



## APPLICATIONS

DC voltage filtering for:

- DC link
- Resonant filtering
- Active correction (FACTS, UPFC, DVR...)
- Speed converters (drives and traction)
- Windmills
- Substation

## PACKAGING

Rectangular stainless steel case sandblasted. Grounding is via a threaded screw located on the cover of the case.

## ELECTRICAL CHARACTERISTICS – STANDARD PRODUCTS

Capacitance range $C_n$	610 $\mu$ F to 15600 $\mu$ F
Tolerance on $C_n$	$\pm 10\%$
DC voltage range	1200V to 5000V
Maximum hot-spot temperature	85°C
Life duration at nominal voltage and 70°C hot-spot temperature	100000 hours
Stray inductance	<400nH
Test voltage between terminals	1.5 $V_n$ during 10s
Test voltage between short terminals and case	10kV <sub>rms</sub> (at 50Hz during 1mn)
Standard reference	Conforms with IEC 61071 and 61881, 61373, 60068 and 60077

## ELECTRICAL CHARACTERISTICS – CUSTOM PRODUCTS

Capacitance range $C_n$	83 $\mu$ F to 15300 $\mu$ F
Tolerance on $C_n$ ( $\pm 5\%$ or $\pm 2\%$ available for specific requirements)	$\pm 10\%$
DC voltage range	1200V to 6000V
Maximum hot-spot temperature	85°C
Life duration at nominal voltage and 70°C hot-spot temperature	100,000 hours
Stray inductance	200nH to 430nH
On option low inductance for IGBT and other applications	down to 40nH
Test voltage between terminals	1.5 $V_n$ during 10s
Test voltage between short terminals and case	10kV <sub>rms</sub> (at 50Hz during 1mn)
Standard reference	Conforms with IEC 61071, 61881 and 61373, IEC 60068 and IEC 60077

# Medium Power Film Capacitors

FFLC Design



## DC FILTERING



## APPLICATIONS

The FFLC is specifically designed for DC filtering, low reactive power.

## PACKAGING

Rectangular resin filled aluminum case.

FFLC capacitors meet the level 2 requirement of the fire behavior standard NF F 16 102.

## PRESENTATION

Non-painted rectangular resin filled aluminium case

4 x M10 terminals\*

**NEW** Available with M10 X 12 female terminal upon request  
(last codification digit "--" become in that case "JE")

## ELECTRICAL CHARACTERISTICS

Capacitance range $C_n$	1120 $\mu$ F to 8800 $\mu$ F (other values available upon request)
Tolerance on $C_n$	$\pm 10\%$
Rated DC voltage $V_{ndc}$	680 to 1200 V
Maximum rms current $I_{rms\ max}$	140 Arms to 300 Arms
Stray inductance $L_s^*$	28 nH to 40 nH

## FFLC

Part Number	Capacitance ( $\mu$ F)	Height mm (in)	Width mm (in)	$I_{rms}$ (A)	$L_s^*$ (nH)	$R_s$ (m $\Omega$ )	$R_{th}$ ( $^{\circ}$ C/W)	Weight (kg)
<b><math>U_N</math> dc: 680 V</b>								
FFLC6A8807K--	8800	240 (9.449)	170 (6.693)	220	40	0.58	1.2	18
FFLC6A7157K--	7150	240 (9.449)	145 (5.709)	230	38	0.50	1.2	13.2
FFLC6A6507K--	6500	240 (9.449)	145 (5.709)	210	38	0.55	1.3	15.5
FFLC6A5607K--	5600	170 (6.693)	170 (6.693)	140	35	0.88	1.8	15.5
FFLC6A4557K--	4550	170 (6.693)	145 (5.709)	150	30	0.77	1.8	11.3
FFLC6A4187K--	4180	240 (9.449)	95 (3.740)	300	35	0.34	1.0	10.3
FFLC6A2667K--	2660	170 (6.693)	95 (3.740)	170	28	0.49	1.6	7.3
<b><math>U_N</math> dc: 1000 V</b>								
FFLC6L5067K--	5060	240 (9.449)	170 (6.693)	250	40	0.61	1.2	17.2
FFLC6L3207K--	3200	170 (6.693)	170 (6.693)	150	35	0.89	1.9	12.4
FFLC6L4307K--	4300	240 (9.449)	145 (5.709)	300	38	0.52	1.1	15.5
FFLC6L2737K--	2730	170 (6.693)	145 (5.709)	170	30	0.75	1.6	11.3
FFLC6L2537K--	2530	240 (9.449)	95 (3.740)	300	35	0.36	0.8	10.3
FFLC6L1607K--	1600	170 (6.693)	95 (3.740)	170	28	0.51	1.2	7.3
<b><math>U_N</math> dc: 1200 V</b>								
FFLC6U3527K--	3520	240 (9.449)	170 (6.693)	250	40	0.71	1.2	18.8
FFLC6U2247K--	2240	170 (6.693)	170 (6.693)	150	35	1.1	1.9	12.7
FFLC6U3007K--	3000	240 (9.449)	145 (5.709)	300	38	0.60	1.1	15.5
FFLC6U1907K--	1900	170 (6.693)	145 (5.709)	170	30	0.87	1.6	11.3
FFLC6U1757K--	1750	240 (9.449)	95 (3.740)	300	35	0.41	0.8	10.3
FFLC6U1127K--	1120	170 (6.693)	95 (3.740)	170	28	0.59	1.2	7.3

\*Very low stray inductance for high frequency applications on request.

# Medium Power Film Capacitors

## FFVE/FFVI Male and Female Connections



The FFV capacitor is specifically designed for DC filtering, low reactive power.

The series uses a non-impregnated metallized polypropylene or polyester dielectric, which features a controlled self-healing process, specially treated to have a very high dielectric strength in operating conditions up to 105°C.

The FFV special design gives this series a very low level of stray inductance (18 nH to 40 nH).

Furthermore, the performance levels of the FFVE capacitor makes them a very interesting alternative to electrolytic technology, because they can withstand much higher levels of surge voltage, very high rms current ratings, and longer lifetimes.

### PACKAGING

Self-extinguishing plastic case (V0 = in accordance with UL 94) filled thermosetting resin.

Self-extinguishing thermosetting resin (V0 = in accordance with UL 94; I3F1 = in accordance with NF F 16-101).

FFVE capacitors meet the Level 2 requirement of the fire behavior standard NF F 16-102.

### POLYESTER DIELECTRIC

Dimensions: millimeters (inches)

Capacitance (μF)	Height	Irms max. (A)	Ls max. (nH)	Rs (mΩ)	Rth (°C/W)	Part Number*
<b>V<sub>ndc</sub> 300 volts</b>						
180	34 (1.339)	100	18	0.8	4.7	FFVE4H0187K--
195	34 (1.339)	100	18	0.8	4.4	FFVE4H1956K--
250	40 (1.575)	100	25	0.6	5.2	FFVE4H0257K--
350	51 (2.008)	100	32	0.8	7.2	FFVE4H0357K--
400	51 (2.008)	110	32	0.8	7.1	FFVE4H0407K--
<b>V<sub>ndc</sub> 400 volts</b>						
100	34 (1.339)	80	18	0.7	4.7	FFVE4I0107K--
120	34 (1.339)	100	18	0.6	4.1	FFVE4I0127K--
150	40 (1.575)	100	25	0.7	5.0	FFVE4I0157K--
180	51 (2.008)	80	32	1.0	8.5	FFVE4I0187K--
220	51 (2.008)	100	32	0.9	7.2	FFVE4I0227K--

\*Change "K--" to "KJE" for female connectors M5 x 7.5mm

# Medium Power Film Capacitors

## FFVE/FFVI Male and Female Connections



### POLYPROPYLENE DIELECTRIC

Capacitance (μF)	Height	Irms max. (A)	Ls max. (nH)	Rs (mΩ)	Rth (°C/W)	Part Number*
<b>V<sub>Ndc</sub> 600 volts</b>						
25	34 (1.339)	90	18	0.7	4.3	FFVE6K0256K--
100	40 (1.575)	100	25	0.6	4.8	FFVE6K0107K--
150	51 (2.008)	110	32	0.9	6.9	FFVE6K0157K--
220	64 (2.520)	100	40	1.0	8.4	FFVE6K0227K--
<b>V<sub>Ndc</sub> 800 volts</b>						
66	40 (1.575)	100	25	0.7	4.7	FFVE6B0666K--
100	51 (2.008)	90	32	1.0	6.7	FFVE6B0107K--
140	64 (2.520)	100	40	1.3	8.4	FFVE6B0147K--
<b>V<sub>Ndc</sub> 900 volts</b>						
12	34 (1.339)	70	18	0.9	4.4	FFVE6C0126K--
38	34 (1.339)	100	18	1.6	3.9	FFVE6C0386K--
47	40 (1.575)	100	25	0.8	4.6	FFVE6C0476K--
70	51 (2.008)	100	32	1.2	6.7	FFVE6C0706K--
100	64 (2.520)	90	40	1.1	8.2	FFVE6C0107K--
<b>V<sub>Ndc</sub> 1000 volts</b>						
66	40 (1.575)	70	25	1.5	5.1	FFVE6L0666KJ7
100	51 (2.008)	64	32	2.0	7.3	FFVE6L0107KJ7
140	64 (2.520)	51	40	2.5	9.2	FFVE6L0147KJ7
<b>V<sub>Ndc</sub> 1200 volts</b>						
47	40 (1.575)	66	25	1.7	4.9	FFVE6U0476KJ7
70	51 (2.008)	59	32	2.4	7.2	FFVE6U0706KJ7
100	64 (2.520)	49	40	2.9	8.9	FFVE6U0107KJ7
<b>V<sub>Ndc</sub> 1900 volts</b>						
15	40 (1.575)	73	25	1.1	5.2	FFVE6N0156KJ7
24	51 (2.008)	73	32	1.3	6.5	FFVE6N0246KJ7
35	64 (2.520)	67	40	1.6	8.4	FFVE6N0356KJ7

\*Change "K--" to "KJE" for female connectors M5 x 7.5mm

\*Change "KJ7" to "K7X" for female connectors M5 x 7.5mm

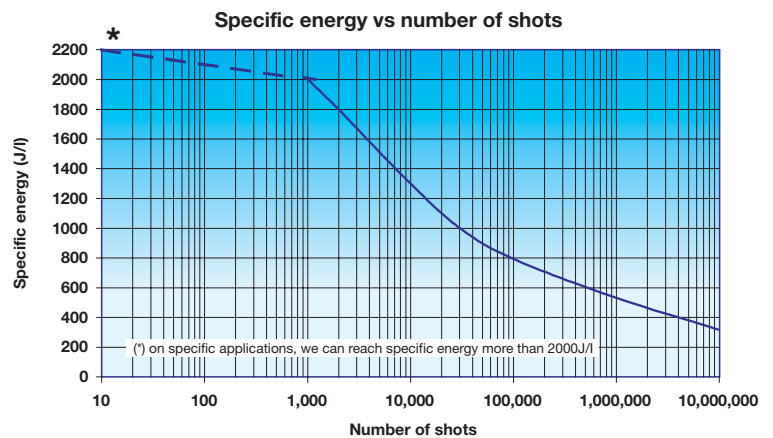
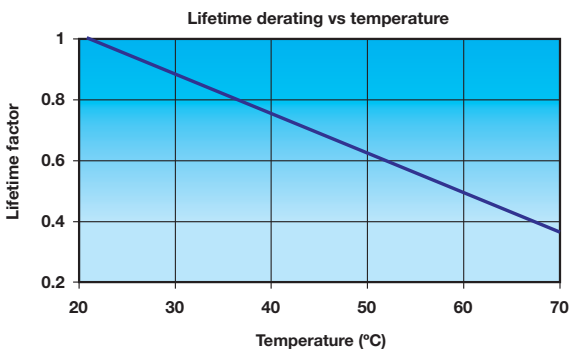
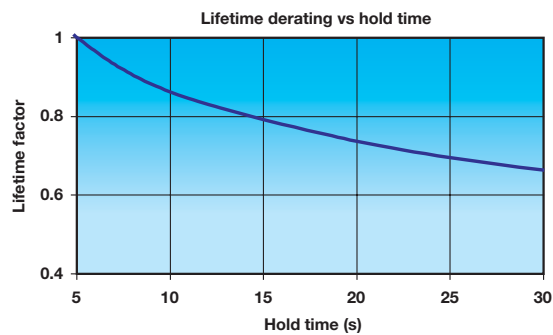
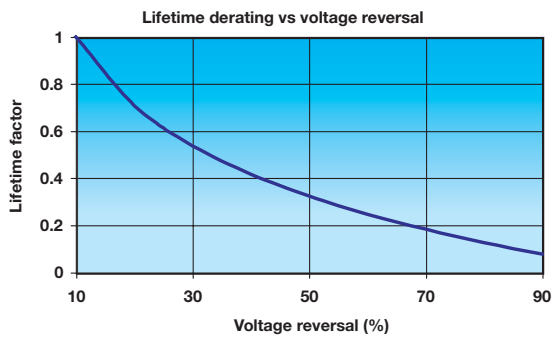
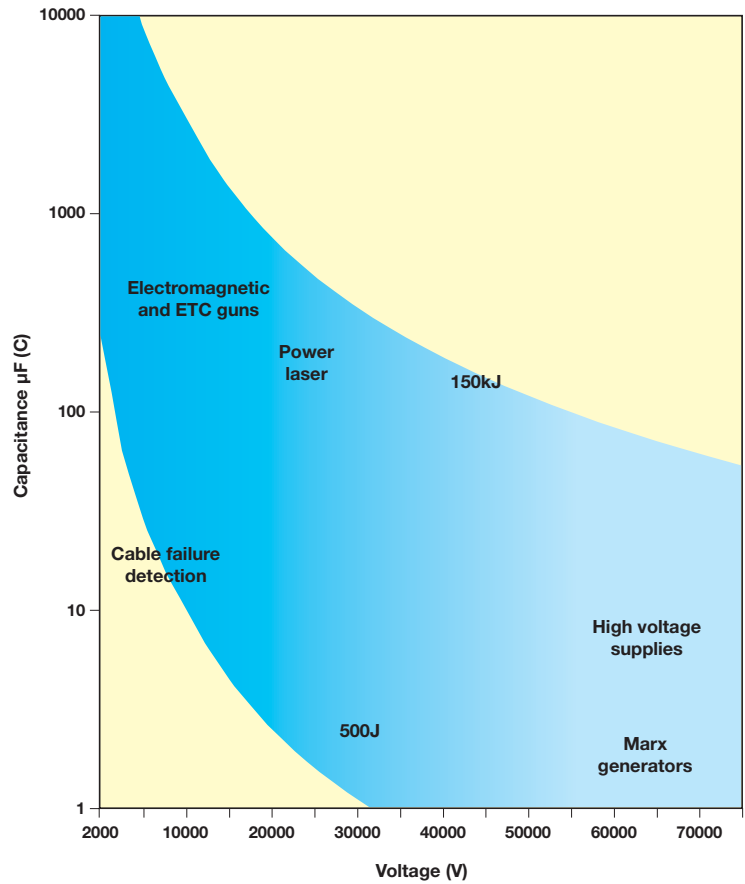
### POLYPROPYLENE DIELECTRIC

Capacitance (μF)	Height	Irms max. (A)	Ls max. (nH)	Rs (mΩ)	Rth (°C/W)	Part Number*
<b>V<sub>Ndc</sub> 500 volts</b>						
125	40 (1.575)	90	25	0.6	5.0	FFVI6J1256K--
200	51 (2.008)	90	32	0.8	6.7	FFVI6J0207K--
275	64 (2.520)	90	40	0.9	8.7	FFVI6J2756K--
<b>V<sub>Ndc</sub> 700 volts</b>						
100	40 (1.575)	100	25	0.6	4.8	FFVI6A0107K--
150	51 (2.008)	100	32	0.9	6.9	FFVI6A0157K--
220	64 (2.520)	100	40	1.0	8.4	FFVI6A0227K--
<b>V<sub>Ndc</sub> 900 volts</b>						
66	40 (1.575)	100	25	0.7	4.7	FFVI6C0666K--
100	51 (2.008)	90	32	1.0	6.7	FFVI6C0107K--
140	64 (2.520)	100	40	1.3	8.4	FFVI6C0147K--
<b>V<sub>Ndc</sub> 1100 volts</b>						
47	40 (1.575)	100	25	0.8	4.6	FFVI6L0476K--
70	51 (2.008)	100	32	1.2	6.7	FFVI6L0706K--
100	64 (2.520)	90	40	1.1	8.2	FFVI6L0107K--

\*Change "K--" to "KJE" for female connectors M5 x 7.5mm



Controlled self-healing film capacitor technology, is ideal for discharge applications. DISFIM capacitors range from 2kV to 75kV and the maximum energy per can is 150kJ. Each capacitor is divided into several million elementary capacitances. The weak points in the dielectric are insulated and the capacitor continues to work without a short circuit or risk of explosion. They are designed to lose less than 5% of their capacitance during their lifetime.



# Medium Power Film Capacitors

FPX



## APPLICATIONS

Protection of thyristors.  
Protection of gate turn-off thyristor (G.T.O.).  
Clamping (Secondary snubber).

## TECHNOLOGY

Metallized polypropylene dielectric capacitor with controlled self-healing.

Reinforced metallization developed for high impulse currents.  
Axial connections specially developed to reduce series inductance and to provide rigid mechanical mounting.

## PACKAGING

Cylindrical in plastic case filled with thermosetting resin.  
Outputs: threaded inserts either M6 or M8.

## PROTECTION

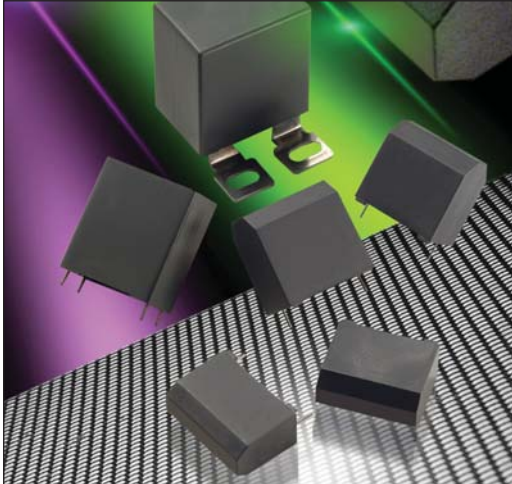
Dimensions: millimeters (inches)

Cn (μF)	Case Type	Dimensions				I <sup>2</sup> .t max. (A <sup>2</sup> .s)	I <sub>rms</sub> max. (A)	Rs (mΩ)	Rth (°C/W)	Part Number
		H* ±0.5 (±0.020)	h ±2 (±0.079)	D max.	d ±0.1					
<b>FPX 2000 V</b>		<b>V<sub>ndc</sub> = 1000 V</b>		<b>V<sub>peak</sub> = 1600 V</b>		<b>V<sub>rms</sub> = 560 V</b>		<b>V<sub>s</sub> = 2000 V</b>		
1	Plastic case M6/6	52 (2.072)	5 (0.197)	40 (1.575)	18 (0.709)	2	15	2.4	14	FPX66N0105J--
2	Plastic case M8/8	52 (2.072)	5 (0.197)	60 (2.362)	22 (0.866)	8	30	1.2	6.1	FPX86N0205J--
3	Plastic case M8/8	52 (2.072)	5 (0.197)	72 (2.835)	22 (0.866)	18	45	0.9	4.5	FPX86N0305J--
3.5	Plastic case M8/8	52 (2.072)	5 (0.197)	72 (2.835)	22 (0.866)	25	50	0.85	4.5	FPX86N0355J--
4	Plastic case M8/8	52 (2.072)	5 (0.197)	82 (3.228)	22 (0.866)	32	60	0.75	3.5	FPX86N0405J--
5	Plastic case M8/8	52 (2.072)	5 (0.197)	82 (3.228)	22 (0.866)	50	70	0.65	2.5	FPX86N0505J--
<b>FPX 2500 V</b>		<b>V<sub>ndc</sub> = 1300 V</b>		<b>V<sub>peak</sub> = 2000 V</b>		<b>V<sub>rms</sub> = 700 V</b>		<b>V<sub>s</sub> = 2500 V</b>		
0.5	Plastic case M6/6	52 (2.072)	5 (0.197)	40 (1.575)	18 (0.709)	1	15	3	14	FPX66P0504J--
1	Plastic case M8/8	52 (2.072)	5 (0.197)	60 (2.362)	22 (0.866)	3	20	2.3	10.5	FPX86P0105J--
1.5	Plastic case M8/8	52 (2.072)	5 (0.197)	60 (2.362)	22 (0.866)	7	30	1.5	6.1	FPX86P0155J--
2	Plastic case M8/8	52 (2.072)	5 (0.197)	72 (2.835)	22 (0.866)	12.7	40	1.1	4.5	FPX86P0205J--
2.5	Plastic case M8/8	52 (2.072)	5 (0.197)	72 (2.835)	22 (0.866)	20	60	0.89	3.7	FPX86P0255J--
3	Plastic case M8/8	52 (2.072)	5 (0.197)	82 (3.228)	22 (0.866)	28	60	0.85	3.2	FPX86P0305J--
3.5	Plastic case M8/8	52 (2.072)	5 (0.197)	82 (3.228)	22 (0.866)	39	65	0.78	2.9	FPX86P0355J--
<b>FPX 3500 V</b>		<b>V<sub>ndc</sub> = 2000 V</b>		<b>V<sub>peak</sub> = 2400 V</b>		<b>V<sub>rms</sub> = 850 V</b>		<b>V<sub>s</sub> = 3500 V</b>		
2	Plastic case M8/8	62 (2.441)	5 (0.197)	72 (2.835)	22 (0.866)	23	41	1.24	6.1	FPX86X0205J-
3	Plastic case M8/8	62 (2.441)	5 (0.197)	92 (3.622)	22 (0.866)	50	62	0.92	3.9	FPX86X0305J--
3.5	Plastic case M8/8	62 (2.441)	5 (0.197)	92 (3.622)	22 (0.866)	70	72	0.83	3.4	FPX86X0355J--
4	Plastic case M8/8	62 (2.441)	5 (0.197)	92 (3.622)	22 (0.866)	85	80	0.78	3.1	FPX86X0405J--
<b>FPX 4500 V</b>		<b>V<sub>ndc</sub> = 2500 V</b>		<b>V<sub>peak</sub> = 3200 V</b>		<b>V<sub>rms</sub> = 1130 V</b>		<b>V<sub>s</sub> = 4500 V</b>		
0.9	Plastic case M8/8	62 (2.441)	5 (0.197)	72 (2.835)	22 (0.866)	15	40	1.5	6.2	FPX86Z0904J--
1	Plastic case M8/8	62 (2.441)	5 (0.197)	72 (2.835)	22 (0.866)	15	38	1.4	6.2	FPX86Z0105J--
2	Plastic case M8/8	62 (2.441)	5 (0.197)	92 (3.622)	22 (0.866)	70	75	0.85	3.1	FPX86Z0205J--
<b>FPX 4600 V</b>		<b>V<sub>ndc</sub> = 3000 V</b>		<b>V<sub>peak</sub> = 4000 V</b>		<b>V<sub>rms</sub> = 1400 V</b>		<b>V<sub>s</sub> = 4600 V</b>		
0.5	Plastic case M8/8	62 (2.441)	5 (0.197)	72 (2.835)	22 (0.866)	7	40	1.7	12	FPX86Y0504J--
0.68	Plastic case M8/8	62 (2.441)	5 (0.197)	72 (2.835)	22 (0.866)	14	35	1.59	6.2	FPX86Y0684J--
1.25	Plastic case M8/8	62 (2.441)	5 (0.197)	92 (3.622)	22 (0.866)	50	65	1	3.3	FPX86Y1254J--
1.5	Plastic case M8/10	79 (3.110)	6 (0.236)	98 (3.858)	-	32	60	1.4	8.3	FPX86Y0155J--
1.7	Plastic case M8/10	79 (3.110)	6 (0.236)	98 (3.858)	-	40	70	1.3	7.4	FPX86Y0175J--
2	Plastic case M8/10	79 (3.110)	6 (0.236)	98 (3.858)	-	56	80	1.1	6.3	FPX86Y0205J--
2.5	Plastic case M8/10	118 (4.646)	6 (0.236)	98 (3.858)	-	200	130	0.8	1.1	FPX86Y0255J--
2.7	Plastic case M8/10	118 (4.646)	6 (0.236)	98 (3.858)	-	232	140	0.7	1.1	FPX86Y0275J--
3	Plastic case M8/10	143 (5.630)	6 (0.236)	98 (3.858)	-	128	100	0.9	1.5	FPX86Y0305J--
3.5	Plastic case M8/10	143 (5.630)	6 (0.236)	98 (3.858)	-	170	110	0.8	1.4	FPX86Y0355J--
4	Plastic case M8/10	143 (5.630)	6 (0.236)	98 (3.858)	-	224	115	0.8	1.4	FPX86Y0405J--
4.5	Plastic case M8/10	163 (6.417)	6 (0.236)	98 (3.858)	-	522	120	0.6	1.7	FPX86Y0455J--
5	Plastic case M8/10	163 (6.417)	6 (0.236)	98 (3.858)	-	600	130	0.6	1.7	FPX86Y0505J--
6	Plastic case M8/10	163 (6.417)	6 (0.236)	98 (3.858)	-	729	160	0.5	1.7	FPX86Y0605J--

\* Tol: +0 / -3mm for H ≥ 118mm

# Medium Power Film Capacitors

FSB



Metallized polypropylene dielectric capacitor with controlled self-healing.  
Reinforced metallization developed for high impulse currents.

## APPLICATIONS

- IGBT protection
- IGBT clamping

## PACKAGING

- Parallelepipedic plastic case with thermosetting resin

References	Capacitance (μF)	Box Kind	(I <sup>2</sup> t) (A <sup>2</sup> s)	I <sub>rms</sub> (A)	R <sub>s</sub> (mΩ)	R <sub>th</sub> (hotspot/amb.)
<b>U<sub>Ndc</sub> = 1200V</b>						
		<b>V<sub>peak</sub> = 1600V</b>		<b>V<sub>rms</sub> = 560V</b>		<b>V<sub>s</sub> = 2000V</b>
FSB16U0154J--	0.15	P0	0.05	3	14.3	45.9
FSB26U0274J--	0.27	18	0.15	7.6	8.4	36.8
FSB36U0394J--	0.39	19	0.31	11	6.2	32.2
FSB46U0474J--	0.47	26	0.41	12	5.6	29.4
FSB56U0684J--	0.68	R68 (2 terminals)	0.94	12	3.8	23.7
FSB56U0684JJC	0.68	R68 (4 terminals)	0.94	16.7	3.8	23.7
<b>U<sub>Ndc</sub> = 1600V</b>						
		<b>V<sub>peak</sub> = 2000V</b>		<b>V<sub>rms</sub> = 630V</b>		<b>V<sub>s</sub> = 2300V</b>
FSB16M0134J--	0.13	P0	0.05	4.6	13.3	44.9
FSB26M0184J--	0.18	18	0.1	6.4	9.9	35.9
FSB36M0244J--	0.24	19	0.18	8.5	7.8	32.4
FSB46M0334J--	0.33	26	0.35	11.7	5.6	28.6
FSB56M0434J--	0.43	R68 (2 terminals)	0.59	12	4.6	23.8
FSB56M0434JJC	0.43	R68 (4 terminals)	0.59	15.2	4.6	23.8
<b>U<sub>Ndc</sub> = 2000V</b>						
		<b>V<sub>peak</sub> = 2400V</b>		<b>V<sub>rms</sub> = 700V</b>		<b>V<sub>s</sub> = 2600V</b>
FSB16N0104J--	0.1	P0	0.05	4.2	14.3	44.6
FSB26N0134J--	0.13	18	0.08	5.5	11.3	35.7
FSB36N0184J--	0.18	19	0.15	7.6	8.5	32.1
FSB46N0224J--	0.22	26	0.22	9.3	6.8	29.1
FSB56N0304J--	0.3	R68 (2 terminals)	0.41	12	5.3	23.8
FSB56N0304JJC	0.3	R68 (4 terminals)	0.41	12.7	5.3	23.8

Part Number	Capacitance (μF)	(I <sup>2</sup> t) (A <sup>2</sup> s)	I <sub>rms max.</sub> (A)	R <sub>s</sub> (mΩ)	R <sub>th</sub> (°C/W)
<b>FSB 850V</b>					
	<b>V<sub>Ndc</sub> = 850V</b>	<b>V<sub>peak</sub> = 1200V</b>		<b>V<sub>rms</sub> = 450V</b>	
FSB66B0205K--	2	0.99	25	3.4	19.1
FSB66B0225K--	2.2	1.19	28	3.1	18.6
FSB66B0255K--	2.5	1.54	28	2.7	17.8
<b>FSB 1200V</b>					
	<b>V<sub>Ndc</sub> = 1200V</b>	<b>V<sub>peak</sub> = 1600V</b>		<b>V<sub>rms</sub> = 560V</b>	
FSB66U0105K--	1	1.47	25	3.6	17.2
FSB66U0125K--	1.2	1.69	26	3.4	17.5
FSB66U0155K--	1.5	1	26	3.4	17.5
<b>FSB 2000V</b>					
	<b>V<sub>Ndc</sub> = 2000V</b>	<b>V<sub>peak</sub> = 2400V</b>		<b>V<sub>rms</sub> = 700V</b>	
FSB66N0474K--	0.47	0.41	22	6.3	19.4
FSB66N0564K--	0.56	0.62	23	5.2	17.9
FSB66N0684K--	0.68	0.91	24	4.4	17.3