

Power Electronic : DC Voltage rated

FP / SMF / COAX

Ranges available in both polyester and polypropylene

Polypropylene and polyester power capacitors. The three differently terminated components are ideally suited to applications such as high frequency filtering, thyristor commutation, energy storage in SMPS and inverter circuits.



Full text description : Part 1#2

These ranges of capacitors have been developed to meet the needs of circuit designers working in the field of power electronics who require capacitors with low loss, low inductance, good volumetric efficiency and easy mounting.

The scope of possible applications is large including high frequency filtering, thyristor commutation, energy storage in switched mode power supplies and inverter circuits. The COAX range lends itself particularly well to applications requiring very low levels of self-inductance such as special filter and pulse applications.

All ranges are available with either metallised polypropylene or polyester dielectric with the SMF and COAX produced using the familiar 'wrap and end seal' method – wrapping the wound elements with heavy duty electrical tape which is wider than the element and sealing the cavities formed at each end with high grade, moisture resistant epoxy resin. This style of manufacture results in a cost effective and volumetrically efficient component of the highest quality.

The major differences between the ranges are the termination arrangements. The FP range has no conventional terminals. It has been designed to clamp between two conductive surfaces, possibly heatsinks. This assembly ensures that heat generated within the device is conducted away most efficiently, allowing the maximum amount of power to be dissipated whilst maintaining a satisfactory temperature increase.

Full text description : Part 2#2

The terminals of the COAX can be M8 threaded bush at one end and an M16 boss at the other, thus providing the possibility of passing a terminal through the centre of the device and realising a truly 'coaxial' connection. Other thread types can be provided to special order, or the centre rod can be factory fitted with the bottom end totally enclosed.

The terminals of the SMF range can be M8 studs (male), M8 tapped holes (female) or a combination of both types, allowing the capacitors to be stacked together thus enabling series/ parallel arrays to be realised. Again other thread types are available to order.

Technical details

Capacitance range	Polypropylene : 10 μ F - 400 μ F Polyester : 5 μ F - 500 μ F See size chart for details	Temperature range	-55 to +100°C
Tolerance	±10% standard. Others by request	Environmental category	55/100/56 to EN60068 - 1 (IEC68 - 1)
Dissipation factor	Polypropylene ≤ 0.001 @ 1KHz & 20±3°C Polyester ≤ 0.008 @ 1KHz & 20±3°C	Proof voltage test	1.5 x rated voltage for 30s. Not to be repeated
Insulation resistance	≥ 10 ⁹ MΩ-μF @ rated voltage & 20±3°C	RMS current rating	Dependant upon several factors, including rated voltage, waveform and heat sinking but typically 50 - 100A. Contact our Technical Department for further advice
Rated voltage	Polypropylene : 160V, 250V, 400V, 630V 1000V & 1500Vdc Polyester : 63V, 100V, 160V, 250V 400V & 630Vdc		
Pulse performance	See table. Ratings assume linear change to / from rated voltage		

Size chart : Power Electronic : FP / SMF / COAX : Part 1#5

CAP (μF)	L(mm)±1			L (mm)±2			+ Code			63Vdc			100Vdc		
	FP	SMF	COAX	FP	SMF	COAX	FP	SMF	COAX	FP	SMF	COAX	FP	SMF	COAX
10	29	40	40	27	27	27									
-	40	51	51	38	38	38									
-	53	64	64	51	51	51									
50	29	40	40	27	27	27						36	36	36	
-	40	51	51	38	38	38									
-	53	64	64	51	51	51									
-	77	88	88	75	75	75									
100	29	40	40	27	27	27	42	42	42	49	49	49	49	49	49
-	40	51	51	38	38	38	35	35	35	42	42	42	42	42	42
-	53	64	64	51	51	51				36	36	36	36	36	36
-	77	88	88	75	75	75									
200	29	40	40	27	27	27	59	59	59	68	68	68	68	68	68
-	40	51	51	38	38	38	49	49	49	57	57	57	57	57	57
-	53	64	64	51	51	51				49	49	49	49	49	49
-	77	88	88	75	75	75									
300	29	40	40	27	27	27	72	72	72	84	84	84	84	84	84
-	40	51	51	38	38	38	59	59	59	69	69	69	69	69	69
-	53	64	64	51	51	51				60	60	60	60	60	60
-	77	88	88	75	75	75									
400	29	40	40	27	27	27	82	82	82						
-	40	51	51	38	38	38	68	68	68	79	79	79	79	79	79
-	53	64	64	51	51	51				68	68	68	68	68	68
-	77	88	88	75	75	75									

Coax Devices : Figures in brackets indicate Polypropylene devices (COAXP)

FP Devices : Figure in brackets indicate Polypropylene Devices (FPP)

SMF Devices : Figures in brackets indicate Polypropylene devices (SMFP)

Size chart : Power Electronic : FP / SMF / COAX : Part 2#5

CAP (μF)	L(mm)±1			L (mm)±2			+ Code			160Vdc					
	FP	SMF	COAX	FP	SMF	COAX	FP	SMF	COAX	FP		SMF		COAX	
10	29	40	40	27	27	27									
-	40	51	51	38	38	38									
-	53	64	64	51	51	51									
50	29	40	40	27	27	27	40	(54)	40	(54)	40	(54)			
-	40	51	51	38	38	38	-	(45)	-	(45)	-	(45)			
-	53	64	64	51	51	51	-	(39)	-	(39)	-	(39)			
-	77	88	88	75	75	75									
100	29	40	40	27	27	27	56	(76)	56	(76)	56	(76)			
-	40	51	51	38	38	38	46	(63)	46	(63)	46	(63)			
-	53	64	64	51	51	51	40	(54)	40	(54)	40	(54)			
-	77	88	88	75	75	75	-	(44)	-	(44)	-	(44)			
200	29	40	40	27	27	27	78		78	(-)	78	(-)			
-	40	51	51	38	38	38	64	(88)	64	(88)	64	(88)			
-	53	64	64	51	51	51	55	(75)	55	(75)	55	(75)			
-	77	88	88	75	75	75	46	(62)	46	(62)	46	(62)			
300	29	40	40	27	27	27									
-	40	51	51	38	38	38	79		79	(-)	79	(-)			
-	53	64	64	51	51	51	67		67	(-)	67	(-)			
-	77	88	88	75	75	75	55	(75)	55	(75)	55	(75)			
400	29	40	40	27	27	27									
-	40	51	51	38	38	38									
-	53	64	64	51	51	51	79		79	(-)	79	(-)			
-	77	88	88	75	75	75	64	(86)	64	(86)	64	(86)			

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FP Devices : Figure in brackets indicate Polypropylene Devices (FPP)

SMF Devices : Figures in brackets indicate Polypropylene devices (SMFP)

Size chart : Power Electronic : FP / SMF / COAX : Part 3#5

CAP (μF)	L(mm)±1			L (mm)±2			L(mm)±2			+ Code			250Vdc					
	FP	SMF	COAX	FP	SMF	COAX	FP	SMF	COAX	FP	SMF	COAX	FP	SMF	COAX	FP	SMF	COAX
10	29	40	40	27	27	27	27	27	27	-	(37)	-	(37)	-	(37)			
-	40	51	51	38	38	38												
-	53	64	64	51	51	51												
50	29	40	40	27	27	27	66	(79)	66	(79)	66	(79)						
-	40	51	51	38	38	38	55	(65)	55	(65)	55	(65)						
-	53	64	64	51	51	51	47	(56)	47	(56)	47	(56)						
-	77	88	88	75	75	75	39	(46)	39	(46)	39	(46)						
100	29	40	40	27	27	27												
-	40	51	51	38	38	38	76		76	(-)	76	(-)						
-	53	64	64	51	51	51	65	(78)	65	(78)	65	(78)						
-	77	88	88	75	75	75	54	(64)	54	(64)	54	(64)						
200	29	40	40	27	27	27												
-	40	51	51	38	38	38												
-	53	64	64	51	51	51												
-	77	88	88	75	75	75	75	(89)	75	(89)	75	(89)						
300	29	40	40	27	27	27												
-	40	51	51	38	38	38												
-	53	64	64	51	51	51												
-	77	88	88	75	75	75												
400	29	40	40	27	27	27												
-	40	51	51	38	38	38												
-	53	64	64	51	51	51												
-	77	88	88	75	75	75												

Coax Devices : Figures in brackets indicate Polypropylene devices (COAXP)

FP Devices : Figure in brackets indicate Polypropylene Devices (FPP)

SMF Devices : Figures in brackets indicate Polypropylene devices (SMFP)

Size chart : Power Electronic : FP / SMF / COAX : Part 4#5

CAP (μF)	L(mm)±1			L (mm)±2			+ Code			400Vdc					
	FP	SMF	COAX	FP	SMF	COAX	FP	SMF	COAX	FP		SMF		COAX	
10	29	40	40	27	27	27	40	(47)	40	(47)	40	(47)			
-	40	51	51	38	38	38	-	(39)	-	(39)	-	(39)			
-	53	64	64	51	51	51									
50	29	40	40	27	27	27	86		86	(-)	86	(-)			
-	40	51	51	38	38	38	70	(84)	70	(84)	70	(84)			
-	53	64	64	51	51	51	61	(72)	61	(72)	61	(72)			
-	77	88	88	75	75	75	50	(59)	50	(59)	50	(59)			
100	29	40	40	27	27	27									
-	40	51	51	38	38	38	84		84		84				
-	53	64	64	51	51	51	69	(83)	69	(83)	69	(83)			
-	77	88	88	75	75	75									
200	29	40	40	27	27	27									
-	40	51	51	38	38	38									
-	53	64	64	51	51	51									
-	77	88	88	75	75	75									
300	29	40	40	27	27	27									
-	40	51	51	38	38	38									
-	53	64	64	51	51	51									
-	77	88	88	75	75	75									
400	29	40	40	27	27	27									
-	40	51	51	38	38	38									
-	53	64	64	51	51	51									
-	77	88	88	75	75	75									

Coax Devices : Figures in brackets indicate Polypropylene devices (COAXP)

FP Devices : Figure in brackets indicate Polypropylene Devices (FPP)

SMF Devices : Figures in brackets indicate Polypropylene devices (SMFP)

Size chart : Power Electronic : FP / SMF / COAX : Part 5#5

CAP (μF)	L(mm)±1			L (mm)±2			L(mm)±2			+ Code			630Vdc					
	FP	SMF	COAX	FP	SMF	COAX	FP	SMF	COAX	FP	SMF	COAX	FP	SMF	COAX	FP	SMF	COAX
10	29	40	40	27	27	27	27	27	27	57	(57)	57	(57)	57	(57)			
-	40	51	51	38	38	38	38	38	38	47	(48)	47	(48)	47	(48)			
-	53	64	64	51	51	51	51	51	51	41	(41)	41	(41)	41	(41)			
50	29	40	40	27	27	27	27	27	27									
-	40	51	51	38	38	38	38	38	38									
-	53	64	64	51	51	51	51	51	51	87	(89)	87	(89)	87	(89)			
-	77	88	88	75	75	75	75	75	75	71	(72)	71	(72)	71	(72)			
100	29	40	40	27	27	27	27	27	27									
-	40	51	51	38	38	38	38	38	38									
-	53	64	64	51	51	51	51	51	51									
-	77	88	88	75	75	75	75	75	75									
200	29	40	40	27	27	27	27	27	27									
-	40	51	51	38	38	38	38	38	38									
-	53	64	64	51	51	51	51	51	51									
-	77	88	88	75	75	75	75	75	75									
300	29	40	40	27	27	27	27	27	27									
-	40	51	51	38	38	38	38	38	38									
-	53	64	64	51	51	51	51	51	51									
-	77	88	88	75	75	75	75	75	75									
400	29	40	40	27	27	27	27	27	27									
-	40	51	51	38	38	38	38	38	38									
-	53	64	64	51	51	51	51	51	51									
-	77	88	88	75	75	75	75	75	75									

Coax Devices : Figures in brackets indicate Polypropylene devices (COAXP)

FP Devices : Figure in brackets indicate Polypropylene Devices (FPP)

SMF Devices : Figures in brackets indicate Polypropylene devices (SMFP)

Pulse performance

Body length (mm)	Rated voltage (Vdc)									
	63V ▲	100V ▲	160V ▲ ●		250V ▲ ●		400V ▲ ●		630V ▲ ●	
40	3	4	4.5	14	7	21	10	29	16	43
51	2	2.6	3	10	5	15	7	20	11	30
64		2	2.5	7.5	4	12	5	15	7.5	22
88			2	5	3	8.5	3.5	10	5.5	15

▲ Polyester ● Polypropylene

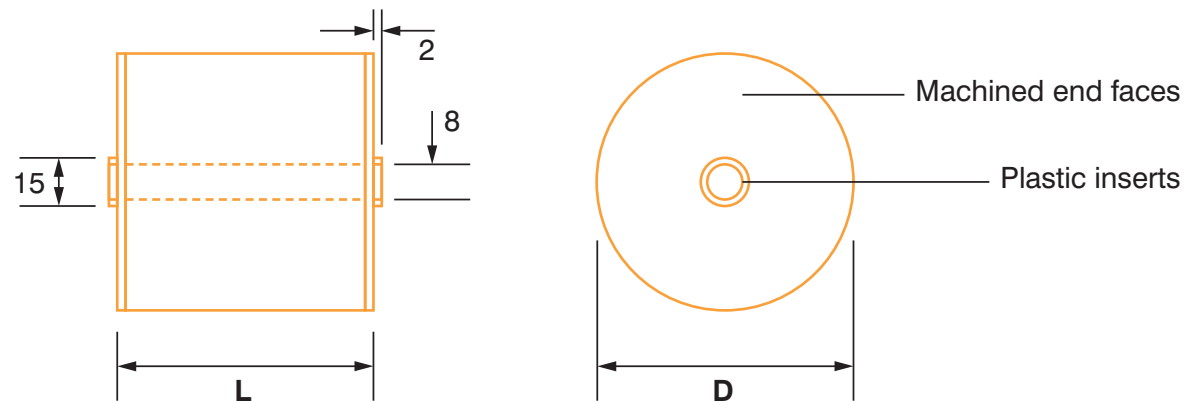
Maximum rates of change of Voltage dV/dt (V/μS)

Figures quoted in the chart above assume linear charge/discharge to / from rated voltage.

When applied voltage (V_A) is less than the rated voltage (V_R) the rating may be increased by a factor V_R/V_A .

Outline dimensions

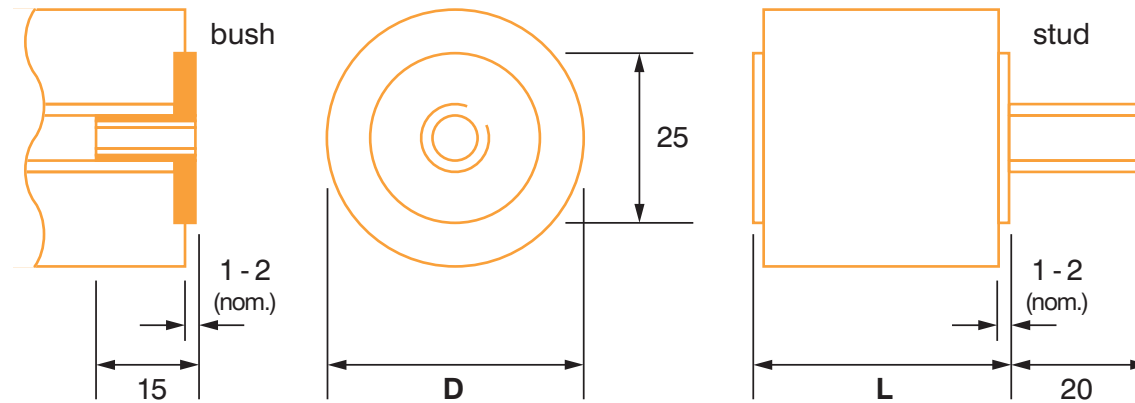
FP



Outline dimensions in mm ± 0.5

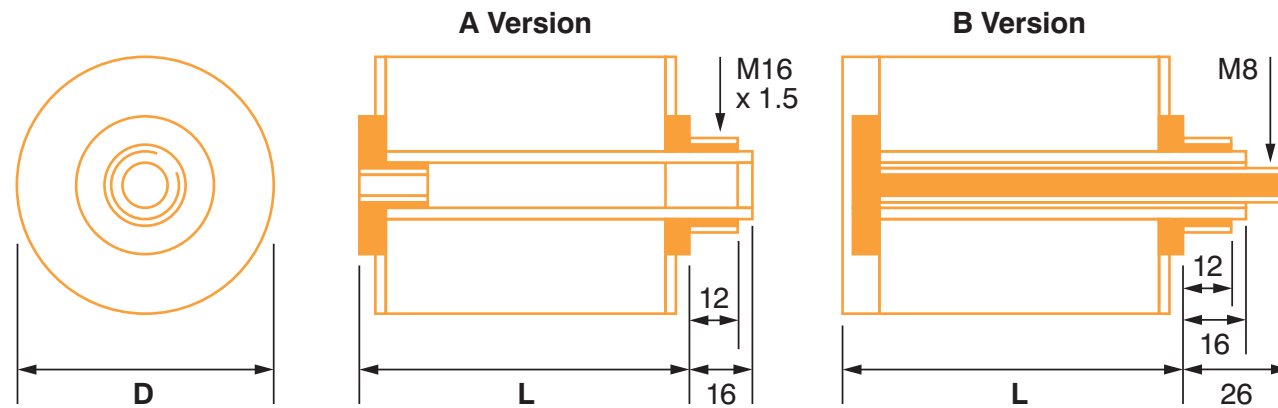
Outline dimensions

SMF



Outline dimensions in mm ± 0.5 . Unless otherwise stated

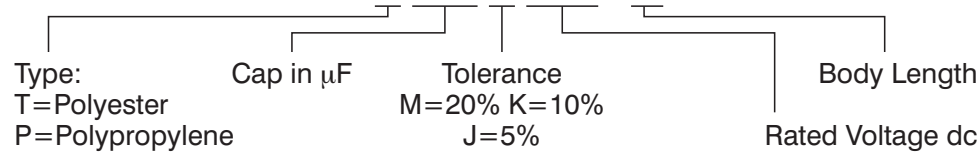
COAX



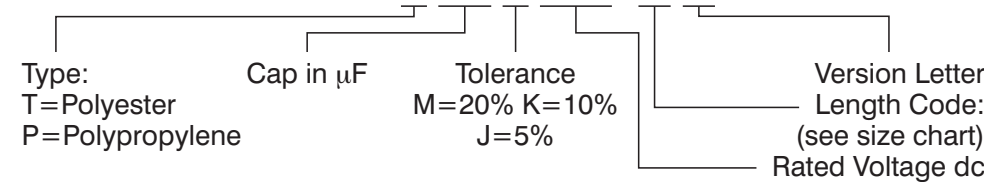
Outline dimensions in mm ± 0.5

Ordering details

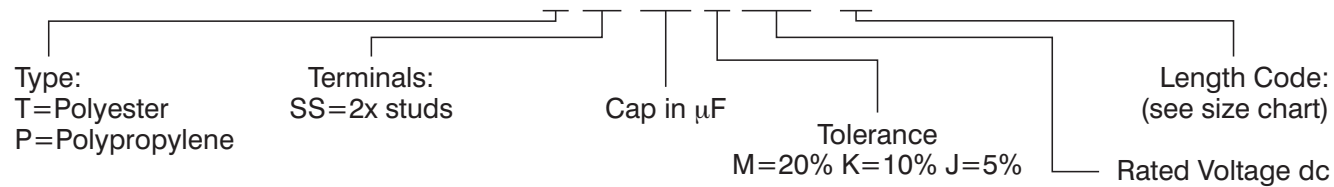
FP T 100 μ K 250V - 27



COAX T 50 μ K 100V -38/A



SMFP SB 50 μ K 100V -38



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