 (9.91)	.391 (9.93)	.515 (13.08)
FL30	0002	.203 (5.16)	.233 (5.92)	.172 (4.37)	.202 (5.13)	----	.291 (7.39)	.328 (8.33)	.390 (9.91)	.391 (9.93)	.515 (13.08)
FL34	0003	.203 (5.16)	.395 (10.03)	.235 (5.97)	.265 (6.73)	.390 (9.91)	.482 (12.24)	.531 (13.49)	.593 (15.06)	.719 (18.26)	.781 (19.84)
FL34	0004	.203 (5.16)	.395 (10.03)	.235 (5.97)	.265 (6.73)	.390 (9.91)	.482 (12.24)	.531 (13.49)	.593 (15.06)	.719 (18.26)	.781 (19.84)
FL32	0006	.235 (5.97)	.265 (6.73)	.110 (2.79)	.140 (3.56)	.296 (7.52)	.326 (8.28)	.312 (7.92)	.374 (9.50)	.890 (22.61)	.952 (24.18)
FL32	0007	.240 (6.10)	.260 (6.60)	.115 (2.92)	.135 (3.43)	.296 (7.52)	.326 (8.28)	.312 (7.92)	.374 (9.50)	.890 (22.61)	.952 (24.18)
FL32	0008	.206 (5.23)	.226 (5.74)	.083 (2.11)	.103 (2.62)	----	.276 (7.01)	.281 (7.14)	.343 (8.71)	.363 (9.22)	.549 (13.94)
FL32	0009	.240 (6.10)	.260 (6.60)	.271 (6.88)	.291 (7.39)	.396 (10.06)	.416 (10.57)	.44 (11.2)	.50 (12.7)	.65 (16.5)	.71 (18.0)
FL43	0011	.235 (5.97)	.265 (6.73)	.110 (2.79)	.140 (3.56)	.296 (7.52)	.326 (8.28)	.312 (7.92)	.374 (9.50)	.890 (22.61)	.952 (24.18)
FL43	0013	.201 (5.11)	.231 (5.87)	.078 (1.98)	.108 (2.74)	----	.276 (7.01)	----	.312 (7.92)	.859 (21.82)	.921 (23.39)
FL43	0014	.206 (5.23)	.226 (5.74)	.13 (3.3)	.17 (4.3)	----	.315 (8.00)	.31 (7.9)	----	.49 (12.4)	----
FL43	0015	.203 (5.16)	.233 (5.92)	.172 (4.37)	.202 (5.13)	.266 (6.76)	.296 (7.52)	.328 (8.33)	.390 (9.91)	.422 (10.72)	.484 (12.29)
FL43	0016	.235 (5.97)	.265 (6.73)	.110 (2.79)	.140 (3.56)	.296 (7.52)	.326 (8.28)	.312 (7.92)	.374 (9.50)	.890 (22.61)	.952 (24.18)

See footnotes at end of table.

MIL-PRF-15733/61G

TABLE I. Filter dimensions - Continued.

Type designation <u>1/</u>	Dash no.	F		G		J		M	N	Weight (grams) (max)
		Min	Max	Min	Max	Min	Max	Thread	<u>2/</u>	
FL30	0001	.235 (5.97)	.265 (6.73)	----	----	----	----	.216-28 UNF-2A	AWG 20 (.032)	2.6
FL30	0002	.235 (5.97)	.265 (6.73)	----	----	----	----	.216-32 UNEF-2A	AWG 20 (.032)	2.2
FL34	0003	.360 (9.14)	.390 (9.91)	----	----	----	----	.3125-24 UNF-2A	AWG 15 (.057)	7.1
FL34	0004	.360 (9.14)	.390 (9.91)	----	----	----	----	.3125-32 UNEF-2A	AWG 15 (.057)	7.1
FL32	0006	.177 (4.50)	.197 (5.00)	.220 (5.59)	.250 (6.35)	.017 (0.43)	.047 (1.19)	.216-32 UNEF-2A	AWG 20 (.032)	2.0
FL32	0007	.177 (4.50)	.197 (5.00)	.235 (5.97)	.265 (6.73)	----	.032 (0.81)	.216-32 UNEF-2A	AWG 20 (.032)	2.0
FL32	0008	.177 (4.50)	.197 (5.00)	----	----	----	----	.164-32 UNC-2A	AWG 20 (.032)	2.0
FL32	0009	.177 (4.50)	.197 (5.00)	.240 (6.10)	.260 (6.60)	.115 (2.92)	.135 (3.43)	.216-32 UNEF-2A	AWG 20 (.032)	3.2
FL43	0011	.172 (4.37)	.202 (5.13)	.220 (5.59)	.250 (6.35)	----	.032 (0.81)	.216-32 UNEF-2A	AWG 20 (.032)	2.0
FL43	0013	.171 (4.34)	.202 (5.13)	----	----	----	----	.164-32 UNC-2A	AWG 20 (.032)	2.2
FL43	0014	.177 (4.50)	.197 (5.00)	----	----	----	----	.164-32 UNC-2A	AWG 20 (.032)	1.4
FL43	0015	.235 (5.97)	.265 (6.73)	----	----	----	----	.216-32 UNEF-2A	AWG 18 (.040)	2.0
FL43	0016	.172 (4.37)	.202 (5.13)	----	.235 (5.97)	----	.032 (0.81)	.216-32 UNEF-2A	AWG 20 (.032)	2.8

1/ The type designation does not describe a discrete item. For complete identification, the PIN should be referenced.

2/ The equivalent diameter in inches is shown in parentheses.

TABLE II. Hardware dimensions.

Dash number	Hex nut					Lockwasher					
	A		B		C	D		E		F	
	Min	Max	Min	Max	Thread	Min	Max	Min	Max	Min	Max
0001	.235 (5.97)	.265 (6.73)	.070 (1.78)	.080 (2.03)	.216-28 UNF-2B	.372 (9.45)	.380 (9.65)	.020 (0.51)	.024 (0.61)	.215 (5.46)	.225 (5.72)
0002, 0006, 0007 0009, 0011 0015, 0016	.235 (5.97)	.265 (6.73)	.070 (1.78)	.080 (2.03)	.216-32 UNEF-2B	.372 (9.45)	.380 (9.65)	.020 (0.51)	.024 (0.61)	.215 (5.46)	.225 (5.72)
0003	.365 (9.27)	.385 (9.78)	.085 (2.16)	.100 (2.54)	.3125-24 UNEF-2B	.425 (10.80)	.435 (11.05)	.012 (0.30)	.032 (0.81)	.313 (7.95)	.332 (8.43)
0004	.365 (9.27)	.385 (9.78)	.085 (2.16)	.100 (2.54)	.3125-32 UNEF-2B	.425 (10.80)	.435 (11.05)	.012 (0.30)	.032 (0.81)	.313 (7.95)	.332 (8.43)
0008, 0013 0014	.235 (5.97)	.265 (6.73)	.073 (1.85)	.078 (1.98)	.164-32 UNC-2B	.324 (8.23)	.336 (8.53)	.015 (0.38)	.025 (0.64)	.162 (4.11)	.172 (4.37)

REQUIREMENTS:

Design and construction:

Dimensions and configuration: See [figure 1](#), and [table I](#) and II.

Weight: See [table I](#).

Case and hardware: Silver plated.

Terminals: Solderable. Leads shall be tin-lead coated copper wire.

Mounting torque (by dash number):

- 0001, 0002, 0006,
0007, 0009, 0011, 0016 - 6 inch-pounds, maximum.
- 0003, 0004 - 8 inch pounds, maximum.
- 0008, 0013, 0014 - 3 inch pounds, maximum.

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

Rated voltage: See [table III](#).

Rated current: See [table III](#).

Insertion loss: In accordance with [MIL-PRF-15733](#) at +25°C and at temperature extremes (see [table III](#)).

MIL-PRF-15733/61G

Voltage conditioning (conformance inspection only) (applicable to dash numbers 0002, 0003, and 0006 through 0016). The test shall be performed as follows:

Test temperature: +125°C +4°C, -0°C

Test voltage: 1.4 times rated dc voltage.

Test duration: 168 ± 4 hours.

Capacitance to ground: In accordance with [MIL-PRF-15733](#) and [table III](#).

Temperature rise: 25°C maximum except -0014 shall be 40°C maximum.

Dielectric withstanding voltage: In accordance with [MIL-PRF-15733](#) except that the voltage shall be applied between either terminal and ground (case) for 1 to 5 seconds.

Barometric pressure (reduced): In accordance with [MIL-PRF-15733](#) and [method 105 of MIL-STD-202](#); test condition C. The following exception shall apply:

Dielectric withstanding voltage: 1.5 times the rated dc voltage applied between either terminal and ground (case) for 1 to 5 seconds.

Insulation resistance: In accordance with [MIL-PRF-15733](#). The following details and exceptions shall apply:

Test temperature: +25°C ± 3°C.

Test potential: 100 V dc or rated dc voltage, whichever is less.

Points of measurement: Between either terminal and ground (case).

Minimum insulation resistance: 10,000 megohms.

Voltage drop: In accordance with [MIL-PRF-15733](#) and [table III](#).

Terminal strength: In accordance with [MIL-PRF-15733](#) and [method 211 of MIL-STD-202](#); test condition A. The following details shall apply:

Applied force: 5 pounds.

Overload: In accordance with [MIL-PRF-15733](#). The following exception shall apply:

Measurements after test: Insulation resistance only shall be measured at +25°C and shall meet initial requirements.

Thermal shock and immersion: Not applicable.

Shock (specified pulse): In accordance with [MIL-PRF-15733](#) and [method 213 of MIL-STD-202](#); test condition I.

Vibration, high frequency: In accordance with [MIL-PRF-15733](#) and [method 204 of MIL-STD-202](#); test condition D.

MIL-PRF-15733/61G

Radiographic inspection (conformance only) (applicable to dash numbers 0011 and 0016 only).

Filters shall be x-rayed in one plane at 90 degrees rotation perpendicular to their longitudinal axis. Any evidence of poor capacitor mounting or uneven soldering of capacitor to case shall be cause for rejection; rejected units shall be dissected and examined for poor workmanship or uneven soldering. Any defects noted shall require corrective action prior to acceptance of future lots. Magnification during visual inspection shall be 2 power, minimum. Unless otherwise specified, one radiograph shall be taken of each unit. Filters shall be positioned to yield a longitudinal image of the body.

Moisture resistance: Not applicable.

Life: In accordance with MIL-PRF-15733 and method 108 of MIL-STD-202; test condition D.

Part or Identifying Number (PIN): M15733/61-(dash number from table III).

Marking: Each filter shall be marked with the PIN. In addition, full marking in accordance with MIL-PRF-15733 shall be marked on the unit package.

TABLE III. Electrical characteristics.

Dash number	Circuit	Rated voltage		Rated current amps	Capacitance (min) pF	Voltage drop volts	Minimum insertion loss (dB) in accordance with MIL-STD-220. 1/									
		V dc	2/ V rms				+25°C									
							1 MHz	5 MHz	10 MHz	20 MHz	50 MHz	100 MHz	200 MHz	500 MHz	1 GHz	10 GHz
0001 3/	π	200	140	10	1,500	.1	----	----	----	----	32	45	58	70	70	70
0002	π	200	140	10	1,500	.1	----	----	----	----	32	45	58	70	70	70
0003	π	500	350	25	2,000	.5	----	----	----	----	40	55	65	70	70	70
0004 3/	π	500	350	25	2,000	.5	----	----	----	----	40	55	65	70	70	70
0006	π	200	140	10	1,500	.1	----	----	----	----	32	45	58	70	70	70
0007	π	100	70	10	5,000	.1	----	----	----	----	50	65	70	70	70	70
0008	π	100	70	10	1,000	.1	----	----	----	----	50	65	70	70	70	70
0009	π	70	----	10	12,000	.1	----	20	----	48	----	65	----	----	65	65
0011	π	100	70	10	5,000	.5	----	----	----	----	50	65	----	65	70	70
0013	L_2	100	----	10	22,000	.1	10	----	30	----	----	42	45	----	60	60
0014	π	50	----	20	10,000	.5	----	----	20	----	50	65	70	----	70	70
0015	π	500	----	15	2,500	.15	----	----	5	----	----	50	55	----	70	70
0016	π	100	----	10	25,000	.1	----	15	----	60	60	65	----	65	65	65

1/ Insertion loss measurements between 1 MHz and 10 MHz, inclusive, shall be performed at full load.

Insertion loss measurements above 10 MHz shall be performed at no load.

2/ Zero to 400 Hz over the rated temperature range of -55°C to +125°C.

3/ Inactive for new design.

MIL-PRF-15733/61G

TABLE III. Electrical characteristics - Continued.

Dash number	Circuit	Rated voltage		Rated current amps	Capacitance (min) pF	Voltage drop volts	Minimum insertion loss (dB) in accordance with MIL-STD-220. 1/									
		V dc	Vrms 2/				-55°C and +125°C									
							1 MHz	5 MHz	10 MHz	20 MHz	50 MHz	100 MHz	200 MHz	500 MHz	1 GHz	10 GHz
0001 3/	π	200	140	10	1,500	.1	----	----	----	----	15	28	46	70	70	70
0002	π	200	140	10	1,500	.1	----	----	----	----	15	28	46	70	70	70
0003	π	500	350	25	2,000	.5	----	----	----	----	25	40	59	70	70	70
0004 3/	π	500	350	25	2,000	.5	----	----	----	----	25	40	59	70	70	70
0006	π	200	140	10	1,500	.1	----	----	----	----	16	30	48	70	70	70
0007	π	100	70	10	5,000	.1	----	----	----	----	16	30	48	70	70	70
0008	π	100	70	10	1,000	.1	----	----	----	----	20	35	55	70	70	70
0009	π	70	----	10	12,000	.1	----	8	----	30	----	63	----	----	65	65
0011	π	100	70	10	5,000	.5	----	----	----	----	16	30	----	65	70	70
0013	L_2	100	----	10	22,000	.1	8	----	28	----	----	40	43	----	60	60
0014	π	50	----	20	10,000	.5	----	----	18	----	48	63	70	70	70	70
0015	π	500	----	15	2,500	.15	----	----	3	----	----	45	50	----	70	70
0016	π	100	----	10	25,000	.1	----	13	----	27	58	70	----	65	65	65

1/ Insertion loss measurements between 1 MHz and 10 MHz, inclusive, shall be performed at full load.

Insertion loss measurements above 10 MHz shall be performed at no load.

2/ Zero to 400 Hz over the rated temperature range of -55°C to +125°C.

3/ Inactive for new design.

Conformance inspection: In accordance with MIL-PRF-15733 except as follows:

Group A: In accordance with MIL-PRF-15733 for dash numbers 0001 and 0004. Group A inspection for all other dash numbers shall be in accordance with table IV. Lots having greater than 10 percent rejects shall be considered reject lots. Reject lots, at the option of the manufacturer, may be reworked and submitted to group A inspection of table IV.

TABLE IV. Group A inspection.

Test or inspection	Sampling procedure
Voltage conditioning	100%
Dielectric withstanding voltage	100%
Insulation resistance	100%
Voltage drop 1/	100%
Insertion loss (check test)	100%
Radiographic inspection 2/	100%
Visual and mechanical inspection	See MIL-PRF-15733, group A inspection

1/ DC voltage drop/dc resistance test for dc rated filters shall be performed on a sample basis in accordance with MIL-PRF-15733, group A inspection.

2/ Applicable to dash numbers 0011 and 0016 only.

MIL-PRF-15733/61G

New design data: See table V.

TABLE V. New design data.

Canceled PIN's	For new design use M15733/61-	Inactive PIN's	For new design use M15733/61-
M15733/35-0001	0002	M15733/61-0001	0002
M15733/35-0002	0002	M15733/61-0004	0003
M15733/36-0001	0003	M15733/43-0001	0002
M15733/36-0002	0003	M15733/43-0002	0008
M15733/52-0001	0006	M15733/28-0001	0008
M15733/52-0002	0006	M15733/28-0002	0008
M15733/52-0003	0007	M15733/28-0003	0014
M15733/52-0004	0008	M15733/28-0004	0013
M15733/52-0005	0009		
M15733/47-0001	0011		
M15733/47-0002	0011		
M15733/47-0003	0012		
M15733/47-0005	0013		
M15733/47-0004	0014		
M15733/61-0005	0006		
M15733/61-0010	0011		
M15733/61-0012	0016		

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.

Referenced documents. In addition to [MIL-PRF-15733](#), this specification sheet references the following documents:

- [MIL-STD-202](#)
- [MIL-STD-220](#)

Changes from previous issue. The margins of this specification sheet are marked with vertical lines 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

Preparing activity:
DLA - CC

(Project 5915-2011-001)

Review activities:

- Army - AR, AT, AV, MI
- Navy - AS, MC, OS
- 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 the ASSIST Online database at <https://assist.daps.dla.mil>