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PLASTIC FILM FEEDTHROUGH COMPONENTS

PLASTIC FILM FEEDTHROUGH COMPONENTS



FM00699

MPE Limited
Hammond Road
Knowsley Industrial Park
Liverpool L33 7UL



FEEDTHROUGH COMPONENTS



General Purpose



Multi-Line



Class Y2 & Y4



Telecoms/Auto



Generators



High Volume

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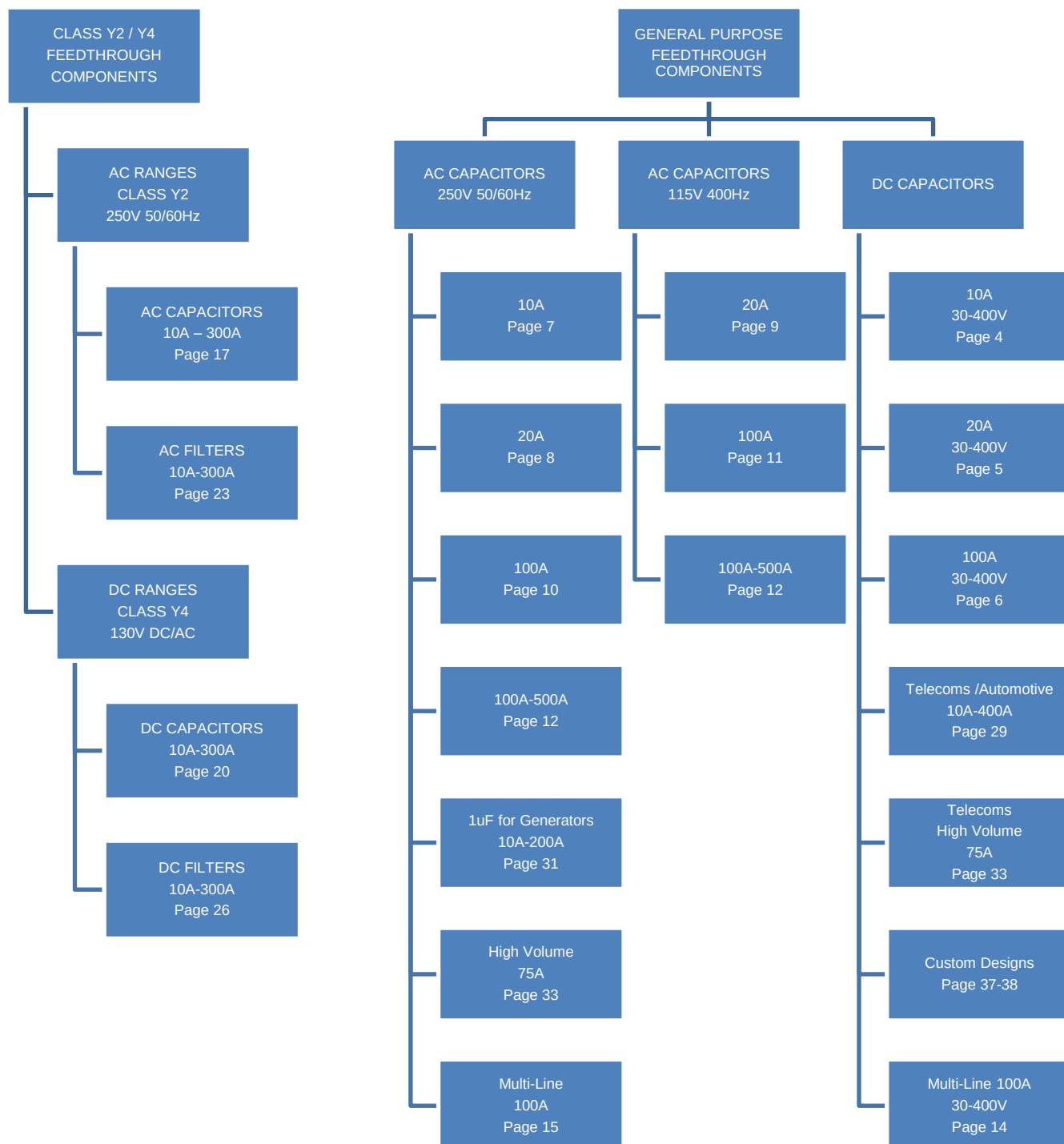
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All parts are RoHS compliant



SELECTION GUIDE



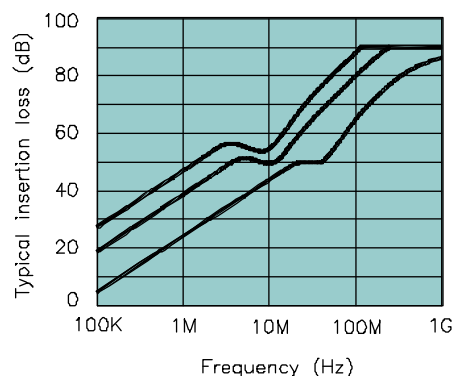
**All AC Capacitors and Filters are also suitable for use on DC
– See specification page for appropriate DC rating**

DESCRIPTION

A range of miniature dc feedthrough capacitors rated at 10A.

Capacitance values from 0.1µF to 1.5µF

Rated voltages from 30V dc to 400V dc
RoHS compliant



Performance examples

Capacitance	Top	Middle	Bottom
1.5µF	1.5µF	0.6µF	0.1µF

RATINGS AND CHARACTERISTICS

Rated Voltage	As tabulated
Test Voltage	Twice rated voltage
Rated Current, I _R	10A @ 50°C*
Insulation Resistance	> 100MΩ
DC Resistance	< 2mΩ
Ambient Temperature Range	-55°C to +85°C
Climatic Category	55/85/21

* Current derating between 50°C and 85°C

For temperature, θ $I_{\theta} = I_R \sqrt{(85 - \theta)/35}$

PRODUCT RANGE

This range of capacitors is identical to the FC25172 – FC25177 range shown in previous catalogues

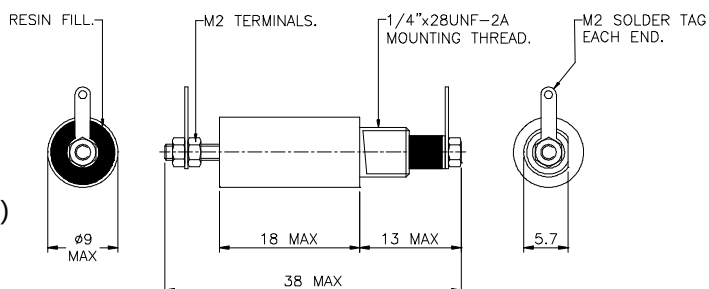
Part Number	Capacitance Value (µF ±20%)	Voltage Rating (V dc)	FV Number **	Typical Insertion Loss (dB) in 50 Ω system with/without load							
				10 kHz	30 kHz	100 kHz	300 kHz	1 MHz	10 MHz	100 MHz	1 GHz
DS25172	0.1	400	FV1084128	-	1	5	14	24	44	70	84
DS25173	0.2	250	FV1084129	-	3	10	20	30	50	74	90
DS25174	0.3	160	FV1084130	-	5	14	24	34	50	74	90
DS25175	0.6	100	FV1084131	3	10	20	30	40	50	80	90
DS25176	0.9	63	FV1084132	5	13	23	33	43	51	83	90
DS25177	1.5	30	FV1084140	8	17	27	37	47	55	87	90

** UK MOD fighting vehicle registration number

DIMENSIONS AND MECHANICAL DETAILS

Dimensions in mm

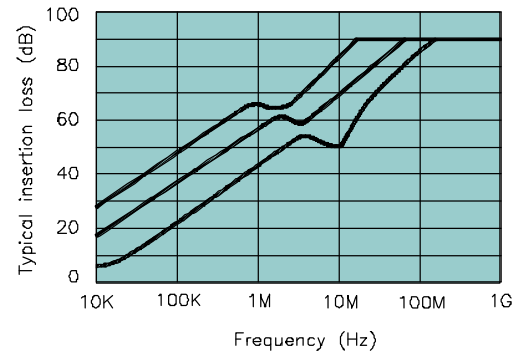
Mounting hardware	8 A/F fixing nut and crinkle washer
Case	Nickel plated brass
Terminals	Nickel plated brass
Weight	5g
Tightening torque	Terminals 0.2Nm (use 2 spanners) Mounting thread 1Nm





DESCRIPTION

A range of dc feedthrough capacitors rated at 20A in a compact case size
Capacitance values from 0.8μF to 12μF
Rated voltages from 30V dc to 400V dc
RoHS compliant



Performance examples top 12μF
 middle 4μF
 bottom 0.8μF

RATINGS AND CHARACTERISTICS

Rated Voltage	As tabulated
Test Voltage	Twice rated voltage
Rated Current, I _R	20A @ 50°C*
Insulation Resistance	> 100MΩ
DC Resistance	< 1mΩ
Ambient Temperature Range	-55°C to +85°C
Climatic Category	55/85/21
*Current derating between 50°C and 85°C	For temperature, $\theta \quad I_{\theta} = I_R \sqrt{(85 - \theta) / 35}$

PRODUCT RANGE

This range of capacitors is identical to the FC23646 – FC23652 range shown in previous catalogues

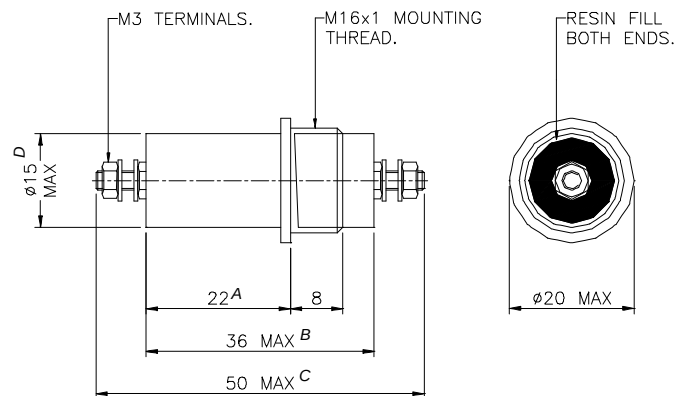
Part Number	Capacitance Value (μF ±20%)	Voltage Rating (V dc)	Typical Insertion Loss (dB) in 50 Ω system with/without load							
			10 kHz	30 kHz	100 kHz	300 kHz	1 MHz	10 MHz	100 MHz	1 GHz
DS23646	0.8	400	4	12	22	32	42	51	82	90
DS23647	1	250	5	14	24	34	44	52	84	90
DS23648	2	160	10	20	30	40	50	58	90	90
DS23649	4	100	16	26	36	46	56	70	90	90
DS23650	5	80	18	28	38	48	58	74	90	90
DS23651	7	63	21	31	41	51	60	79	90	90
DS23652	12	30	26	36	46	56	62	86	90	90

DIMENSIONS AND MECHANICAL DETAILS

Dimensions in mm

Mounting hardware	19 A/F fixing nut and washer
Case	Nickel plated brass
Terminals	Nickel plated brass
Weight	25g
Max tightening torque:	
Terminals	0.5Nm (use 2 spanners)
Mounting thread	7Nm

For DS23652, the following dimensions apply:
^A 34, ^B 46 MAX, ^C 60 MAX and ^D 20 MAX.



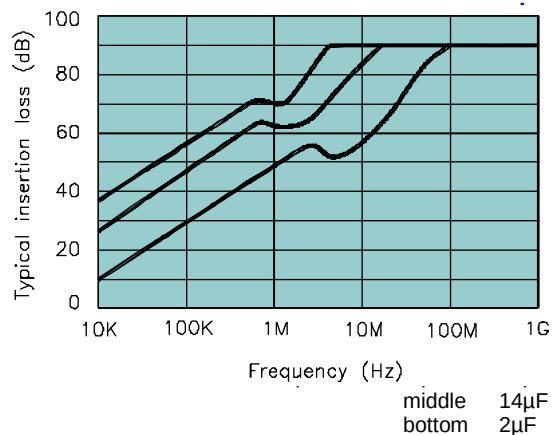


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DC FEEDTHROUGH CAPACITORS – 100A

DESCRIPTION

A range of dc feedthrough capacitors rated at 100A
Capacitance values from 0.8μF to 12μF
Rated voltages from 30V dc to 400V dc
RoHS compliant



RATINGS AND CHARACTERISTICS

Rated Voltage	As tabulated
Test Voltage	Twice rated voltage
Rated Current, I _R	100A @ 50°C*
Insulation Resistance	> 100MΩ
DC Resistance	< 0.5mΩ
Ambient Temperature Range	-55°C to +85°C
Climatic Category	55/85/21

*Current derating between 50°C and 85°C

For temperature, θ $I_{\theta} = I_R \sqrt{(85 - \theta)/35}$

PRODUCT RANGE

This range of capacitors is identical to the FC25186 – FC25192 range shown in previous catalogues

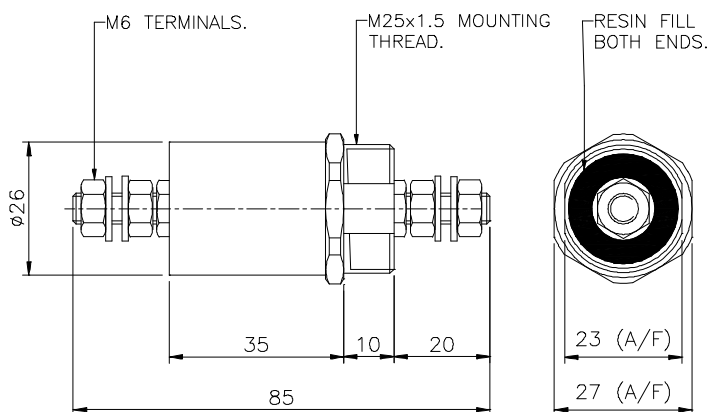
Part Number	Capacitance Value (μF ±20%)	Voltage Rating (V dc)	FV Number **	Typical Insertion Loss (dB) in 50 Ω system with/without load							
				10 kHz	30 kHz	100 kHz	300 kHz	1 MHz	10 MHz	100 MHz	1 GHz
DS25186	2	400	FV1084133	10	20	30	40	50	58	90	90
DS25187	4	250	FV1084134	16	26	36	46	56	70	90	90
DS25188	6	160	FV1084135	20	30	40	50	60	77	90	90
DS25189	14	100	FV1084136	27	37	47	57	63	87	90	90
DS25190	18	80	FV1084137	29	39	49	59	66	90	90	90
DS25191	25	63	FV1084138	32	42	52	62	66	90	90	90
DS25192	40	30	FV1084141	36	46	56	66	66	90	90	90

** UK MOD fighting vehicle registration number

DIMENSIONS AND MECHANICAL DETAILS

Dimensions in mm

Mounting hardware	30 A/F fixing nut and washer
Case	Nickel plated brass
Terminals	Nickel plated brass
Weight	120g
Max tightening torque:	
Terminals	2.5Nm (use 2 spanners)
Mounting thread	14Nm



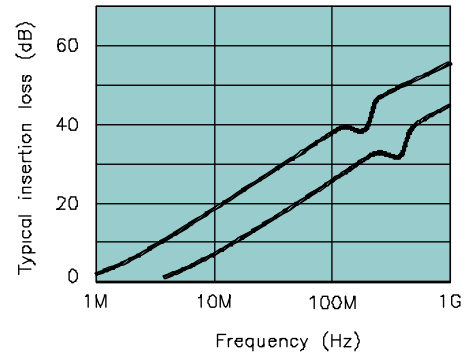


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AC FEEDTHROUGH CAPACITORS – 10A

DESCRIPTION

A range of miniature ac feedthrough capacitors rated at 10A
Capacitance values from 1.3nF to 4.7nF
Test voltage is 2250V dc
RoHS compliant



Performance examples top 4.7nF
 bottom 1.3nF

RATINGS AND CHARACTERISTICS

Rated Voltage	250V 50/60Hz, or 600V dc
Test Voltage	2250V dc
Rated Current, I _R	10A @ 50°C*
Insulation Resistance	> 100MΩ
DC Resistance	< 2mΩ
Ambient Temperature Range	-55°C to +85°C
Climatic Category	55/85/21

*Current derating between 50°C and 85°C For temperature, $I_{\theta} = I_R \sqrt{(85 - \theta)/35}$

PRODUCT RANGE

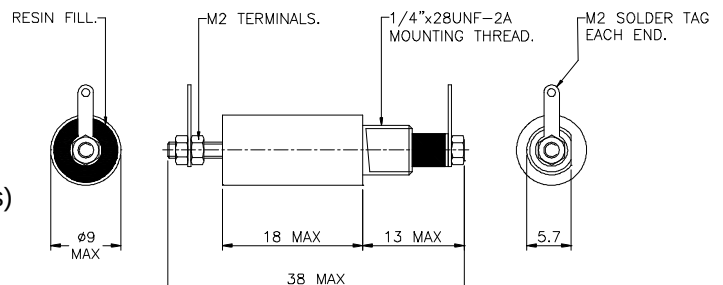
This range of capacitors is identical to the FC23725 – FC23727 range shown in previous catalogues

Part Number	Capacitance Value (nF ±20%)	Test Voltage (V dc)	Max Leakage Current (mA) @ 250V 50Hz	Typical Insertion Loss (dB) in 50 Ω system with/without load				
				10 MHz	30 MHz	100 MHz	300 MHz	1 GHz
DS23725	1.3	2250	0.12	7	16	26	36	46
DS23726	3.3	2250	0.31	14	24	34	44	54
DS23727	4.7	2250	0.45	17	27	37	47	57

DIMENSIONS AND MECHANICAL DETAILS

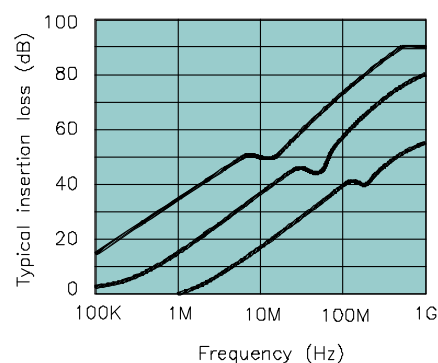
Dimensions in mm

Mounting hardware	8 A/F fixing nut and crinkle washer
Case	Nickel plated brass
Terminals	Nickel plated brass
Weight	5g
Tightening torque	Terminals 0.2Nm (use 2 spanners) Mounting thread 1Nm



DESCRIPTION

A range of ac feedthrough capacitors rated at 20A in a compact case size
 Capacitance values from 5nF to 300nF
 Test voltages of either 1250V dc or 2250V dc are offered
 RoHS compliant



Performance examples
 top 300nF
 middle 50nF
 bottom 5nF

RATINGS AND CHARACTERISTICS

Rated Voltage	250V ac 50/60Hz, or 600V dc
Test Voltage	As tabulated
Rated Current, I _R	20A @ 50°C
Insulation Resistance	> 100MΩ
DC Resistance	< 1mΩ
Ambient Temperature Range	-55°C to +85°C
Climatic Category	55/85/21

*Current derating between 50°C and 85°C

$$\text{For temperature, } \theta \quad I_{\theta} = I_R \sqrt{(85 - \theta) / 35}$$

PRODUCT RANGE

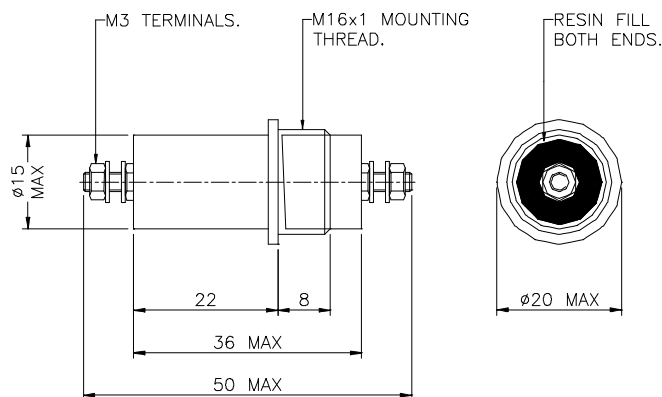
This range of capacitors is identical to the FC23684 – FC23691 range shown in previous catalogues

Part Number	Capacitance Value (nF ±20%)	Test Voltage (V dc)	Max Leakage Current (mA) @ 250V 50Hz	Typical Insertion Loss (dB) in 50 Ω system with/without load					
				300 kHz	1 MHz	10 MHz	100 MHz	300 MHz	1 GHz
DS23684	5	2250	0.5	-	2	17	37	47	57
DS23685	10	2250	1	1	6	24	44	54	64
DS23686	20	2250	1.9	3	10	30	46	60	70
DS23687	50	2250	4.7	8	18	38	58	68	78
DS23688	80	2250	7.5	12	22	42	62	72	82
DS23689	100	1250	9.4	14	24	44	70	74	84
DS23690	200	1250	19	20	30	50	74	80	90
DS23691	300	1250	28	24	34	50	74	84	90

DIMENSIONS AND MECHANICAL DETAILS

Dimensions in mm

Mounting hardware	19 A/F fixing nut and washer
Case	Nickel plated brass
Terminals	Nickel plated brass
Weight	25g
Max tightening torque:	
Terminals	0.5Nm (use 2 spanners)
Mounting thread	7Nm



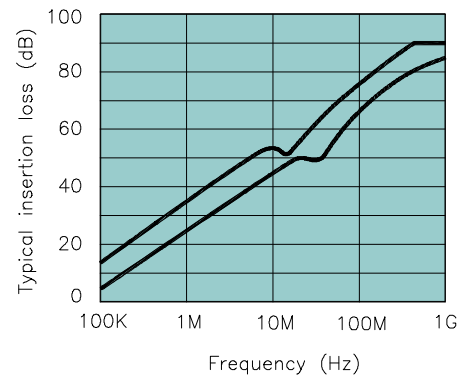


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AC FEEDTHROUGH CAPACITORS – 20A 400Hz

DESCRIPTION

A range of 115V 400Hz ac feedthrough capacitors rated at 20A in a compact case size
Capacitance values from 100nF to 250nF
Test voltage is 1250V dc
RoHS compliant



Performance examples top 250nF
 bottom 100nF

RATINGS AND CHARACTERISTICS

Rated Voltage	115V 400Hz, or 250V ac 50/60Hz, or 600V dc
Test Voltage	1250V dc
Rated Current, I_R	20A @ 50°C*
Insulation Resistance	> 100MΩ
DC Resistance	< 1mΩ
Ambient Temperature Range	-55°C to +70°C
Climatic Category	55/70/21

*Current derating between 50°C and 70°C

For temperature, θ $I_\theta = I_R \sqrt{(70 - \theta) / 20}$

PRODUCT RANGE

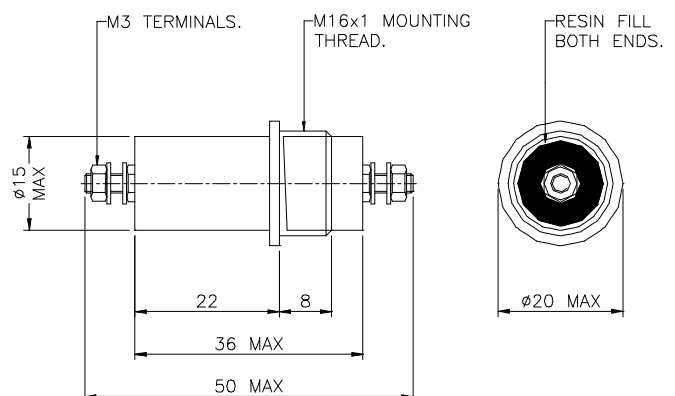
This range of capacitors is identical to the FC25840 – FC25842 range shown in previous catalogues

Part Number	Capacitance Value (nF ±20%)	Test Voltage (V dc)	Max Leakage Current (mA) @ 115V 400Hz	Typical Insertion Loss (dB) in 50 Ω system with/without load					
				300 kHz	1 MHz	10 MHz	100 MHz	300 MHz	1 GHz
DS25840	100	1250	35	14	24	44	70	74	84
DS25841	200	1250	70	20	30	50	74	80	90
DS25842	250	1250	87	22	32	50	74	82	90

DIMENSIONS AND MECHANICAL DETAILS

Dimensions in mm

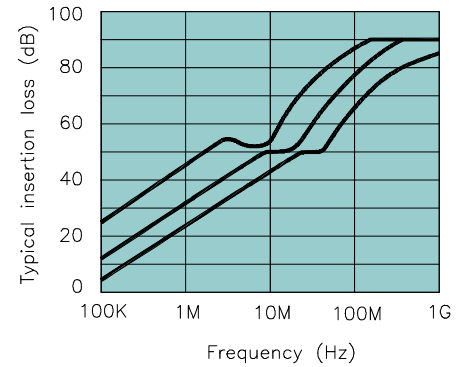
Mounting hardware	19 A/F fixing nut and washer
Case	Nickel plated brass
Terminals	Nickel plated brass
Weight	25g
Max tightening torque:	
Terminals	0.5Nm (use 2 spanners)
Mounting thread	7Nm





DESCRIPTION

A range of ac feedthrough capacitors rated at 100A
Capacitance values from 0.1μF to 1μF
Test voltages of either 1250V dc or 2250V dc are offered
RoHS compliant



RATINGS AND CHARACTERISTICS

Rated Voltage	250V 50/60Hz, or 600V dc
Test Voltage	As tabulated
Rated Current, I _R	100A @ 50°C*
Insulation Resistance	> 100MΩ
DC Resistance	< 0.5mΩ
Ambient Temperature Range	-55°C to +85°C
Climatic Category	55/85/21

*Current derating between 50°C and 85°C

For temperature, θ $I_{\theta} = I_R \sqrt{(85 - \theta)/35}$

PRODUCT RANGE

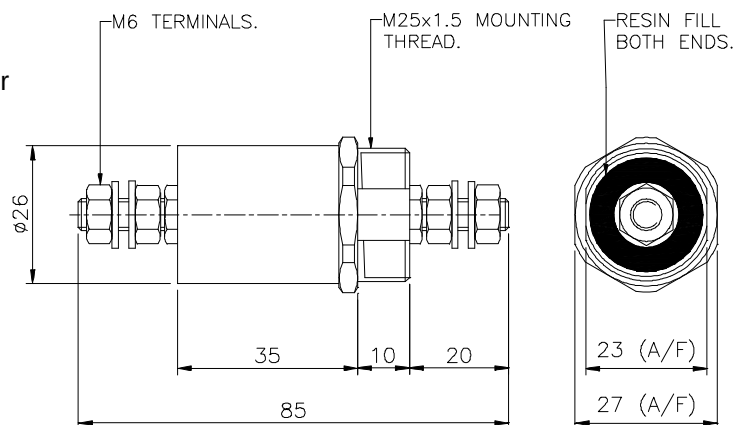
This range of capacitors is identical to the FC25180 – FC25184 range shown in previous catalogues

Part Number	Capacitance Value (nF ±20%)	Test Voltage (V dc)	Max Leakage Current (mA) @ 250V 50Hz	Typical Insertion Loss (dB) in 50 Ω system with/without load					
				100 kHz	300 kHz	1 MHz	10 MHz	100 MHz	1 GHz
DS25180	100	2250	9.4	5	14	24	44	70	84
DS25181	200	2250	19	10	20	30	50	74	90
DS25182	250	2250	24	12	22	32	50	74	90
DS25183	500	1250	47	18	28	38	50	78	90
DS25184	1000	1250	94	24	34	44	52	84	90

DIMENSIONS AND MECHANICAL DETAILS

Dimensions in mm

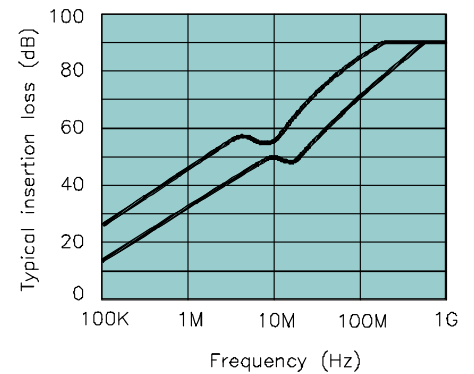
Mounting hardware	30 A/F fixing nut and washer
Case	Nickel plated brass
Terminals	Nickel plated brass
Weight	120g
Max tightening torque:	
Terminals	2.5Nm (use 2 spanners)
Mounting thread	14Nm





DESCRIPTION

A range of 115V 400Hz feedthrough capacitors rated at 100A
Capacitance values from 0.3μF to 1μF
Test voltage is 1250V dc
RoHS compliant



Performance examples top 1000nF
Bottom 300nF

RATINGS AND CHARACTERISTICS

Rated Voltage	115V 400Hz, or 250V ac 50/60Hz, or 600V dc
Test Voltage	1250V dc
Rated Current, I _R	100A @ 50°C*
Insulation Resistance	> 100MΩ
DC Resistance	< 0.5mΩ
Ambient Temperature Range	-55°C to +70°C
Climatic Category	55/70/21

*Current derating between 50°C and 70°C

For temperature, θ $I_{\theta} = I_R \sqrt{(70 - \theta) / 20}$

PRODUCT RANGE

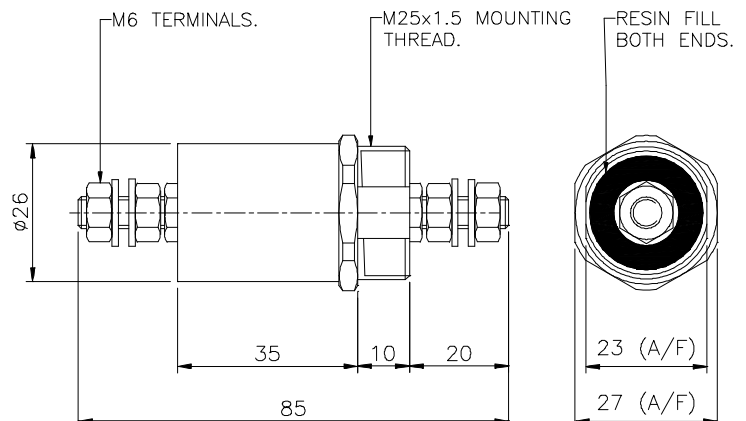
This range of capacitors is identical to the FC25844 – FC25846 range shown in previous catalogues

Part Number	Capacitance Value (nF ±20%)	Test Voltage (V dc)	Max Leakage Current (mA) @ 115V 400Hz	Typical Insertion Loss (dB) in 50 Ω system with/without load					
				100 kHz	300 kHz	1 MHz	10 MHz	100 MHz	1 GHz
DS25844	300	1250	104	14	24	34	50	74	90
DS25845	500	1250	174	18	28	38	50	78	90
DS25846	1000	1250	347	24	34	44	52	84	90

DIMENSIONS AND MECHANICAL DETAILS

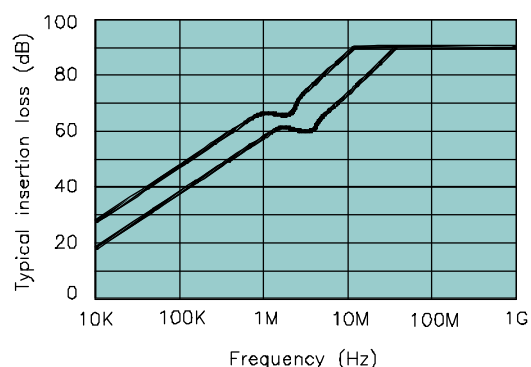
Dimensions in mm

Mounting hardware	30 A/F fixing nut and washer
Case	Nickel plated brass
Terminals	Nickel plated brass
Weight	120g
Max tightening torque:	
Terminals	2.5Nm (use 2 spanners)
Mounting thread	14Nm



DESCRIPTION

A range of high current ac feedthrough capacitors rated at 100A – 500A
 Capacitance values from 5μF to 15μF
 Test voltage is 1500V dc
 This range of capacitors has built-in discharge resistors for safety
 RoHS compliant



Performance examples top 15μF
 bottom 5μF

RATINGS AND CHARACTERISTICS

Rated Voltage	250V 50/60Hz, or 115V 400Hz, or 1000V dc
Test Voltage	1500V dc
Rated Current	As tabulated
Insulation Resistance	>100MΩ (prior to fitting discharge resistors)
Discharge resistance	600kΩ
Discharge time	<30s to below 34V
DC Resistance	As tabulated
Ambient Temperature Range	-55°C to +70°C
Climatic Category	55/70/21

PRODUCT RANGE

This range of capacitors is identical to the FC25151 – FC25167 range shown in previous catalogues

Part Number	Capacitance Value (μF ±20%)	Rated Current I _R (A) @ 40°C	Max Leakage Current (mA) @ 250V 50Hz	Typical Insertion Loss (dB) in 50 Ω system with/without load							
				10 kHz	30 kHz	100 kHz	300 kHz	1 MHz	10 MHz	100 MHz	1 GHz
DS25151	5	100	470	18	28	38	48	58	74	90	90
DS25152	10	100	940	24	34	44	54	61	83	90	90
DS25153	15	100	1410	27	37	47	57	64	87	90	90
DS25156	5	200	470	18	28	38	48	58	74	90	90
DS25157	10	200	940	24	34	44	54	61	83	90	90
DS25158	15	200	1410	27	37	47	57	64	87	90	90
DS25160	5	300	470	18	28	38	48	58	74	90	90
DS25161	10	300	940	24	34	44	54	61	83	90	90
DS25162	15	300	1410	27	37	47	57	64	87	90	90
DS25165	5	500	470	18	28	38	48	58	74	90	90
DS25166	10	500	940	24	34	44	54	61	83	90	90
DS25167	15	500	1410	27	37	47	57	64	87	90	90

Current derating between 40°C and 70°C

$$\text{For temperature, } \theta \quad I_{\theta} = I_R \sqrt{(70 - \theta) / 30}$$



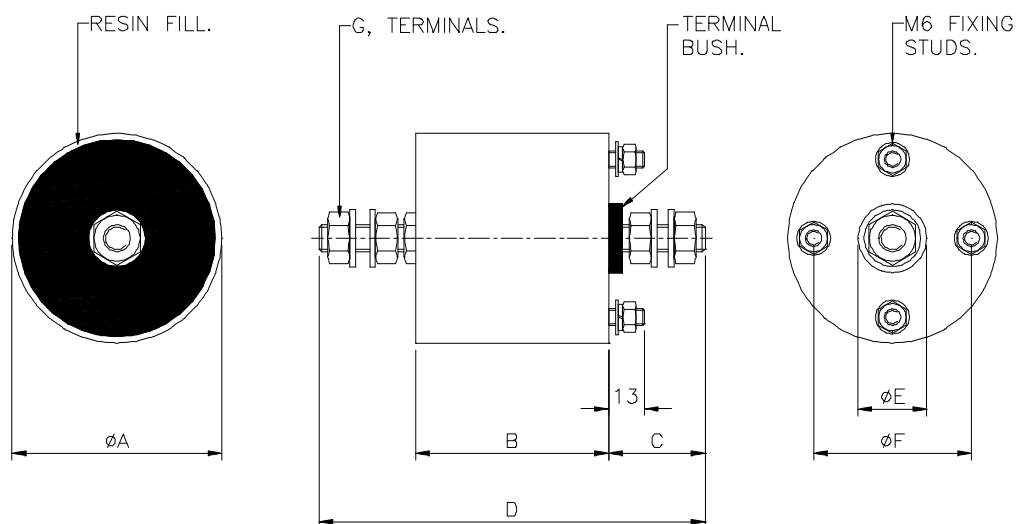
DIMENSIONS AND MECHANICAL DETAILS

Dimensions in mm

Mounting hardware
Case material
Max tightening torque:
Terminal thread
Fixing studs

Supplied with M6 fixing nuts and washers
Tin plated brass or steel, paint finish

As tabulated (use 2 spanners)
2.5Nm



Part Number	A	B	C	D	E	F p.c.d.	G Thread	Max torque on G (Nm)	Weight (g)
DS25151	76	70	25	120	25	57.2	M6	2.5	900
DS25152	76	70	25	120	25	57.2	M6	2.5	900
DS25123	95	70	25	120	25	76.2	M6	2.5	1400
DS25156	76	70	35	140	25	57.2	M10	8	900
DS25157	76	70	35	140	25	57.2	M10	8	900
DS25158	95	70	35	140	25	76.2	M10	8	1400
DS25160	76	70	40	150	32	57.2	M12	11	900
DS25161	76	70	40	150	32	57.2	M12	11	900
DS25162	95	70	40	150	32	76.2	M12	11	1400
DS25165	76	70	50	170	32	57.2	M16	20	900
DS25166	95	70	50	170	32	76.2	M16	20	1400
DS25167	95	70	50	170	32	76.2	M16	20	1400

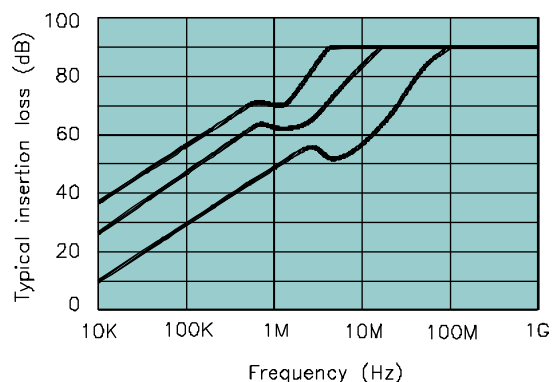
INSTALLATION

This range of capacitors should be securely mounted to the bulkhead by means of the four fixing studs in the base mounting plate. The base of the capacitor is left unpainted to ensure a good electrical interface with the bulkhead.



DESCRIPTION

A range of multi-line dc feedthrough capacitors rated at 100A in packages of 2, 3, and 4 lines
Capacitance values from 2μF to 40μF
Rated voltages from 30V dc to 400V dc
RoHS compliant



Performance examples

Capacitance	top	middle	bottom
40μF			
14μF			
2μF			

RATINGS AND CHARACTERISTICS

Rated Voltage	As tabulated
Test Voltage	Twice rated voltage
Rated Current, I _R	100A @ 50°C*
Insulation Resistance	> 100MΩ
DC Resistance	< 0.5mΩ
Ambient Temperature Range	-55°C to +85°C
Climatic Category	55/85/21
*Current derating between 50°C and 85°C	
For temperature, θ $I_{\theta} = I_R \sqrt{(85 - \theta)/35}$	

PRODUCT RANGE

This range of capacitors is identical to the FC34650 – FC34676 range shown in previous catalogues

Part Number 2 Line	Part Number 3 Line	Part Number 4 Line	Capacitance Value (μF ±20%)	Voltage Rating (V dc)	Typical Insertion Loss (dB) in 50 Ω system with/without load							
					10 kHz	30 kHz	100 kHz	300 kHz	1 MHz	10 MHz	100 MHz	1 GHz
DS34650	DS34660	DS34670	2	400	10	20	30	40	50	58	90	90
DS34651	DS34661	DS34671	4	250	16	26	36	46	56	70	90	90
DS34652	DS34662	DS34672	6	160	20	30	40	50	60	77	90	90
DS34653	DS34663	DS34673	14	100	27	37	47	57	63	87	90	90
DS34654	DS34664	DS34674	18	80	29	39	49	59	66	90	90	90
DS34655	DS34665	DS34675	25	63	32	42	52	62	66	90	90	90
DS34656	DS34666	DS34676	40	30	36	46	56	66	66	90	90	90

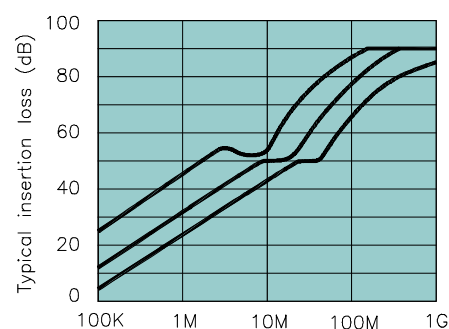
DIMENSIONS AND MECHANICAL DETAILS

Dimensions	See page 16
Case	Stainless Steel
Terminals	Nickel plated brass
Weight	2 Line: 230g 3 Line: 350g 4 Line: 450g
Tightening torque	2.5Nm (use 2 spanners)
Potting	Epoxy resin meeting UL94-V0



DESCRIPTION

A range of multi-line ac feedthrough capacitors rated at 100A
Capacitance values from 0.1μF to 1μF
Test voltages of either 1250V dc or 2250V dc are offered
RoHS compliant



Performance examples
Frequency (Hz)
top 1000nF
middle 250nF
bottom 100nF

RATINGS AND CHARACTERISTICS

Rated Voltage	250V 50/60Hz, or 600V dc
Test Voltage	As tabulated
Rated Current, I _R	100A @ 50°C*
Insulation Resistance	> 100MΩ
DC Resistance	< 0.5mΩ
Ambient Temperature Range	-55°C to +85°C
Climatic Category	55/85/21

*Current derating between 50°C and 85°C

$$\text{For temperature, } \theta \quad I_{\theta} = I_R \sqrt{(85 - \theta) / 35}$$

PRODUCT RANGE

This range of capacitors is identical to the FC34680 – FC34694 range shown in previous catalogues

Part Number 2 Line	Part Number 3 Line	Part Number 4 Line	Capacitance Value (nF ±20%)	Test Voltage (V dc)	Max Leakage Current (mA) @ 250V 50Hz	Typical Insertion Loss (dB) in 50 Ω system with/without load					
						100 kHz	300 kHz	1 MHz	10 MHz	100 MHz	1 GHz
DS34680	DS34685	DS34690	100	2250	9.4	5	14	24	44	70	84
DS34681	DS34686	DS34691	200	2250	19	10	20	30	50	74	90
DS34682	DS34687	DS34692	250	2250	24	12	22	32	50	74	90
DS34683	DS34688	DS34693	500	1250	47	18	28	38	50	78	90
DS34684	DS34689	DS34694	1000	1250	94	24	34	44	52	84	90

DIMENSIONS AND MECHANICAL DETAILS

Dimensions	See page 16
Case	Stainless steel
Terminals	Nickel plated brass
Weight	2 Line: 230g 3 Line: 350g 4 Line: 450g
Tightening torque	2.5Nm (use 2 spanners)
Potting	Epoxy resin meeting UL94-V0

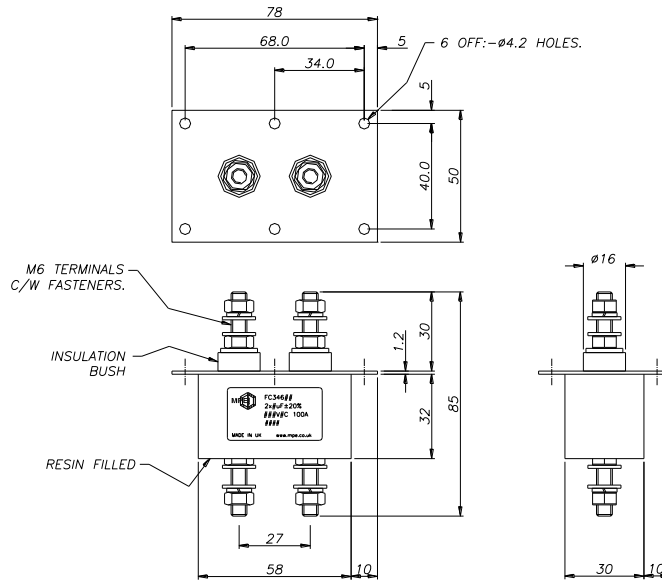


MPE
Quality. Reliability. Performance

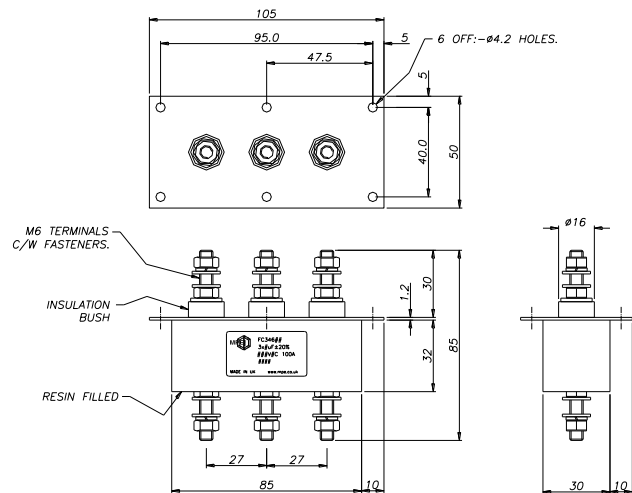
MULTI-LINE CAPACITORS - DIMENSIONS

DIMENSIONS Dimensions in mm

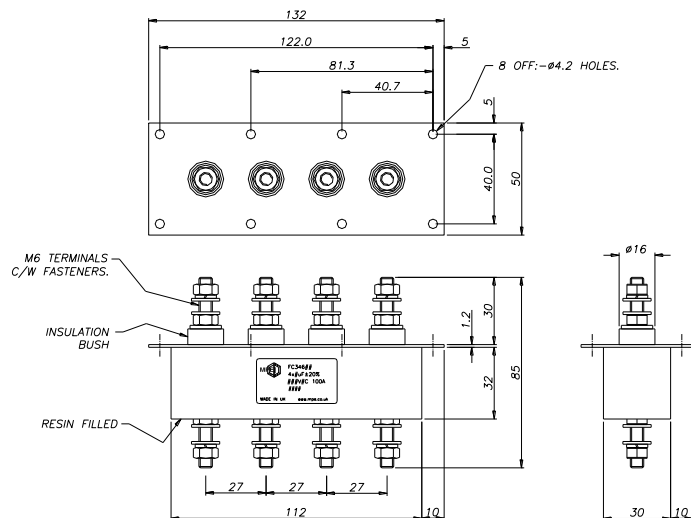
2 Line Filters



3 Line Filters



4 Line Filters





DESCRIPTION

A range of ac mains feedthrough capacitors designed to meet the very stringent safety requirements of EN60384-14:2005 class Y2 including the 5000V pulse test.

Suitable for all high performance applications requiring high reliability coupled with good high frequency performance such as mains power supplies for servers, base stations, and switches.



FEATURES

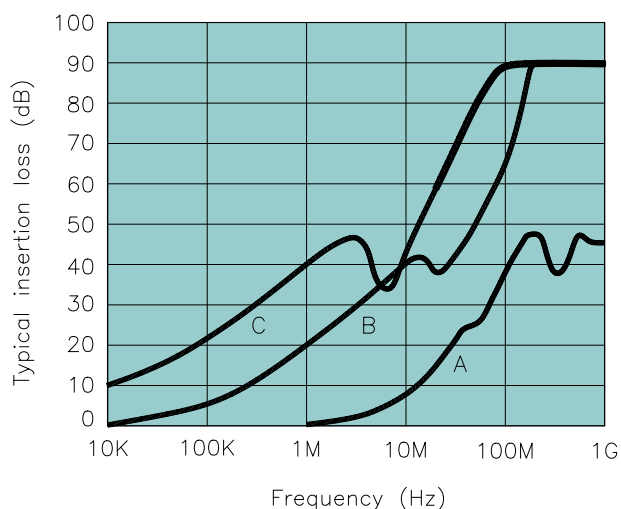
- 250V ac rating
- 10A - 300A current ratings
- Class Y2 capacitors
- 5000V pulse withstand
- Designed in accordance with EN60950
- RoHS compliant

RATINGS AND CHARACTERISTICS

Rated Voltage	250V ac 50/60 Hz
Test Voltage	5000V dc 2 seconds
Capacitor Class (EN60384-14:2005)	Y2
Pulse Test (EN60384-14:2005)	5000V peak
Insulation Resistance (within 1 minute)	For C < 0.33 μ F, R > 15000M Ω For C > 0.33 μ F, RC > 5000s (M Ω . μ F)
Ambient Temperature Range	-40°C to +60°C (+40°C for 250A & 300A units)
Category Temperature Range	-40°C to +85°C
Climatic Category	40/85/21
MTBF	Typically >10million hours
Insulating materials flammability rating	UL94 V-0

INSERTION LOSS

Graphical examples of performance from range (see overleaf for tabulated performance of full range)



A = 2.2nF DS34140

B = 100nF DS34153

C = 1000nF DS34161



PRODUCT RANGE

This range of capacitors is identical to the FC34140 – FC34220 range shown in previous catalogues

Part Number	Current Rating I_R (A) @60°C*	Capacitance Value (nF ±20%)	Maximum Leakage Current (mA)	Typical Insertion Loss (dB) in 50 Ω system with/without load							
				10 kHz	30 kHz	100 kHz	300 kHz	1 MHz	10 MHz	100 MHz	1 GHz
DS34140	10	2.2	0.21	-	-	-	-	-	8	38	45
DS34141	10	4.7	0.44	-	-	-	-	-	14	43	60
DS34142	16	4.7	0.44	-	-	-	-	-	14	43	60
DS34143	16	10	0.94	-	-	-	-	3	21	45	70
DS34144	16	47	4.4	-	-	2	6	15	34	50	90
DS34145	16	100	9.4	-	2	5	11	20	40	65	90
DS34146	20	4.7	0.44	-	-	-	-	-	14	43	60
DS34147	32	4.7	0.44	-	-	-	-	-	14	43	60
DS34148	32	10	0.94	-	-	-	-	3	21	45	70
DS34149	32	33	3.1	-	-	-	4	12	30	48	90
DS34150	32	47	4.4	-	-	2	6	15	34	50	90
DS34151	32	100	9.4	-	2	5	11	20	40	65	90
DS34162	63	10	0.94	-	-	-	-	3	21	45	70
DS34152	63	47	4.4	-	-	2	6	15	34	50	90
DS34153	63	100	9.4	-	2	5	11	20	40	65	90
DS34154	100	47	4.4	-	-	2	6	15	34	50	90
DS34155	100	100	9.4	-	2	5	11	20	40	65	90
DS34156	100	220	21	-	4	11	18	27	45	85	90
DS34157	100	470	44	6	9	16	22	33	33	90	90
DS34158	200	100	9.4	-	2	5	11	20	40	65	90
DS34159	200	220	21	-	4	11	18	27	45	85	90
DS34160	200	470	44	6	9	16	22	33	33	90	90
DS34161	200	1000	94	10	15	22	30	40	42	90	90
DS34260	250	100	9.4	-	2	5	11	20	40	65	90
DS34261	250	220	21	-	4	11	18	27	45	85	90
DS34262	250	470	44	6	9	16	22	33	33	90	90
DS34221	250	1000	94	10	15	22	30	40	42	90	90
DS34263	300	100	9.4	-	2	5	11	20	40	65	90
DS34264	300	220	21	-	4	11	18	27	45	85	90
DS34265	300	470	44	6	9	16	22	33	33	90	90
DS34220	300	1000	94	10	15	22	30	40	42	90	90

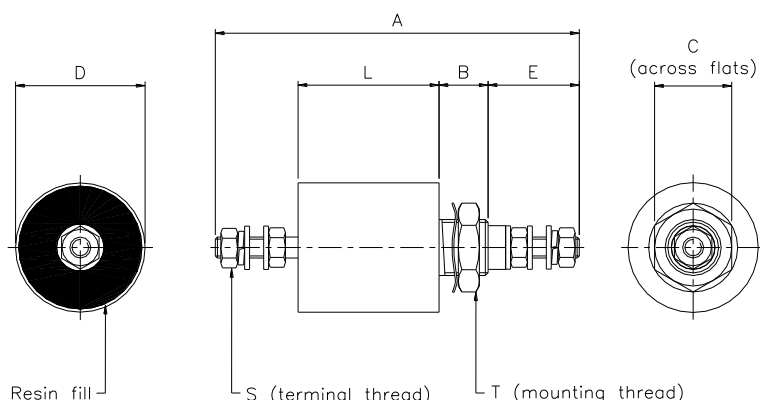
* 40°C for 250A and 300A capacitors

Current derating between 60°C and 85°C: $I_\theta = I_R \sqrt{(85-\theta)/25}$

except for 250A and 300A capacitors, current derating between 40°C and 85°C: $I_\theta = I_R \sqrt{(85-\theta)/45}$



DIMENSIONS AND MECHANICAL DETAILS



Part Number	Dimensions (mm)										Weight (g)
	D ± 0.5	L ±1	A ±1	B ±1	C	E ±2	T	Torque on T (N-m)	S	Torque on S (N-m)	
DS34140	15	18	57	10	13	16	M10 x 1	3	M3	0.5	22
DS34141	15	18	57	10	13	16	M10 x 1	3	M3	0.5	22
DS34142	20	18	63	12	17	18	M12 x 1	4	M4	1.2	36
DS34143	20	18	63	12	17	18	M12 x 1	4	M4	1.2	36
DS34144	20	30	75	12	17	18	M12 x 1	4	M4	1.2	60
DS34145	25	30	77	14	22	18	M16 x 1	7	M4	1.2	75
DS34146	20	18	63	12	17	18	M12 x 1	4	M4	1.2	36
DS34147	20	18	63	12	17	18	M12 x 1	4	M4	1.2	36
DS34148	20	18	63	12	17	18	M12 x 1	4	M4	1.2	36
DS34149	20	30	75	12	17	18	M12 x 1	4	M4	1.2	60
DS34150	20	30	75	12	17	18	M12 x 1	4	M4	1.2	60
DS34151	25	30	77	14	22	18	M16 x 1	7	M4	1.2	75
DS34162	25	30	96	14	22	26	M16 x 1	7	M6	2.5	85
DS34152	25	30	96	14	22	26	M16 x 1	7	M6	2.5	85
DS34153	25	30	96	14	22	26	M16 x 1	7	M6	2.5	85
DS34154	32	33	113	16	27	32	M20 x 1	10	M8	5	160
DS34155	32	33	113	16	27	32	M20 x 1	10	M8	5	160
DS34156	38	33	116	19	27	32	M24 x 1	14	M8	5	200
DS34157	38	50	133	19	27	32	M24 x 1	14	M8	5	260
DS34158	38	33	130	19	27	40	M24 x 1	14	M10	8	200
DS34159	38	33	130	19	27	40	M24 x 1	14	M10	8	200
DS34160	54	50	147	19	40	40	M27 x 1.5	16	M10	8	560
DS34161	54	50	147	19	40	40	M27 x 1.5	16	M10	8	560
DS34260	54	42	148	19	40	46	M32 x 1.5	24	M12	11	600
DS34261	54	42	148	19	40	46	M32 x 1.5	24	M12	11	600
DS34262	54	54	160	19	40	46	M32 x 1.5	24	M12	11	650
DS34221	54	54	160	19	40	46	M32 x 1.5	24	M12	11	650
DS34263	54	42	148	19	40	46	M32 x 1.5	24	M16	20	750
DS34264	54	42	148	19	40	46	M32 x 1.5	24	M16	20	750
DS34265	54	54	160	19	40	46	M32 x 1.5	24	M16	20	850
DS34220	54	54	160	19	40	46	M32 x 1.5	24	M16	20	850



DESCRIPTION

A range of dc feedthrough capacitors designed to meet the very stringent safety requirements of EN60384-14:2005 class Y4 including the 2500V pulse test. Suitable for all high performance applications requiring high reliability coupled with good high frequency performance such as servers, base stations, and switches.



FEATURES

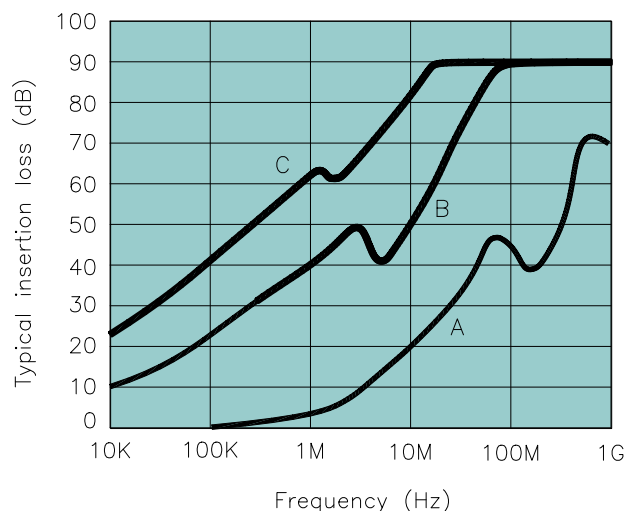
- 130V dc/ac rating
- 10A - 300A current ratings
- Class Y4 capacitors
- 2500V pulse withstand
- Designed in accordance with EN60950
- RoHS compliant

RATINGS AND CHARACTERISTICS

Rated Voltage	130V dc (also 130V ac 50/60 Hz)
Test Voltage	2500V dc 2 seconds
Capacitor Class (EN60384-14:2005)	Y4
Pulse Test (EN60384-14:2005)	2500V peak
Insulation Resistance (within 1 minute)	For C < 0.33 μ F, R > 15000M Ω For C > 0.33 μ F, RC > 5000s (M Ω . μ F)
Ambient Temperature Range	-40°C to +60°C (+40°C for 250A & 300A units)
Category Temperature Range	-40°C to +85°C
Climatic Category	40/85/21
MTBF	Typically >10million hours
Insulating materials flammability rating	UL94 V-0

INSERTION LOSS

Graphical examples of performance from range (see overleaf for tabulated performance of full range)



A = 10nF DS34170

B = 1000nF DS34186

C = 8000nF DS34272



PRODUCT RANGE

This range of capacitors is identical to the FC34170 – FC34275 range shown in previous catalogues

Part Number	Current Rating I_R (A) @60°C*	Capacitance Value (nF ±20%)	Typical Insertion Loss (dB) in 50 Ω system with/without load							
			10 kHz	30 kHz	100 kHz	300 kHz	1 MHz	10 MHz	100 MHz	1 GHz
DS34170	10	10	-	-	-	-	3	21	45	70
DS34171	16	10	-	-	-	-	3	21	45	70
DS34172	16	47	-	-	2	6	15	34	50	90
DS34173	16	100	-	2	5	11	20	40	65	90
DS34174	16	470	6	9	15	22	33	33	90	90
DS34175	32	10	-	-	-	-	3	21	45	70
DS34176	32	47	-	-	2	6	15	34	50	90
DS34177	32	100	-	2	5	11	20	40	65	90
DS34178	32	470	6	9	15	22	33	33	90	90
DS34179	63	10	-	-	-	-	3	21	45	70
DS34180	63	47	-	-	2	6	15	34	50	90
DS34181	63	100	-	2	5	11	20	40	65	90
DS34182	63	470	6	9	15	22	33	33	90	90
DS34183	100	47	-	-	2	6	15	34	50	90
DS34184	100	100	-	2	5	11	20	40	65	90
DS34185	100	470	6	9	15	22	33	33	90	90
DS34186	100	1000	10	15	24	32	42	50	90	90
DS34187	200	100	-	2	5	11	20	40	65	90
DS34188	200	470	6	9	15	22	33	33	90	90
DS34189	200	1000	10	15	24	32	42	50	90	90
DS34190	200	4700	18	26	36	45	52	70	90	90
DS34270	250	1000	10	15	24	32	42	50	90	90
DS34271	250	3300	13	21	31	42	50	58	90	90
DS34272	250	8000	22	31	41	52	62	82	90	90
DS34273	300	1000	10	15	24	32	42	50	90	90
DS34274	300	3300	13	21	31	42	50	58	90	90
DS34275	300	8000	22	31	41	52	62	82	90	90

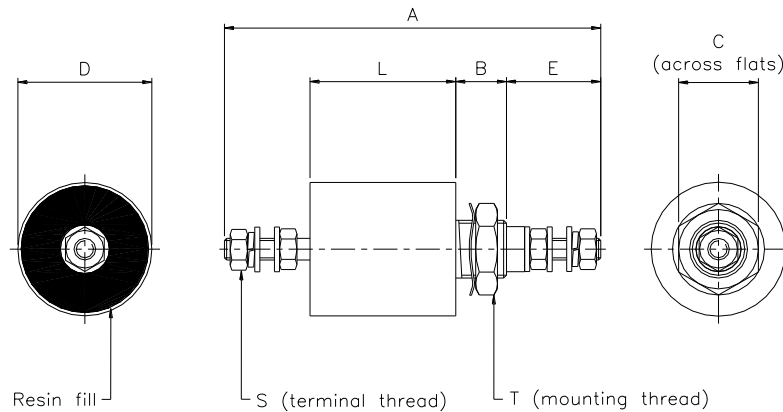
* 40°C for 250A and 300A capacitors

Current derating between 60°C and 85°C: $I_\theta = I_R \sqrt{(85-\theta)/25}$

except for 250A and 300A capacitors, current derating between 40°C and 85°C: $I_\theta = I_R \sqrt{(85-\theta)/45}$



DIMENSIONS AND MECHANICAL DETAILS



Part Number	Dimensions (mm)										Weight (g)
	D ± 0.5	L ±1	A ±1	B ±1	C	E ±2	T	Torque on T (N-m)	S	Torque on S (N-m)	
DS34170	15	18	57	10	13	16	M10 x 1	3	M3	0.5	22
DS34171	20	18	63	12	17	18	M12 x 1	4	M4	1.2	36
DS34172	20	30	75	12	17	18	M12 x 1	4	M4	1.2	60
DS34173	20	30	75	12	17	18	M12 x 1	4	M4	1.2	60
DS34174	32	33	82	16	27	18	M20 x 1	10	M4	1.2	140
DS34175	20	18	63	12	17	18	M12 x 1	4	M4	1.2	36
DS34176	20	30	75	12	17	18	M12 x 1	4	M4	1.2	60
DS34177	20	30	75	12	17	18	M12 x 1	4	M4	1.2	60
DS34178	32	33	82	16	27	18	M20 x 1	10	M4	1.2	140
DS34179	25	30	96	14	22	26	M16 x 1	7	M6	2.5	85
DS34180	25	30	96	14	22	26	M16 x 1	7	M6	2.5	85
DS34181	25	30	96	14	22	26	M16 x 1	7	M6	2.5	85
DS34182	32	33	101	16	27	26	M20 x 1	10	M6	2.5	150
DS34183	32	33	113	16	27	32	M20 x 1	10	M8	5	160
DS34184	32	33	113	16	27	32	M20 x 1	10	M8	5	160
DS34185	32	33	113	16	27	32	M20 x 1	10	M8	5	160
DS34186	38	50	133	19	27	32	M24 x 1	14	M8	5	260
DS34187	32	33	130	19	27	40	M24 x 1	14	M10	8	180
DS34188	32	33	130	19	27	40	M24 x 1	14	M10	8	180
DS34189	38	50	147	19	27	40	M24 x 1	14	M10	8	280
DS34190	54	68	165	19	40	40	M27 x 1.5	16	M10	8	680
DS34270	54	42	148	19	40	46	M32 x 1.5	24	M12	11	600
DS34271	54	54	160	19	40	46	M32 x 1.5	24	M12	11	650
DS34272	54	72	178	19	40	46	M32 x 1.5	24	M12	11	850
DS34273	54	42	148	19	40	46	M32 x 1.5	24	M16	20	750
DS34274	54	54	160	19	40	46	M32 x 1.5	24	M16	20	850
DS34275	54	72	178	19	40	46	M32 x 1.5	24	M16	20	900



DESCRIPTION

A range of ac mains feedthrough filters designed to meet the very stringent safety requirements of EN60939-2:2005. Capacitors comply with class Y2 rating including the 5000V pulse test. Suitable for all high performance applications requiring high reliability coupled with good high frequency performance such as mains power supplies for servers, base stations, and switches.



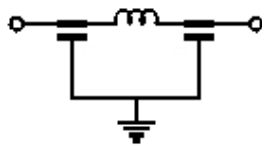
FEATURES

- 250V ac rating
- 10A - 300A current ratings
- Incorporate class Y2 capacitors
- 5000V pulse withstand
- Designed in accordance with EN60950
- RoHS compliant

RATINGS AND CHARACTERISTICS

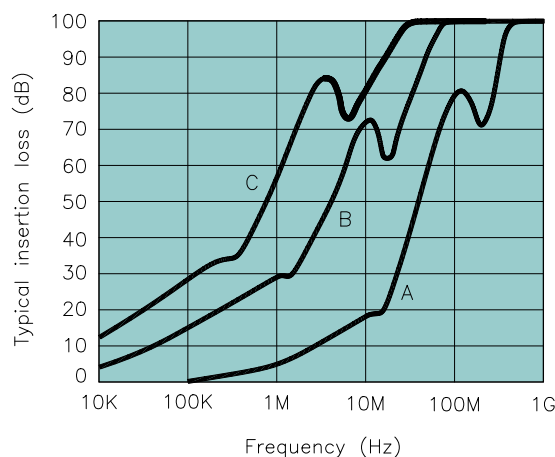
Rated Voltage	250V ac 50/60 Hz
Test Voltage	5000V dc 2 seconds
Capacitor Class (EN132400)	Y2
Pulse Test (EN132400)	5000V peak
Insulation Resistance (within 1 minute)	For $C < 0.33\mu\text{F}$, $R > 15000\text{M}\Omega$ For $C > 0.33\mu\text{F}$, $RC > 5000\text{s (M}\Omega\cdot\mu\text{F)}$
Ambient Temperature Range	-40°C to +60°C (+50°C for 200A units) (+40°C for 250A & 300A units)
Category Temperature Range	-40°C to +85°C
Climatic Category	40/85/21
MTBF	Typically >5 million hours
Insulating materials flammability rating	UL94 V-0

CIRCUIT



INSERTION LOSS

Graphical examples of performance from range (see overleaf for tabulated performance of full range)



A = DS34200

B = DS34209

C = DS34229



PRODUCT RANGE

This range of filters is identical to the FF34200 – FF34229 range shown in previous catalogues

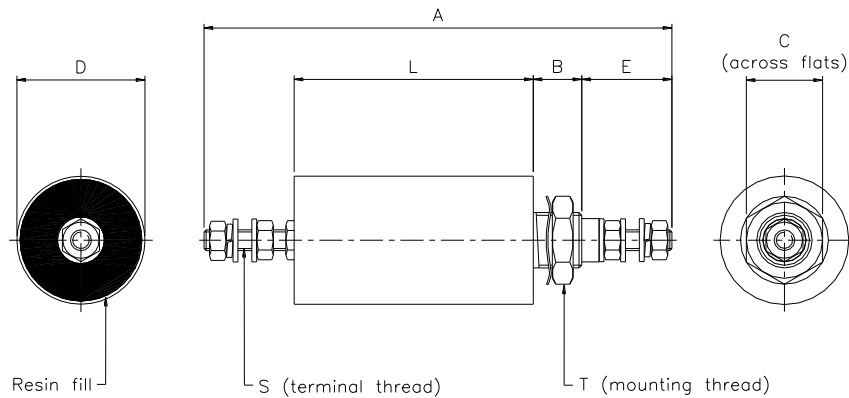
Part Number	Current Rating I _R (A) @60°C*	Capacitance (nF ±20%)	Inductance (nH)	Maximum Leakage Current (mA)	DC Resistance (mΩ)	Typical Insertion Loss (dB) in 50 Ω system with/without load							
						10 kHz	30 kHz	100 kHz	300 kHz	1 MHz	10 MHz	100 MHz	1 GHz
Standard Performance Range													
DS34200	10	2 x 4.7	70	0.9	6	-	-	-	-	4	18	80	100
DS34201	16	2 x 10	70	1.9	4	-	-	2	4	10	22	65	100
DS34202	32	2 x 10	70	1.9	4	-	-	2	4	10	22	65	100
DS34203	63	2 x 47	80	8.9	3	-	-	6	11	21	50	85	100
DS34204	100	2 x 100	90	19	2	-	2	10	18	27	60	100	100
DS34205	200	2 x 100	120	19	1	-	2	10	18	27	60	100	100
DS34222	250	2 x 100	160	19	<1	-	2	10	18	27	60	100	100
DS34226	300	2 x 100	160	19	<1	-	2	10	18	27	60	100	100
High Performance Range													
DS34206	10	2 x 10	140	1.9	7	-	-	2	3	10	28	65	100
DS34207	16	2 x 22	170	4.2	4	-	-	3	7	15	40	72	100
DS34208	32	2 x 22	170	4.2	4	-	-	3	7	15	40	72	100
DS34209	63	2 x 150	180	29	3	3	8	15	21	28	72	100	100
DS34210	100	2 x 470	240	89	2	7	14	22	30	40	80	100	100
DS34211	200	2 x 470	330	89	1	7	15	24	31	44	80	100	100
DS34224	250	2 x 470	330	89	<1	7	15	24	31	44	80	100	100
DS34228	300	2 x 470	330	89	<1	7	15	24	31	44	80	100	100
Extended Performance Range													
DS34212	10	2 x 47	210	8.9	9	-	-	5	12	21	60	90	100
DS34213	16	2 x 100	250	19	6	2	4	10	17	24	75	90	100
DS34214	32	2 x 100	250	19	6	2	4	10	17	24	75	90	100
DS34215	63	2 x 470	330	89	3	8	15	24	32	40	65	100	100
DS34216	100	2 x 1000	330	188	2	12	20	29	33	56	80	100	100
DS34217	200	2 x 1000	330	188	1	12	20	29	33	56	80	100	100
DS34225	250	2 x 1000	330	188	<1	12	20	29	33	56	80	100	100
DS34229	300	2 x 1000	330	188	<1	12	20	29	33	56	80	100	100

* 50°C for 200A filters, 40°C for 250A and 300A filters

Current derating between 60°C and 85°C:

$$\text{For temperature, } \theta \quad I_{\theta} = I_R \sqrt{(85 - \theta)/25}$$

except for 200A filters between 50°C and 85°C $I_{\theta} = I_R \sqrt{(85 - \theta)/35}$ and for 250A and 300A filters between 40°C and 85°C $I_{\theta} = I_R \sqrt{(85 - \theta)/45}$

**DIMENSIONS AND MECHANICAL DETAILS**

Part Number	Dimensions (mm)										Weight (g)
	D ± 0.5	L ± 1	A ± 2	B ± 1	C	E ± 2	T	Torque on T (N-m)	S	Torque on S (N-m)	
DS34200	20	57	98	12	17	16	M12 x 1	4	M3	0.5	80
DS34201	20	61	106	12	17	18	M12 x 1	4	M4	1.2	90
DS34202	20	61	106	12	17	18	M12 x 1	4	M4	1.2	90
DS34203	25	94	160	14	22	26	M16 x 1	7	M6	2.5	200
DS34204	32	104	184	16	27	32	M20 x 1	10	M8	5	290
DS34205	38	112	209	19	27	40	M24 x 1	14	M10	8	460
DS34222	54	93	200	19	40	46	M32 x 1.5	24	M12	11	1020
DS34226	54	93	200	19	40	46	M32 x 1.5	24	M16	20	1250
DS34206	20	66	107	12	17	16	M12 x 1	4	M3	0.5	90
DS34207	25	69	116	14	22	18	M16 x 1	7	M4	1.2	140
DS34208	25	69	116	14	22	18	M16 x 1	7	M4	1.2	140
DS34209	32	105	173	16	27	26	M20 x 1	10	M6	2.5	280
DS34210	38	145	228	19	27	32	M24 x 1	14	M8	5	600
DS34211	54	146	243	19	40	40	M27 x 1.5	16	M10	8	1350
DS34224	54	160	267	19	40	46	M32 x 1.5	24	M12	11	1480
DS34228	54	160	267	19	40	46	M32 x 1.5	24	M16	20	1750
DS34212	20	99	140	12	17	16	M12 x 1	4	M3	0.5	130
DS34213	25	101	148	14	22	18	M16 x 1	7	M4	1.2	200
DS34214	25	101	148	14	22	18	M16 x 1	7	M4	1.2	200
DS34215	54	118	189	19	40	26	M27 x 1.5	16	M6	2.5	1050
DS34216	54	144	227	19	40	32	M27 x 1.5	16	M8	5	1300
DS34217	54	146	243	19	40	40	M27 x 1.5	16	M10	8	1350
DS34225	54	160	267	19	40	46	M32 x 1.5	24	M12	11	1450
DS34229	54	160	267	19	40	46	M32 x 1.5	24	M16	20	1820

DESCRIPTION

A range of dc feedthrough filters designed to meet the very stringent safety requirements of EN60939-2:2005. Capacitors comply with class Y4 rating including the 2500V pulse test. Suitable for all high performance applications requiring high reliability coupled with good high frequency performance such as servers, base stations, and switches.



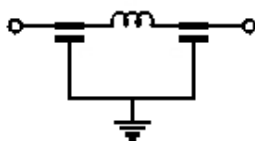
FEATURES

- 130V dc/ac rating
- 10A - 300A current ratings
- Incorporate class Y4 capacitors
- 2500V pulse withstand
- Designed in accordance with EN60950
- RoHS compliant

RATINGS AND CHARACTERISTICS

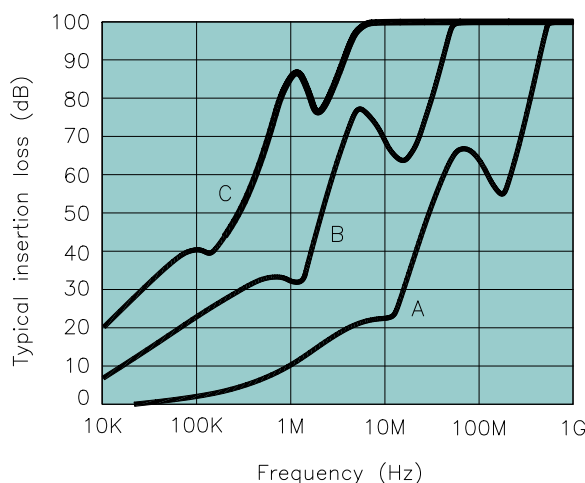
Rated Voltage	130V dc (also 130V ac 50/60Hz)
Test Voltage	2500V dc 2 seconds
Capacitor Class (EN132400)	Y4
Pulse Test (EN132400)	2500V peak
Insulation Resistance (within 1 minute)	For C < 0.33 μ F, R > 15000M Ω For C > 0.33 μ F, RC > 5000s (M Ω . μ F)
Ambient Temperature Range	-40°C to +60°C (+50°C for 200A units)
Category Temperature Range	-40°C to +85°C
Climatic Category	40/85/21
MTBF	Typically >5 million hours
Insulating materials flammability rating	UL94 V-0

CIRCUIT



INSERTION LOSS

Graphical examples of performance from range (see overleaf for tabulated performance of full range)



A = DS34230

B = DS34235

C = DS34241



PRODUCT RANGE

This range of filters is identical to the FF34230 – FF34241 range shown in previous catalogues

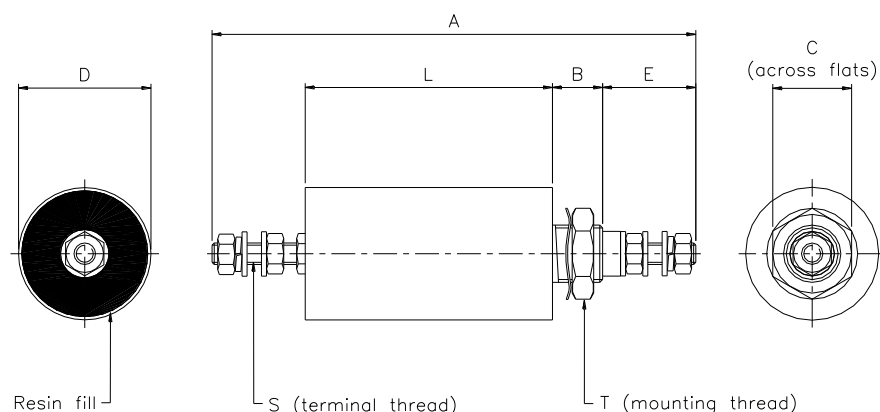
Part Number	Current Rating I _R (A) @60°C*	Capacitance (nF ±20%)	Inductance (nH)	DC Resistance (mΩ)	Typical Insertion Loss (dB) in 50 Ω system with/without load							
					10 KHz	30 kHz	100 kHz	300 kHz	1 MHz	10 MHz	100 MHz	1 GHz
Standard Performance Range												
DS34230	10	2 x 10	70	6	-	-	2	4	10	23	65	100
DS34231	16	2 x 10	70	4	-	-	2	4	10	23	65	100
DS34232	32	2 x 10	70	4	-	-	2	4	10	23	65	100
DS34233	63	2 x 100	80	3	2	4	10	18	27	62	95	100
DS34234	100	2 x 470	90	2	7	14	23	30	32	70	100	100
DS34235	200	2 x 470	120	1	7	14	23	30	32	70	100	100
High Performance Range												
DS34236	10	2 x 100	140	8	2	4	10	18	27	67	95	100
DS34237	16	2 x 100	140	5	2	4	10	18	27	67	95	100
DS34238	32	2 x 100	140	5	2	4	10	18	27	67	95	100
DS34239	63	2 x 470	180	3	7	14	23	31	35	75	100	100
DS34240	100	2 x 1000	240	2	14	21	30	34	53	75	100	100
DS34241	200	2 x 4700	330	2	20	32	40	52	85	100	100	100

* 50°C for 200A filters

Current derating between 60°C and 85°C: For temperature, θ $I_\theta = I_R \sqrt{(85-\theta)/25}$
except for 200A filters between 50°C and 85°C $I_\theta = I_R \sqrt{(85-\theta)/35}$



DIMENSIONS AND MECHANICAL DETAILS



Part Number	Dimensions (mm)										Weight (g)
	D ± 0.5	L ± 1	A ± 2	B ± 1	C	E ± 2	T	Torque on T (N-m)	S	Torque on S (N-m)	
DS34230	20	49	90	12	17	16	M12x1	4	M3	0.5	65
DS34231	20	53	98	12	17	18	M12x1	4	M4	1.2	70
DS34232	20	53	98	12	17	18	M12x1	4	M4	1.2	70
DS34233	25	94	160	14	22	26	M16x1	7	M6	2.5	190
DS34234	32	104	184	16	27	32	M20x1	10	M8	5	290
DS34235	38	112	209	19	27	40	M24x1	14	M10	8	460
DS34236	20	89	130	12	17	16	M12x1	4	M3	0.5	120
DS34237	20	94	139	12	17	18	M12x1	4	M4	1.2	130
DS34238	20	94	139	12	17	18	M12x1	4	M4	1.2	130
DS34239	32	105	173	16	27	26	M20x1	10	M6	2.5	280
DS34240	38	145	228	19	27	32	M24x1	14	M8	5	600
DS34241	54	182	279	19	40	40	M27x1.5	16	M10	8	1500



DESCRIPTION

A range of dc feedthrough capacitors designed for use on standard telecoms voltages of 24VDC and -48Vdc, and featuring a high test voltage for safety and reliability. Suitable for all high performance applications requiring high reliability coupled with good high frequency performance such as servers, base stations, and switches. Also ideal for other high performance low voltage dc applications such as military vehicles



FEATURES

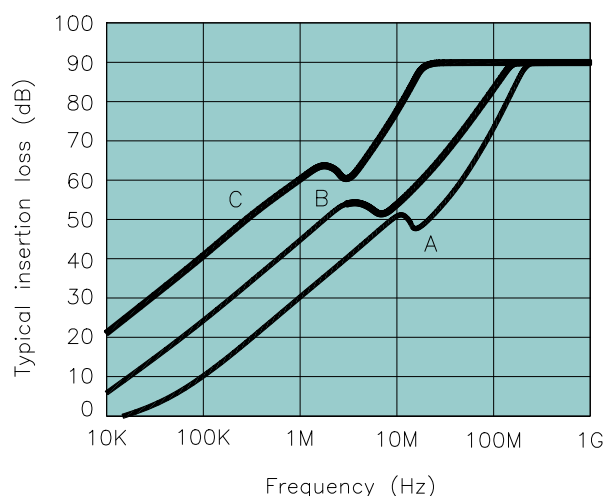
- Suitable for all dc telecoms voltages up to 100V dc, (160V dc for DS34576, 250V ac for DS34592)
- Proof test voltage of 1100Vdc (350V dc for DS34576, 800V dc for DS34553, 1420V dc for DS34592)
- 10A – 400A current ratings
- High capacitance per unit volume
- Designed generally in accordance with EN60950
- Other capacitance values and current ratings readily available
- Low cost variants available for very high volume applications

RATINGS AND CHARACTERISTICS

Rated voltage	100V dc (DS34576 - 160V dc, DS34592 – 250V ac)
Test voltage	1100V dc 2 seconds (DS34553 - 800V dc, DS34576 - 350V dc) (DS34592 – 1420V dc)
Insulation resistance	>500MΩ
Ambient temperature range (full load)	-40°C to +60°C (DS34576 & DS34592– upper temp depends on application and mounting details)
Category temperature range (no load)	-40°C to +85°C
Climatic category	40/85/21
MTBF	Typically > 10million hours
Insulating materials flammability rating	UL94 V-0

INSERTION LOSS

Graphical examples of performance from range (see overleaf for tabulated performance of full range)



A = 0.18µF DS34420

B = 1µF DS34422

C = 7.5µF DS34425



PRODUCT RANGE

This range of capacitors is identical to the FC34420 – FC34592 range shown in previous catalogues

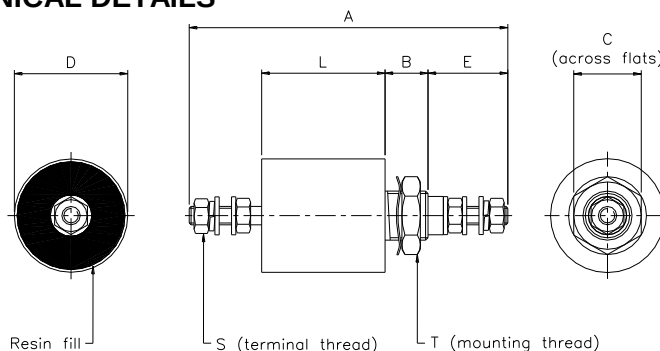
Part Number	Current Rating I_R (A) @60°C	Capacitance Value ($\mu\text{F} \pm 20\%$)	Typical Insertion Loss (dB) in 50 Ω system with/without load							
			10 kHz	30 kHz	100 kHz	300 kHz	1 MHz	10 MHz	100 MHz	1 GHz
DS34420	10	0.18	-	3	10	20	30	50	74	90
DS34421	16	0.47	3	10	20	30	40	50	80	90
DS34422	32	1	5	14	24	34	44	52	84	90
DS34423	63	1.8	8	17	27	37	47	55	87	90
DS34424	100	4.7	18	28	38	48	58	74	90	90
DS34425	200	7.5	21	31	41	51	60	79	90	90
DS34553	300	0.5	3	10	20	30	40	50	80	90
DS34576	400*	6	20	30	40	50	60	77	90	90
DS34592	400*	0.6	3	10	20	30	40	50	80	90

Current derating between 60°C and 85°C (except DS34576 & DS34592)

$$\text{For temperature, } \theta \quad I_\theta = I_R \sqrt{(85 - \theta)/25}$$

* For DS34576 & DS34592, max current rating, maximum temperature for rated current, and current derating to be confirmed by testing in application

DIMENSIONS AND MECHANICAL DETAILS



Note DS34553, DS34576 & DS34592 additionally have flats on mounting thread to aid installation

Part Number	Dimensions (mm)										Weight (g)
	D ± 0.5	L ± 1	A ± 1	B ± 1	C	E ± 2	T	Torque on T (N-m)	S	Torque on S (N-m)	
DS34420	15	18	57	10	13	16	M10 x 1	3	M3	0.5	22
DS34421	20	18	63	12	17	18	M12 x 1	4	M4	1.2	36
DS34422	20	30	75	12	17	18	M12 x 1	4	M4	1.2	60
DS34423	25	30	96	14	22	26	M16 x 1	7	M6	2.5	85
DS34424	38	33	116	19	27	32	M24 x 1	14	M8	5	200
DS34425	38	50	147	19	27	40	M24 x 1	14	M10	8	280
DS34553	35	22	102	10	32	42	M27x1.5	16	M12 (Copper)	11	260
DS34576	35	22	102	10	32	42	M27x1.5	16	M12 (Copper)	11	260
DS34592	35	22	102	10	32	42	M27x1.5	16	M12 (Copper)	11	260



DESCRIPTION

A range of ac feedthrough capacitors designed for use on mobile field generators with a nominal output of 250Vac, and featuring a high test voltage for safety and reliability. Also ideal for other 250Vac applications where high performance filtering is required



FEATURES

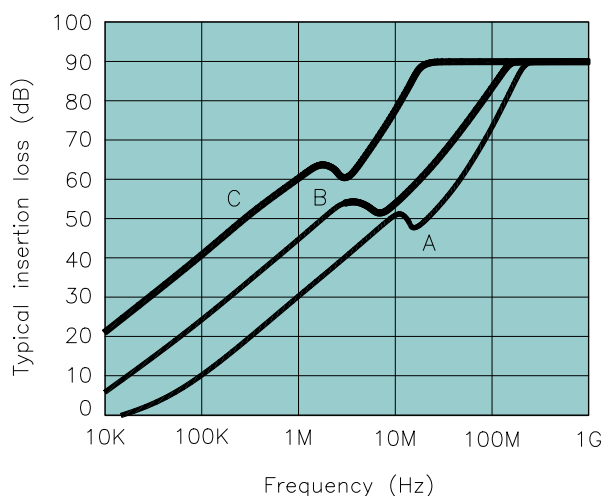
- Suitable for all ac generator voltages up to 250V ac
- Proof test voltage of 2250Vdc
- 10A – 300A current ratings
- High capacitance per unit volume
- Designed generally in accordance with EN60950
- Other capacitance values and current ratings readily available if required
- Ideal for mobile generator EMP protection systems when used in conjunction with high energy transient suppressors – please ask for advice on this application

RATINGS AND CHARACTERISTICS

Rated voltage	250V ac 50 – 400Hz (also suitable for 600Vdc)
Test voltage	2250V dc 2 seconds
Capacitance value	1 μ F +0% -20%
Insulation resistance	>500M Ω
Ambient temperature range (full load)	-40°C to +60°C
Category temperature range (no load)	-40°C to +85°C
Climatic category	40/85/21
MTBF	> 10million hours
Insulating materials flammability rating	UL94 V-0

INSERTION LOSS

Graphical examples of performance from range (see overleaf for tabulated performance)



B = 1 μ F



PRODUCT RANGE

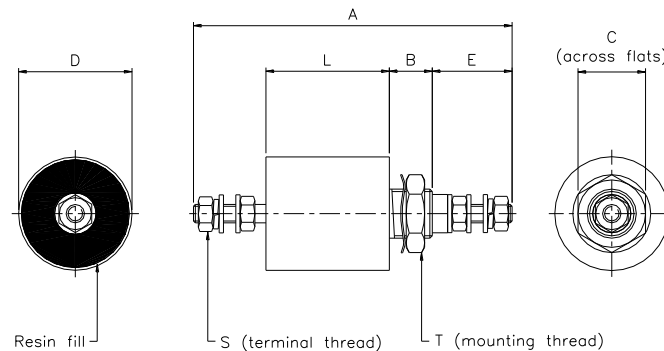
This range of capacitors is identical to the FC34464 – FC34471 range shown in previous catalogues

Part Number	Current Rating I_R (A) @60°C	Typical Insertion Loss (dB) in 50 Ω system with/without load							
		10 kHz	30 kHz	100 kHz	300 kHz	1 MHz	10 MHz	100 MHz	1 GHz
DS34464	10	5	14	24	34	44	52	84	90
DS34465	32	5	14	24	34	44	52	84	90
DS34466	63	5	14	24	34	44	52	84	90
DS34467	100	5	14	24	34	44	52	84	90
DS34468	160	5	14	24	34	44	52	84	90
DS34469	200	5	14	24	34	44	52	84	90
DS34470	250	5	14	24	34	44	52	84	90
DS34471	300	5	14	24	34	44	52	84	90

Current derating between 60°C and 85°C

$$\text{For temperature, } \theta \quad I_\theta = I_R \sqrt{(85 - \theta)/25}$$

DIMENSIONS AND MECHANICAL DETAILS



Part Number	Dimensions (mm)										Weight (g)
	D ± 0.5	L ± 1	A ± 1	B ± 1	C	E ± 2	T	Torque on T (N-m)	S	Torque on S (N-m)	
DS34464	25	50	94	14	22	16	M16 x 1	7	M3	0.5	120
DS34465	38	50	102	16	27	18	M20 x 1	10	M4	1.2	200
DS34466	38	50	122	19	27	26	M24 x 1	14	M6	2.5	250
DS34467	38	50	134	19	27	32	M24 x 1	14	M8	5	260
DS34468	38	50	148	19	27	40	M24 x 1	14	M10	8	280
DS34469	38	50	148	19	27	40	M24 x 1	14	M10	8	280
DS34470	54	54	160	19	40	46	M32 x 1.5	24	M12	11	650
DS34471	54	54	160	19	40	46	M32 x 1.5	24	M16	20	850



DESCRIPTION

A range of low cost feedthrough capacitors designed for high volume applications Suitable for use on standard dc telecoms voltages of 24Vdc and -48Vdc, as well as 250Vac Features a high test voltage for safety and reliability. Appropriate for use in all high performance applications requiring high reliability coupled with good high frequency performance such as servers, base stations, and switches.



FEATURES

- **Cost effective aluminium case design**
- **Suitable for multiple dc telecoms voltages**
- **High proof test voltage of 1200Vdc**
- **High capacitance per unit volume**
- **High reliability**
- **Other capacitance values, current ratings, and test voltages readily available**
- **Feedthrough filter versions also available**
- **RoHS compliant**

RATINGS AND CHARACTERISTICS

Rated voltage	250V dc / 250V ac 50/60Hz
Test voltage	1200V dc 2 seconds
Insulation resistance	>500MΩ
Ambient temperature range	-40°C to +50°C
Category temperature range	-40°C to +85°C
Climatic category	40/85/21
MTBF	> 10million hours
Insulating materials flammability rating	UL94 V-0
Case material	Aluminium
Terminals	Nickel plated brass

STANDARD RANGE

This range of capacitors is identical to the FC34430 – FC34433 range shown in previous catalogues

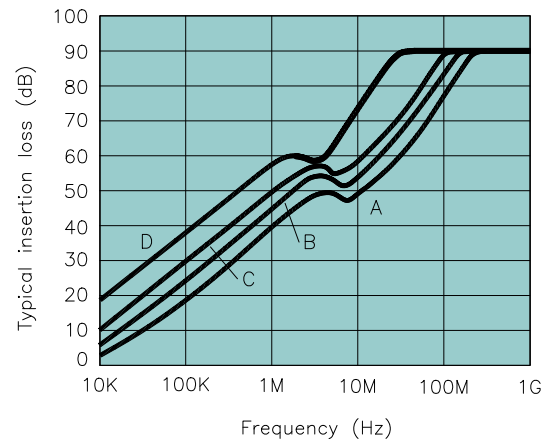
Part Number	Current Rating I_R (A) @50°C	Capacitance Value ($\mu\text{F} \pm 20\%$)	Major Dimensions (mm)			
			Diameter D	Length L	Terminal Stud S	Mounting Thread T
DS34430	75	0.5	32	25	M6	M20
DS34431	75	1	32	25	M6	M20
DS34432	75	2	32	34	M6	M20
DS34433	75	4	32	45	M6	M20

Current derating between 50°C and 85°C: For temperature, θ $I_\theta = I_R \sqrt{(85 - \theta)/35}$

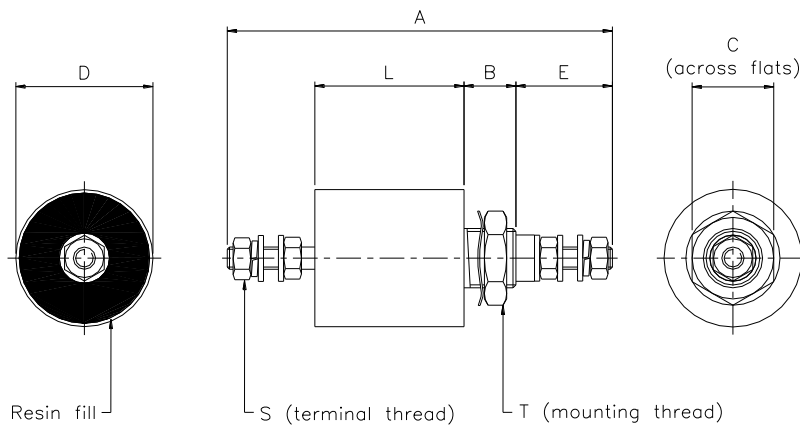


INSERTION LOSS

Part Number	Graph	Typical Insertion Loss (dB) in 50Ω system with/without load							
		10 kHz	30 kHz	100 kHz	300 kHz	1 MHz	10 MHz	100 MHz	1 GHz
DS34430	A	3	9	18	28	38	50	78	90
DS34431	B	5	14	24	34	44	52	84	90
DS34432	C	10	19	29	38	49	55	90	90
DS34433	D	18	28	38	48	58	74	90	90



DIMENSIONS AND MECHANICAL DETAILS



Part Number	Dimensions (mm)										Weight (g)
	D ± 0.5	L ± 1	A ± 1	B ± 1	C	E ± 2	T	Torque on T (N-m)	S	Torque on S (N-m)	
DS34430	32	25	79	13	27	23	M20x1	10	M6	2.5	95
DS34431	32	25	79	13	27	23	M20x1	10	M6	2.5	95
DS34432	32	34	88	13	27	23	M20x1	10	M6	2.5	105
DS34433	32	45	99	13	27	23	M20x1	10	M6	2.5	120



DESCRIPTION

A special low cost feedthrough filter designed for high volume telecoms base station applications
Designed to meet the requirements of EN60939-2:2005 for 250V ac filters incorporating class Y2 capacitors
Features a high pulse test voltage capability for safety and reliability
Appropriate for use in all high performance applications requiring high reliability coupled with good high frequency performance such as servers, base stations, and switches



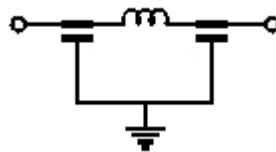
FEATURES

- **Cost effective aluminium case design**
- **Suitable for line to earth filtering on single & 3 phase ac mains applications**
- **Designed to meet EN60939-2:2005 and EN60950**
- **High pulse test voltage withstand of 5000Vdc**
- **High reliability**
- **Other capacitance values and current ratings available on request**

RATINGS AND CHARACTERISTICS

Rated voltage	250V dc / 250V ac 50/60Hz
Test voltage	5000V dc 2 seconds
Insulation resistance	>500MΩ
Ambient temperature range	-40°C to +50°C
Category temperature range	-40°C to +85°C
Climatic category	40/85/21
MTBF	> 10million hours
Insulating materials	UL94 V-0
Case material	Aluminium
Mounting nut	Stainless steel
Terminals	Nickel plated brass

CIRCUIT



DETAILS

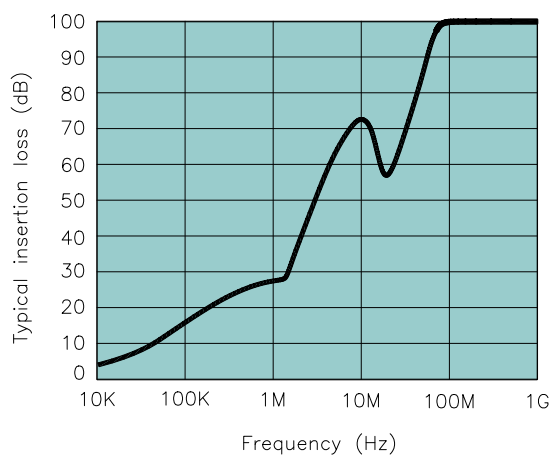
This filter is identical to FC34440 shown in previous catalogues

Part Number	Current Rating I_R (A) @60°C	Capacitance Value (nF $\pm$ 20%)	Inductance (nH)	Leakage Current (mA)	DC Resistance (mΩ)	Major Dimensions (mm)			
						Diameter D	Length L	Terminal Stud S	Mounting Thread T
DS34440	63	2 x 150	180	29	3	32	105	M6	M20

Current derating between 50°C and 85°C: For temperature, θ $I_\theta = I_R \sqrt{(85 - \theta)/35}$

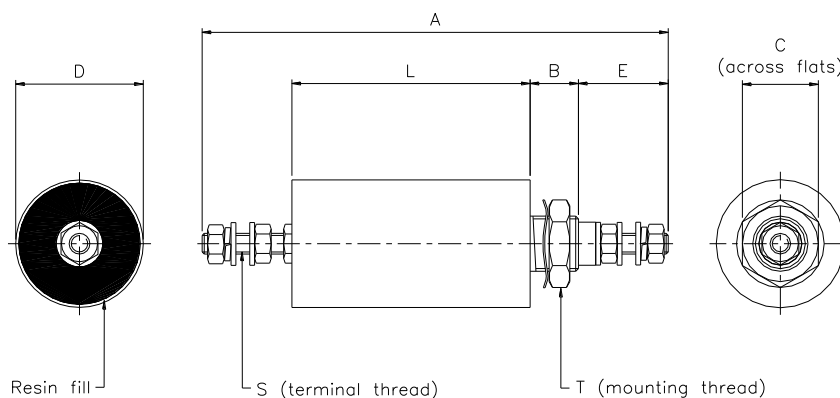


INSERTION LOSS



Part Number	Typical Insertion Loss (dB) in 50Ω system with/without load							
	10 kHz	30 kHz	100 kHz	300 kHz	1 MHz	10 MHz	100 MHz	1 GHz
DS34440	3	8	15	22	28	72	100	100

DIMENSIONS AND MECHANICAL DETAILS



Part Number	Dimensions (mm)										Weight (g)
	D ± 0.5	L ± 1	A ± 1	B ± 1	C ± 1	E ± 2	T	Torque on T (N-m)	S	Torque on S (N-m)	
DS34440	32	105	173	16	27	26	M20 x 1	10	M6	2.5	210



CUSTOM ENCLOSURES – SINGLE LINE

Special Features

Round flanges

Centre flanges

Heatshrink wrapped

Stainless steel case/spindle

High current

Hot oil resistant

Compact high current

Special enclosures

Special copper spindles

Silver plated

Extreme reliability



Applications

Base stations
Servers
Power supplies
Military vehicle generators
Aircraft generators

Alternators
Mobile generators
Shelters
Power supplies
Telecoms switches

Military vehicle power cables
Naval bulkhead penetrations
EMP protection systems
TEMPEST installations
Test rooms



CUSTOM ENCLOSURES – MULTIPLE LINE

Special Features

Cost effective packaging

Easy installation

Special interfaces

Multiple lines

Cable terminations

Connector interfaces

Cable lug terminations

High reliability

Extreme shock/ vibration

Applications

Servers
Base stations
Switches
IT & computer power supplies
Military vehicle equipment power
Alternators
Screened rooms
Generators





INSTALLATION GUIDELINES

Feedthrough capacitors and filters are designed for through-bulkhead mounting for offering high frequency filtering in line to ground applications. They should be mounted through a metal bulkhead or chassis.

The bulkhead mounting surface should be clean and unpainted to offer a low impedance path from the filter to the equipment chassis. Poor earth bonding will limit the available performance of the product and could compromise safety.

Conductive paint finishes should be avoided as they do not usually provide adequate conductivity.

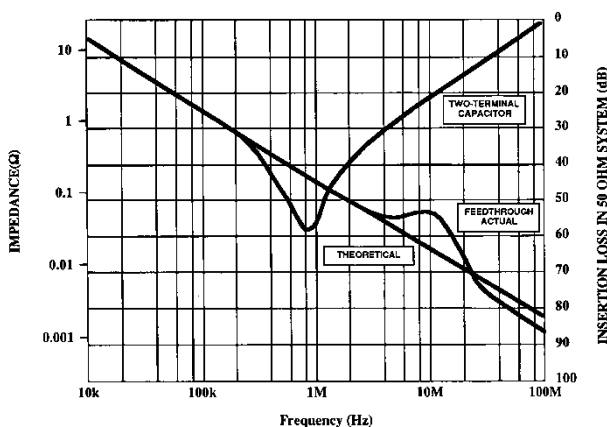
2 spanners should be used when making electrical connections to the terminals, and maximum tightening torque figures quoted should be observed.

CONSTRUCTION AND RELIABILITY

MPE have been designing and manufacturing feedthrough capacitors and filters for more than 40 years, and plastic film feedthrough capacitors for more than 25 years. MPE has always been at the forefront of the design of feedthrough capacitors and the improvements in materials and assembly techniques, which have evolved over the years, have been incorporated into this new product.

The designs covered by this catalogue all utilise self-healing metallised plastic film capacitor material and incorporate a solderless capacitor assembly technique to avoid heat damage to the plastic dielectric material, which would reduce its life and reliability. Terminals are nickel plated for good conductivity.

FEEDTHROUGH CAPACITOR PERFORMANCE



- Normal two-terminal capacitors resonate with their lead inductance in the region 1-10MHz
- This limits their use as suppression components above a few MHz
- Feedthrough capacitors have no major resonance as they have no lead inductance
- Their performance continues to increase with frequency
- Hence feedthrough capacitors are essential for good high frequency performance
- As an example this graph compares the performance of a 1 μ F feedthrough capacitor with a 1 μ F two-terminal capacitor
- Feedthrough filters incorporate feedthrough capacitors for the same benefits

SAFETY

Relevant safety standards have been adhered to in the design and manufacture of these products. However, all capacitors will store charge after power has been removed and must be treated with respect as this can be lethal when the voltage and charge are high enough. The filters covered by this catalogue do not contain internal discharge resistors. It is therefore recommended that they are fitted with external discharge resistors to discharge their capacitors after the power has been removed. Where necessary, terminals should be enclosed by the user to prevent any danger of electric shock or accidental shorting.

In all cases, filters should always be shorted to earth prior to touching to ensure they are fully discharged.

The user should ensure he is familiar with restrictions on capacitance value, earth leakage current, test voltage, and safety labelling requirements, which may be applicable to his particular installation.

CUSTOM DESIGNS

MPE offers a rapid design service for custom designs where special packaging, mounting, terminations, or multiple lines are required. Over 50% of the feedthrough components manufactured by MPE are custom designs and this can offer a very cost effective installation solution. See pages 37-38 for examples of previously offered solutions.

FURTHER INFORMATION

For more detailed technical background information, and application notes detailing the benefits of feedthrough capacitors over traditional capacitors, please contact the factory.