

PERFORMANCE SPECIFICATION SHEET

FILTERS AND CAPACITORS, RADIO FREQUENCY INTERFERENCE,
 HERMETICALLY SEALED, STYLE FL63

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](#).

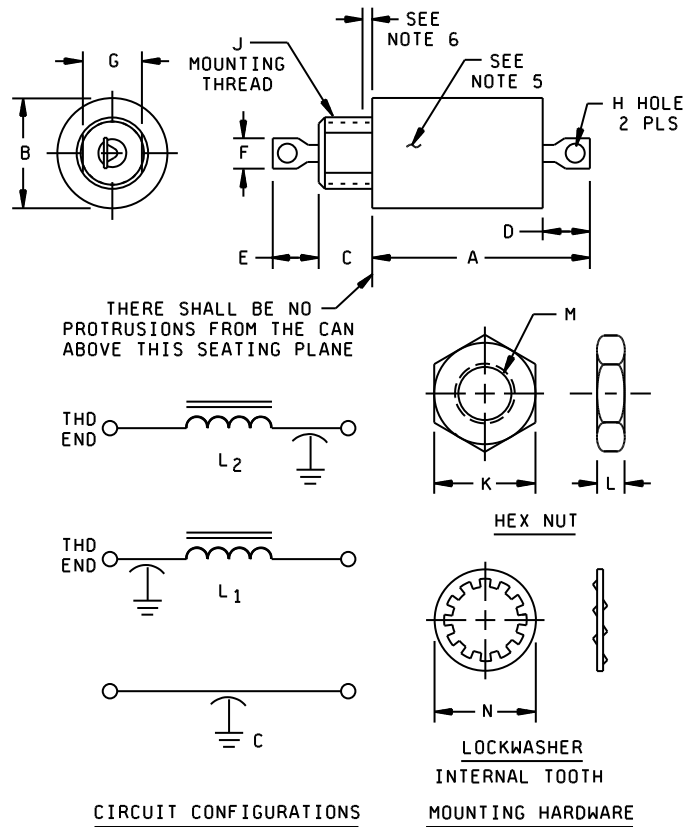


FIGURE 1. Filter and hardware dimensions and circuit configurations.



MIL-PRF-15733/58D

Dash no.	A		B		C		D		E		F	G		H		J
	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Typ	Min	Max	Min	Max	
0001	---	.545 (13.84)	---	.385 (9.78)	.175 (4.45)	.205 (5.21)	.140 (3.56)	.175 (4.45)	.140 (3.56)	.160 (4.06)	.097 (2.46)	.190 (4.83)	.210 (5.33)	.045 (1.14)	.075 (1.91)	.250-28 UNF-2A
0002	---	.545 (13.84)	---	.385 (9.78)	.175 (4.45)	.205 (5.21)	.140 (3.56)	.175 (4.45)	.140 (3.56)	.160 (4.06)	.097 (2.46)	.190 (4.83)	.210 (5.33)	.045 (1.14)	.075 (1.91)	.250-28 UNF-2A
0003	---	.545 (13.84)	---	.385 (9.78)	.175 (4.45)	.205 (5.21)	.145 (3.68)	.175 (4.45)	.140 (3.56)	.160 (4.06)	.097 (2.46)	.190 (4.83)	.210 (5.33)	.045 (1.14)	.075 (1.91)	.250-28 UNF-2A
0004	---	.545 (13.84)	---	.385 (9.78)	.302 (7.67)	.322 (8.18)	.140 (3.56)	.175 (4.45)	.140 (3.56)	.160 (4.06)	.097 (2.46)	.190 (4.83)	.210 (5.33)	.045 (1.14)	.075 (1.91)	.250-28 UNF-2A

Dash no.	Hex nut				Lockwasher		
	K		L		M	N	
	Min	Max	Min	Max	Thread	Min	Max
0001	.307 (7.80)	.317 (8.05)	.088 (2.24)	.098 (2.49)	.250-28 UNF-2B	.395 (10.03)	.410 (10.41)
0002	.307 (7.80)	.317 (8.05)	.088 (2.24)	.098 (2.49)	.250-28 UNF-2B	.395 (10.03)	.410 (10.41)
0003	.307 (7.80)	.317 (8.05)	.088 (2.24)	.098 (2.49)	.250-28 UNF-2B	.392 (9.96)	.412 (10.46)
0004	.307 (7.80)	.317 (8.05)	.088 (2.24)	.098 (2.49)	.250-28 UNF-2B	.395 (10.03)	.410 (10.41)

NOTES:

1. Dimensions are in inches.
2. Metric equivalents are in parentheses.
3. Metric equivalents are given for general information only.
4. All filters shall be supplied with mounting hardware.
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:

Circuit	Symbol
L ₁	C
L ₂	L

6. Imperfect thread or undercut optional (2 places): .047 (1.19) max.
7. Recommended mounting torque: 48 ounce-inch, maximum.
8. For use in applications where mounting panel thickness does not exceed .062 inch. (1.57 mm)

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

REQUIREMENTS:

Dimensions and configurations: See [figure 1](#).

Case: Metal.

Case and hardware finish: In accordance with [MIL-PRF-15733](#). Pure tin is prohibited as an undercoat and final finish.

Seal: Glass to metal.

Terminals: Solderable (see [figure 1](#)). In accordance with [MIL-PRF-15733](#). Pure tin finish is prohibited as an undercoat and final finish.

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

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

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

Voltage drop: See [table I](#).

Insertion loss: see [table I](#).

Seal: In accordance with [MIL-PRF-15733](#) and [method 112, MIL-STD-202](#); test condition A or D.

Capacitance to ground: In accordance with [MIL-PRF-15733](#). The following detail shall apply:

Measured capacitance: 1.4 μ F, -0, +100 percent.

Temperature rise: In accordance with [MIL-PRF-15733](#). Temperature rise shall be 25°C, maximum.

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

Test voltage: 2 times rated voltage (V dc).

Barometric pressure (reduced): In accordance with [MIL-PRF-15733](#) and [method 305, MIL-STD-202](#); test condition D.

Inrush transients test: The filters shall be subjected to test by instantaneous application of 28 V dc to the filter with the output unloaded. The source impedance shall be less than 0.1 ohm and its energy capability shall not limit the inrush current to the filter. The filters shall be subjected to this inrush a minimum of 10 times, with a maximum time of 5 minutes between applications. The input shall always be into the inductor for nonsymmetrical filters.

Measurements after test: Insulation resistance (at +125°C) and insertion loss shall meet initial requirements.

Transient voltage test: The filters shall be subjected to the overvoltage allowed by [MIL-STD-704](#) for a 28 volt dc system. The following details and exceptions shall apply:

Preconditioning: Filter shall be energized at 28 V dc carrying rated current for 15 minutes minimum.

Transient application: The output load shall be removed and the input voltage shall be stepped from 28 volts to 80 volts within 20 milliseconds of removal of the load. The step from 28 to 80 volts shall be accomplished with a rise time of less than 1.0 millisecond. The 80 volts shall be maintained for 100 milliseconds minimum. This cycle shall be repeated 10 times.

Measurements after test: Insulation resistance (at +125°C) and insertion loss shall meet initial requirements.

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

MIL-PRF-15733/58D

Test potential: Rated dc voltage.

Insulation resistance: Shall be not less than 700 megohms at +25°C and not less than 70 megohms at +125°C, when measured between the case (ground) and all terminals connected together.

Voltage drop: In accordance with MIL-PRF-15733. Maximum voltage drop at +25°C shall be as specified in table I.

Insertion loss: In accordance with MIL-PRF-15733 and table I at 25°C and temperature extremes.

Terminal strength: In accordance with MIL-PRF-15733 and method 211, MIL-STD-202; test condition A (pull),.

Applied force: 4.5 pounds.

Salt atmosphere (corrosion): In accordance with MIL-PRF-15733 and method 101, MIL-STD-202; test condition B.

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

Vibration, high frequency: In accordance with MIL-PRF-15733 and method 204, MIL-STD-202; test condition D (20 G).

Moisture resistance: In accordance with MIL-PRF-15733. The following exceptions shall apply:

Measurements after 24-hour drying period:

Dielectric withstanding voltage: Voltage at 1.8 times rated dc voltage.

Insulation resistance and insertion loss shall meet initial requirements.

Life: In accordance with MIL-PRF-15733 and method 108, MIL-STD-202. The following details and exceptions shall apply:

Test condition D, (1,000 hours) for qualification inspection, test condition B (250 hours) for group C inspection.

Measurements after test at +25°C:

Dielectric withstanding voltage at 1.8 times rated dc voltage.

Insulation resistance and insertion loss shall meet initial requirements.

Voltage conditioning: Voltage conditioning shall consist of applying rated dc voltage to the part at +125°C. The voltage shall be applied for a minimum of 250 hours. Charging and discharging current shall be limited within the range of 50 to 150 milliamperes. The test circuit shall be in accordance with figure 2. E_1 shall be continuously monitored and if it falls below 95 percent of E_T , the test shall be stopped and the defective part removed. Time counted toward total test time shall be the time that E_1 is greater than 95 percent of E_T .

After the completion of 250 hours and while remaining at +125°C, the insulation resistance shall be measured and shall be 70 megohms minimum.

TABLE I. Electrical characteristics.

Dash no.	Circuit configuration	Max. rated current (amp)	Maximum rated voltage (V dc)		Voltage drop (volts dc) max	Minimum full load insertion loss (dB) in accordance with MIL-STD-220 over full temperature range -55°C to +125°C										
			+85°C to -55°C	+125°C		30 kHz	100 kHz	150 kHz	200 kHz	300 kHz	500 kHz	1.0 MHz	2.0 MHz	5.0 MHz	10.0 MHz	1.0 GHz
0001	L ₂	10.0	80	50	.08	15	23	28	32	33	39	44	50	57	60	70
0002	L ₁	10.0	80	50	.08	15	23	28	32	33	39	44	50	57	60	70
0003	C	10.0	80	50	.08	15	23	28	32	33	39	44	50	---	45	70
0004	L ₁	10.0	80	50	.08	15	23	28	32	33	39	44	50	57	60	70

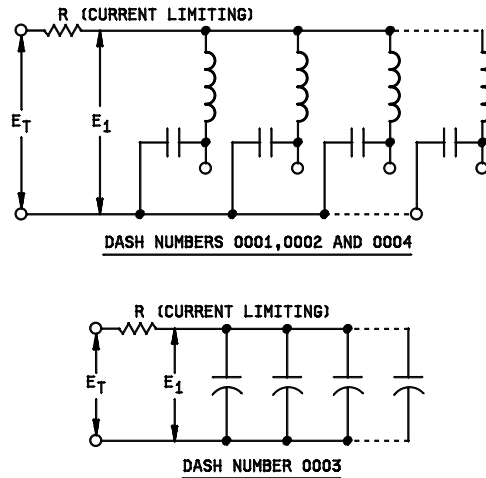


FIGURE 2. Voltage conditioning test circuit.

VERIFICATION:

Qualification inspection: Requirements of this specification sheet not currently required in MIL-PRF-15733 shall be included in qualification inspection as group VI (see table II).

TABLE II. Qualification inspection. 1/

Inspection	Number of samples to be inspected	Number of defectives allowed
<u>Group VI</u>		
Transient voltage	4	0
Inrush transients	4	

1/ This table is an addition to table III (Qualification inspection) of MIL-PRF-15733.

Conformance inspection: Conformance inspection shall be as specified in MIL-PRF-15733 except group A inspection shall be as specified in table III of this specification sheet, in the order shown. Lots that have greater than 5 percent rejects shall be considered reject lots. Reject lots may, at the option of the manufacturer, be resubmitted to 100 percent group A inspection; however, resubmitted lots which have greater than 2 percent rejects shall be rejected and may not be resubmitted for reinspection.

Group C inspection shall be as specified in MIL-PRF-15733 and shall include the tests specified in table IV of this specification sheet.

MIL-PRF-15733/58D

TABLE III. Group A inspection. 1/

Test or inspection	Sampling procedure
Thermal shock	100%
Voltage conditioning	100%
Dielectric withstanding voltage	100%
Insulation resistance (+25°C)	100%
Voltage drop	100%
Insertion loss	100%
Radiographic inspection <u>2/</u>	100%
Seal test	100%
Visual and mechanical inspection Capacitance to ground	See MIL-PRF-15733, group A inspection

1/ This table replaces [table IV](#) (Group A inspection) of [MIL-PRF-15733](#).

2/ Applicable to dash number 0002 only.

TABLE IV. Group C inspection. 1/

Inspection	Number of samples to be inspected	Number of defectives allowed
<u>Subgroup 6</u>		
Transient voltage	4	0
Inrush transients	4	

1/ This table is in addition to [table VI](#) (Group C inspection) of [MIL-PRF-15733](#).

Part or Identifying number (PIN): M15733/58- (dash number from [table I](#)).

Supersession data: See [table V](#).

TABLE V. Supersession data.

Superseded PIN (old)	Superseding PIN (new)
M15733/48-0001	M15733/58-0002
M83439/07-001	M15733/58-0003

NOTES:

Cataloging information. Dash number 0003 shall be cataloged under FSC 5910 as a feed-through ceramic capacitor. Dash numbers 0001, 0002, and 0004 shall be cataloged under FSC 5915 as radio frequency interference filters.

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

[MIL-STD-202](#)
[MIL-STD-220](#)
[MIL-STD-704](#)

This specification is marked with vertical lines to indicate where changes from the previous revision 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 59GP-2015-047)

Review activities:

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