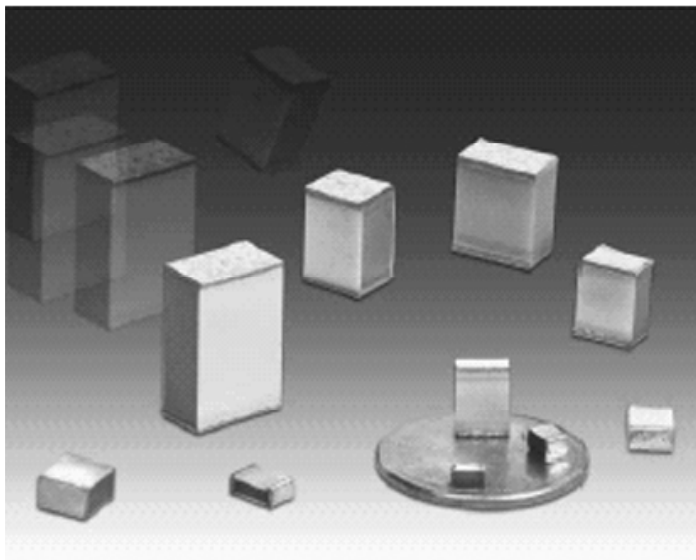


# Type FCN Surface Mount Film Capacitors

## Stable Stacked Metallized Film (PEN) Chips for Reflow Soldering



Type FCN SMT capacitors are the general purpose line of CDE's surface mount product offerings. They range in capacitance from .001  $\mu\text{F}$  to 1.0  $\mu\text{F}$ , and they are available in voltage ratings up to 400 Vdc.

Type FCN capacitors are designed for applications requiring a general purpose SMT capacitor with stable temperature and frequency characteristics similar to polyester film capacitors. They are ideal for applications such as EMI noise filtering, power supply input/output filters, audio or signal coupling, and IC power bus bypassing or decoupling. FCN SMT capacitors have a non-inductive stacked metallized PEN film construction which results in a low ESR and excellent high frequency performance.

### Highlights

- Designed for reflow soldering
- Withstands 150% of rated voltage for 60 seconds
- Stacked metallized polyethylene naphthalate (PEN) film
- Performs like polyester capacitors
- Nonmagnetic and lead-free

### Specifications

<b>Capacitance Range:</b>	1000 pF to 1.0 $\mu\text{F}$ (1 kHz at 5 Vrms)
<b>Capacitance Tolerance:</b>	$\pm 5\%$ (J), $\pm 10\%$ (K) (See Ratings)
<b>Voltages:</b>	16, 50, 100, 250 & 400 Vdc
<b>Operating Temperature Range:</b>	16, 50, 100Vdc (<0.012 $\mu\text{F}$ ); -55 $^{\circ}\text{C}$ to +105 $^{\circ}\text{C}$ 100 Vdc ( $\geq 0.012 \mu\text{F}$ ), 250, 400 Vdc; -40 $^{\circ}\text{C}$ to +85 $^{\circ}\text{C}$
<b>IR (at 20 <math>^{\circ}\text{C}</math>, after 60 seconds):</b>	C >0.33 $\mu\text{F}$ : IR = 1000 $\text{M}\Omega \cdot \mu\text{F}$ Min. C $\leq 0.33 \mu\text{F}$ : IR $\geq 3000 \text{M}\Omega$
<b>Dissipation Factor (Tan<math>\delta</math>):</b>	1.0% Max. (1 kHz at 5 Vrms)
<b>Life Test:</b>	1000 h at rated temp. & 125% rated voltage $\Delta$ Capacitance: +1%, -6% max Dissipation Factor: 1.1% max IR: 1000 $\text{M}\Omega\text{min}$ (C>0.33 $\mu\text{F}$ , 300 $\text{M}\Omega \cdot \mu\text{F}$ min) No significant visual damage
<b>Moisture Resistance:</b>	1000 h at 40 $^{\circ}\text{C}$ and 90 - 95% RH & rated voltage $\Delta$ Capacitance: +8/-5% Dissipation Factor: 1.5% max IR: 100 $\text{M}\Omega$ min (C >0.33 $\mu\text{F}$ , 30 $\text{M}\Omega \cdot \mu\text{F}$ min) Voltage withstanding: 1.3 times rated voltage, 1 min. No significant damage



Complies with the EU Directive 2002/95/EC requirement restricting the use of Lead (Pb), Mercury (Hg), Cadmium (Cd), Hexavalent chromium (Cr(VI)), PolyBrominated Biphenyls (PBB) and PolyBrominated Diphenyl Ethers (PBDE).

# Type FCN Surface Mount Film Capacitors

## Specifications

### Moisture Resistance:

500 h at 85 °C and 85% RH  
 $\Delta$  Capacitance:  $\pm 10\%$  max  
 Dissipation Factor: 2% max  
 IR: 10 M $\Omega$  min (C > 0.33  $\mu$ F, 3 M $\Omega \cdot \mu$ F min)  
 Voltage withstanding: 1.3 times rated voltage, 1 min.  
 No significant damage

### Resistance to Soldering Heat:

5 s at max capacitor surface temperature  
 $\Delta$  Capacitance:  $\pm 5\%$  max  
 Dissipation Factor: 1.1% max  
 IR: 1000 M $\Omega$  min (C > 0.33  $\mu$ F, 300 M $\Omega \cdot \mu$ F min)  
 Voltage withstanding: 1.5 times rated voltage, 1 min.  
 No significant visual damage.

### Withstand Voltage:

16 V & 50 V, 100 V  $\leq$  0.01  $\mu$ F: 175% rated voltage, 5 s  
 100 V  $\geq$  0.012  $\mu$ F, 250 V and 400 V: 150% rated voltage, 5 s

### Surface Temperature:

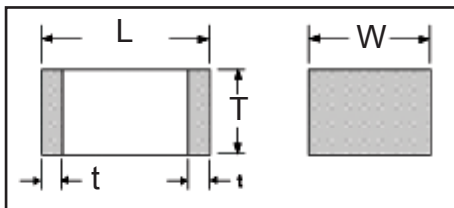
16 V & 50 V & 100 V  $\leq$  0.01  $\mu$ F: 240 °C max  
 100 V  $\geq$  0.012  $\mu$ F, 250 V & 400 V: 230 °C max

## Part Numbering System

FCN	1206	A	102	J	H2	Tape Width (mm)	Tape Diameter [in.(mm)]	Reel Quantity
Type	Case Size	Voltage	Capacitance	Tolerance	Packaging Code			
FCN	1206	C = 16 Vdc	102 = 0.001 $\mu$ F	J = $\pm 5\%$	K1	= 8	7 (178)	4000
	1913	H = 50 Vdc	223 = 0.022 $\mu$ F	K = $\pm 10\%$	J1, J2	= 8	7 (178)	3000
	2416	A = 100 Vdc	474 = 0.47 $\mu$ F		H1, H2	= 8	7 (178)	3000
	2420	E = 250 Vdc			H3	= 8	7 (178)	2000
	2820	G = 400 Vdc			G1, G2, G3	= 8	7 (178)	2000
	3022				E1, E2	= 12	13 (330)	3000
	3925				E3, E4	= 12	13 (330)	2000
	3931				D1, D2	= 12	13 (330)	3000
	6031				D3, D4, D5	= 12	13 (330)	2000
	6040				B, Z	= 12	13 (330)	1500
					U, V, X, Y	= 16	13 (330)	1000
					S, T	= 24	13 (330)	750

# Type FCN Surface Mount Film Capacitors

## Outline Drawing



$t = 0.014 \pm 0.008$  in. ( $0.35 \pm 0.2$  mm)

For  $0.001 \mu\text{F} - 0.01 \mu\text{F}$ , 100 V,  $t = 0.026 \pm 0.012$  in. ( $0.62 \pm 0.3$  mm)

## Ratings

Cap ( $\mu\text{F}$ )	Catalog Part Number	L in (mm)	W in (mm)	T in (mm)
<b>16 Vdc</b>				
.12	FCN1913C124J-E1	0.189±0.008 (4.8±0.2)	0.130±0.012 (3.3±0.3)	0.055±0.008 (1.4±0.2)
.15	FCN1913C154J-E2	0.189±0.008 (4.8±0.2)	0.130±0.012 (3.3±0.3)	0.079±0.008 (2.0±0.2)
.18	FCN1913C184J-E2	0.189±0.008 (4.8±0.2)	0.130±0.012 (3.3±0.3)	0.079±0.008 (2.0±0.2)
.22	FCN1913C224J-E4	0.189±0.008 (4.8±0.2)	0.130±0.012 (3.3±0.3)	0.094±0.008 (2.4±0.2)
.27	FCN2416C274J-D1	0.236±0.008 (6.0±0.2)	0.161±0.012 (4.1±0.3)	0.071±0.008 (1.8±0.2)
.33	FCN2416C334J-D2	0.236±0.008 (6.0±0.2)	0.161±0.012 (4.1±0.3)	0.079±0.008 (2.0±0.2)
.39	FCN2416C394J-D3	0.236±0.008 (6.0±0.2)	0.161±0.012 (4.1±0.3)	0.094±0.008 (2.4±0.2)
.47	FCN2416C474J-D4	0.236±0.008 (6.0±0.2)	0.161±0.012 (4.1±0.3)	0.110±0.008 (2.8±0.2)
<b>50 Vdc</b>				
.056	FCN1913H563J-E2	0.189±0.008 (4.8±0.3)	0.130±0.012 (3.3±0.3)	0.055±0.008 (1.4±0.2)
.068	FCN1913H683J-E2	0.189±0.008 (4.8±0.3)	0.130±0.012 (3.3±0.3)	0.079±0.008 (2.0±0.2)
.082	FCN1913H823J-E4	0.189±0.008 (4.8±0.3)	0.130±0.012 (3.3±0.3)	0.079±0.008 (2.0±0.2)
.10	FCN1913H104J-E3	0.189±0.008 (4.8±0.3)	0.130±0.012 (3.3±0.3)	0.094±0.008 (2.4±0.2)
.12	FCN2416H124J-D1	0.236±0.008 (6.0±0.2)	0.161±0.012 (4.1±0.3)	0.071±0.008 (1.8±0.2)
.15	FCN2416H154J-D2	0.236±0.008 (6.0±0.2)	0.161±0.012 (4.1±0.3)	0.079±0.008 (2.0±0.2)
.18	FCN2416H184J-D3	0.236±0.008 (6.0±0.2)	0.161±0.012 (4.1±0.3)	0.094±0.008 (2.4±0.2)
.22	FCN2416H224J-D4	0.236±0.008 (6.0±0.2)	0.161±0.012 (4.1±0.3)	0.110±0.008 (2.8±0.2)
<b>100 Vdc</b>				
.0010	FCN1206A102J-H2	0.126±0.008 (3.2±0.2)	0.063±0.012 (1.6±0.3)	0.043±0.008 (1.1±0.2)
.0012	FCN1206A122J-H2	0.126±0.008 (3.2±0.2)	0.063±0.012 (1.6±0.3)	0.043±0.008 (1.1±0.2)
.0015	FCN1206A152J-H2	0.126±0.008 (3.2±0.2)	0.063±0.012 (1.6±0.3)	0.043±0.008 (1.1±0.2)
.0018	FCN1206A182J-H2	0.126±0.008 (3.2±0.2)	0.063±0.012 (1.6±0.3)	0.043±0.008 (1.1±0.2)
.0022	FCN1206A222J-H2	0.126±0.008 (3.2±0.2)	0.063±0.012 (1.6±0.3)	0.043±0.008 (1.1±0.2)
.0027	FCN1206A272J-H2	0.126±0.008 (3.2±0.2)	0.063±0.012 (1.6±0.3)	0.043±0.008 (1.1±0.2)
.0033	FCN1206A332J-H3	0.126±0.008 (3.2±0.2)	0.063±0.012 (1.6±0.3)	0.059±0.008 (1.5±0.2)
.0039	FCN1206A392J-H3	0.126±0.008 (3.2±0.2)	0.063±0.012 (1.6±0.3)	0.059±0.008 (1.5±0.2)
.0047	FCN1206A472J-H3	0.126±0.008 (3.2±0.2)	0.063±0.012 (1.6±0.3)	0.059±0.008 (1.5±0.2)
.0056	FCN1210A562J-G2	0.126±0.008 (3.2±0.2)	0.063±0.012 (1.6±0.3)	0.059±0.008 (1.5±0.2)
.0068	FCN1210A682J-G2	0.126±0.008 (3.2±0.2)	0.063±0.012 (1.6±0.3)	0.059±0.008 (1.5±0.2)
.0082	FCN1210A822J-G3	0.126±0.008 (3.2±0.2)	0.063±0.012 (1.6±0.3)	0.083±0.008 (2.1±0.2)
.010	FCN1210A103J-G3	0.126±0.008 (3.2±0.2)	0.063±0.012 (1.6±0.3)	0.083±0.008 (2.1±0.2)
.012	FCN1913A123K-E1	0.189±0.008 (4.8±0.2)	0.189±0.008 (3.3±0.3)	0.055±0.008 (1.4±0.2)
.015	FCN1913A153K-E1	0.189±0.008 (4.8±0.2)	0.189±0.008 (3.3±0.3)	0.055±0.008 (1.4±0.2)
.018	FCN1913A183K-E1	0.189±0.008 (4.8±0.2)	0.189±0.008 (3.3±0.3)	0.055±0.008 (1.4±0.2)
.022	FCN1913A223K-E1	0.189±0.008 (4.8±0.2)	0.189±0.008 (3.3±0.3)	0.055±0.008 (1.4±0.2)
.027	FCN1913A273K-E1	0.189±0.008 (4.8±0.2)	0.189±0.008 (3.3±0.3)	0.055±0.008 (1.4±0.2)
.033	FCN1913A333K-E1	0.189±0.008 (4.8±0.2)	0.189±0.008 (3.3±0.3)	0.055±0.008 (1.4±0.2)
.039	FCN1913A393K-E1	0.189±0.008 (4.8±0.2)	0.189±0.008 (3.3±0.3)	0.055±0.008 (1.4±0.2)

# Type FCN Surface Mount Film Capacitors

Cap ( $\mu$ F)	Catalog Part Number	L in (mm)	W in (mm)	T in (mm)
<b>100 Vdc</b>				
.047	FCN1913A473K-E2	0.189 $\pm$ 0.008 (4.8 $\pm$ 0.2)	0.189 $\pm$ 0.008 (3.3 $\pm$ 0.3)	0.079 $\pm$ 0.008 (2.0 $\pm$ 0.2)
.056	FCN1913A563K-E2	0.189 $\pm$ 0.008 (4.8 $\pm$ 0.2)	0.189 $\pm$ 0.008 (3.3 $\pm$ 0.3)	0.079 $\pm$ 0.008 (2.0 $\pm$ 0.2)
.068	FCN1913A683K-E4	0.189 $\pm$ 0.008 (4.8 $\pm$ 0.2)	0.189 $\pm$ 0.008 (3.3 $\pm$ 0.3)	0.094 $\pm$ 0.008 (2.4 $\pm$ 0.2)
.082	FCN1913A823K-E3	0.189 $\pm$ 0.008 (4.8 $\pm$ 0.2)	0.189 $\pm$ 0.008 (3.3 $\pm$ 0.3)	0.110 $\pm$ 0.012 (2.8 $\pm$ 0.3)
.10	FCN2416A104K-D1	0.189 $\pm$ 0.008 (4.8 $\pm$ 0.2)	0.236 $\pm$ 0.008 (6.0 $\pm$ 0.2)	0.071 $\pm$ 0.012 (1.8 $\pm$ 0.3)
.12	FCN2416A124K-D3*	0.189 $\pm$ 0.008 (4.8 $\pm$ 0.2)	0.236 $\pm$ 0.008 (6.0 $\pm$ 0.2)	0.099 $\pm$ 0.012 (2.4 $\pm$ 0.3)
.15	FCN2416A154K-D4*	0.189 $\pm$ 0.008 (4.8 $\pm$ 0.2)	0.236 $\pm$ 0.008 (6.0 $\pm$ 0.2)	0.110 $\pm$ 0.012 (2.8 $\pm$ 0.3)
.18	FCN2820A184K-Z	0.280 $\pm$ 0.016 (7.1 $\pm$ 0.4)	0.197 $\pm$ 0.016 (5.0 $\pm$ 0.4)	0.079 $\pm$ 0.012 (2.0 $\pm$ 0.3)
.22	FCN2820A224K-Z	0.280 $\pm$ 0.016 (7.1 $\pm$ 0.4)	0.197 $\pm$ 0.016 (5.0 $\pm$ 0.4)	0.094 $\pm$ 0.012 (2.4 $\pm$ 0.3)
.27	FCN2820A274K-Z	0.280 $\pm$ 0.016 (7.1 $\pm$ 0.4)	0.197 $\pm$ 0.016 (5.0 $\pm$ 0.4)	0.114 $\pm$ 0.012 (2.9 $\pm$ 0.3)
.33	FCN2820A334K-Z	0.280 $\pm$ 0.016 (7.1 $\pm$ 0.4)	0.197 $\pm$ 0.016 (5.0 $\pm$ 0.4)	0.138 $\pm$ 0.012 (3.5 $\pm$ 0.3)
.39	FCN3022A394K-X	0.303 $\pm$ 0.016 (7.7 $\pm$ 0.4)	0.217 $\pm$ 0.016 (5.5 $\pm$ 0.4)	0.134 $\pm$ 0.012 (3.4 $\pm$ 0.3)
.47	FCN3022A474K-X	0.303 $\pm$ 0.016 (7.7 $\pm$ 0.4)	0.217 $\pm$ 0.016 (5.5 $\pm$ 0.4)	0.157 $\pm$ 0.012 (4.0 $\pm$ 0.3)
.56	FCN3925A564K-V	0.386 $\pm$ 0.016 (9.8 $\pm$ 0.4)	0.248 $\pm$ 0.016 (6.3 $\pm$ 0.4)	0.118 $\pm$ 0.012 (3.0 $\pm$ 0.3)
.68	FCN3925A684K-V	0.386 $\pm$ 0.016 (9.8 $\pm$ 0.4)	0.248 $\pm$ 0.016 (6.3 $\pm$ 0.4)	0.142 $\pm$ 0.012 (3.6 $\pm$ 0.3)
.82	FCN3925A824K-V	0.386 $\pm$ 0.016 (9.8 $\pm$ 0.4)	0.248 $\pm$ 0.016 (6.3 $\pm$ 0.4)	0.169 $\pm$ 0.012 (4.3 $\pm$ 0.3)
1.0	FCN3925A105K-V	0.386 $\pm$ 0.016 (9.8 $\pm$ 0.4)	0.248 $\pm$ 0.016 (6.3 $\pm$ 0.4)	0.201 $\pm$ 0.012 (5.1 $\pm$ 0.3)
<b>250 Vdc</b>				
.0010	FCN1913E102K-E1*	0.189 $\pm$ 0.008 (4.8 $\pm$ 0.2)	0.130 $\pm$ 0.012 (3.3 $\pm$ 0.3)	0.055 $\pm$ 0.008 (1.4 $\pm$ 0.2)
.0012	FCN1913E122K-E1*	0.189 $\pm$ 0.008 (4.8 $\pm$ 0.2)	0.130 $\pm$ 0.012 (3.3 $\pm$ 0.3)	0.055 $\pm$ 0.008 (1.4 $\pm$ 0.2)
.0015	FCN1913E152K-E1*	0.189 $\pm$ 0.008 (4.8 $\pm$ 0.2)	0.130 $\pm$ 0.012 (3.3 $\pm$ 0.3)	0.055 $\pm$ 0.008 (1.4 $\pm$ 0.2)
.0018	FCN1913E182K-E1*	0.189 $\pm$ 0.008 (4.8 $\pm$ 0.2)	0.130 $\pm$ 0.012 (3.3 $\pm$ 0.3)	0.055 $\pm$ 0.008 (1.4 $\pm$ 0.2)
.0022	FCN1913E222K-E1*	0.189 $\pm$ 0.008 (4.8 $\pm$ 0.2)	0.130 $\pm$ 0.012 (3.3 $\pm$ 0.3)	0.055 $\pm$ 0.008 (1.4 $\pm$ 0.2)
.0027	FCN1913E272K-E1*	0.189 $\pm$ 0.008 (4.8 $\pm$ 0.2)	0.130 $\pm$ 0.012 (3.3 $\pm$ 0.3)	0.055 $\pm$ 0.008 (1.4 $\pm$ 0.2)
.0033	FCN1913E332K-E1*	0.189 $\pm$ 0.008 (4.8 $\pm$ 0.2)	0.130 $\pm$ 0.012 (3.3 $\pm$ 0.3)	0.055 $\pm$ 0.008 (1.4 $\pm$ 0.2)
.0039	FCN1913E392K-E1*	0.189 $\pm$ 0.008 (4.8 $\pm$ 0.2)	0.130 $\pm$ 0.012 (3.3 $\pm$ 0.3)	0.055 $\pm$ 0.008 (1.4 $\pm$ 0.2)
.0047	FCN1913E472K-E1*	0.189 $\pm$ 0.008 (4.8 $\pm$ 0.2)	0.130 $\pm$ 0.012 (3.3 $\pm$ 0.3)	0.055 $\pm$ 0.008 (1.4 $\pm$ 0.2)
.0056	FCN1913E562K-E1*	0.189 $\pm$ 0.008 (4.8 $\pm$ 0.2)	0.130 $\pm$ 0.012 (3.3 $\pm$ 0.3)	0.055 $\pm$ 0.008 (1.4 $\pm$ 0.2)
.0068	FCN1913E682K-E1*	0.189 $\pm$ 0.008 (4.8 $\pm$ 0.2)	0.130 $\pm$ 0.012 (3.3 $\pm$ 0.3)	0.055 $\pm$ 0.008 (1.4 $\pm$ 0.2)
.0082	FCN1913E822K-E1*	0.189 $\pm$ 0.008 (4.8 $\pm$ 0.2)	0.130 $\pm$ 0.012 (3.3 $\pm$ 0.3)	0.055 $\pm$ 0.008 (1.4 $\pm$ 0.2)
.010	FCN1913E103K-E1*	0.189 $\pm$ 0.008 (4.8 $\pm$ 0.2)	0.130 $\pm$ 0.012 (3.3 $\pm$ 0.3)	0.055 $\pm$ 0.008 (1.4 $\pm$ 0.2)
.012	FCN1913E123K-E1*	0.189 $\pm$ 0.008 (4.8 $\pm$ 0.2)	0.130 $\pm$ 0.012 (3.3 $\pm$ 0.3)	0.055 $\pm$ 0.008 (1.4 $\pm$ 0.2)
.015	FCN1913E153K-E1*	0.189 $\pm$ 0.008 (4.8 $\pm$ 0.2)	0.130 $\pm$ 0.012 (3.3 $\pm$ 0.3)	0.055 $\pm$ 0.008 (1.4 $\pm$ 0.2)
.018	FCN1913E183K-E2*	0.189 $\pm$ 0.008 (4.8 $\pm$ 0.2)	0.130 $\pm$ 0.012 (3.3 $\pm$ 0.3)	0.079 $\pm$ 0.008 (2.0 $\pm$ 0.2)
.022	FCN1913E223K-E2*	0.189 $\pm$ 0.008 (4.8 $\pm$ 0.2)	0.130 $\pm$ 0.012 (3.3 $\pm$ 0.3)	0.094 $\pm$ 0.008 (2.4 $\pm$ 0.2)
.027	FCN1913E273K-E4*	0.189 $\pm$ 0.008 (4.8 $\pm$ 0.2)	0.130 $\pm$ 0.012 (3.3 $\pm$ 0.3)	0.110 $\pm$ 0.008 (2.8 $\pm$ 0.2)
.033	FCN1913E333K-E3*	0.189 $\pm$ 0.008 (4.8 $\pm$ 0.2)	0.130 $\pm$ 0.012 (3.3 $\pm$ 0.3)	0.126 $\pm$ 0.008 (3.2 $\pm$ 0.2)
.039	FCN2416E393K-D2*	0.236 $\pm$ 0.008 (6.0 $\pm$ 0.2)	0.161 $\pm$ 0.012 (4.1 $\pm$ 0.3)	0.079 $\pm$ 0.008 (2.0 $\pm$ 0.2)
.047	FCN2416E473K-D3*	0.236 $\pm$ 0.008 (6.0 $\pm$ 0.2)	0.161 $\pm$ 0.012 (4.1 $\pm$ 0.3)	0.079 $\pm$ 0.008 (2.0 $\pm$ 0.2)
.056	FCN2416E563K-D4*	0.236 $\pm$ 0.008 (6.0 $\pm$ 0.2)	0.161 $\pm$ 0.012 (4.1 $\pm$ 0.3)	0.094 $\pm$ 0.008 (2.4 $\pm$ 0.2)
.068	FCN2416E683K-D5*	0.236 $\pm$ 0.008 (6.0 $\pm$ 0.2)	0.161 $\pm$ 0.012 (4.1 $\pm$ 0.3)	0.110 $\pm$ 0.008 (2.8 $\pm$ 0.2)
.082	FCN2420E823K-B*	0.236 $\pm$ 0.008 (6.0 $\pm$ 0.2)	0.197 $\pm$ 0.016 (5.0 $\pm$ 0.4)	0.126 $\pm$ 0.012 (3.2 $\pm$ 0.3)
.10	FCN2420E104K-B*	0.236 $\pm$ 0.008 (6.0 $\pm$ 0.2)	0.197 $\pm$ 0.016 (5.0 $\pm$ 0.4)	0.150 $\pm$ 0.012 (3.8 $\pm$ 0.3)
.12	FCN2420E124K-B*	0.236 $\pm$ 0.008 (6.0 $\pm$ 0.2)	0.197 $\pm$ 0.016 (5.0 $\pm$ 0.4)	0.177 $\pm$ 0.012 (4.5 $\pm$ 0.3)
.15	FCN2825E154K-Y	0.280 $\pm$ 0.016 (7.1 $\pm$ 0.4)	0.248 $\pm$ 0.016 (6.3 $\pm$ 0.4)	0.138 $\pm$ 0.012 (3.5 $\pm$ 0.3)
.18	FCN2825E184K-Y	0.280 $\pm$ 0.016 (7.1 $\pm$ 0.4)	0.248 $\pm$ 0.016 (6.3 $\pm$ 0.4)	0.161 $\pm$ 0.012 (4.1 $\pm$ 0.3)
.22	FCN2825E224K-Y	0.280 $\pm$ 0.016 (7.1 $\pm$ 0.4)	0.248 $\pm$ 0.016 (6.3 $\pm$ 0.4)	0.201 $\pm$ 0.012 (5.1 $\pm$ 0.3)
.27	FCN3925E274K-V	0.386 $\pm$ 0.020 (9.8 $\pm$ 0.5)	0.248 $\pm$ 0.016 (6.3 $\pm$ 0.4)	0.154 $\pm$ 0.012 (3.9 $\pm$ 0.3)

\* also available in 5% (J) tolerance

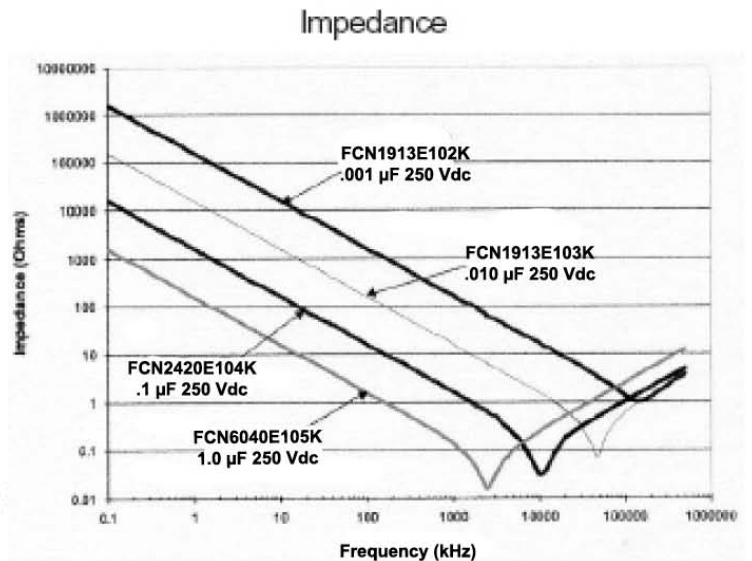
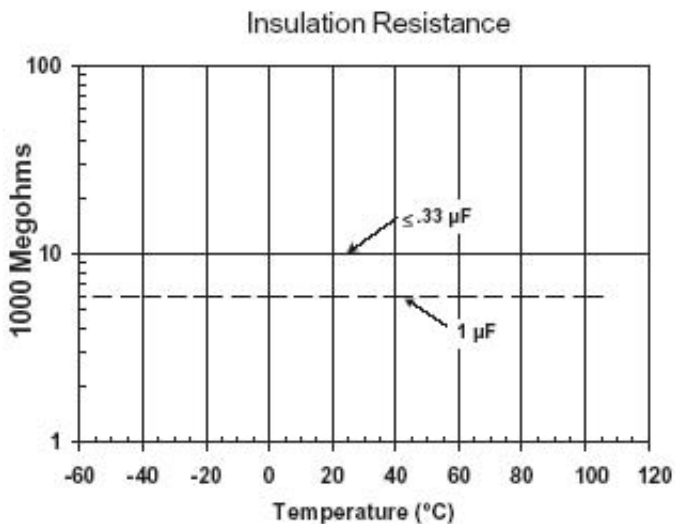
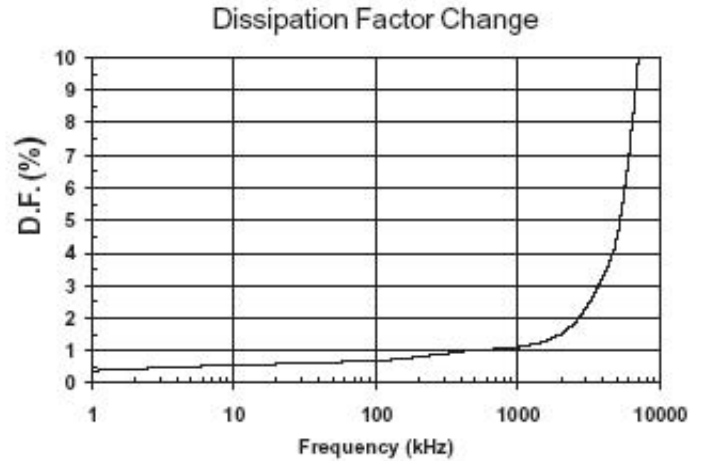
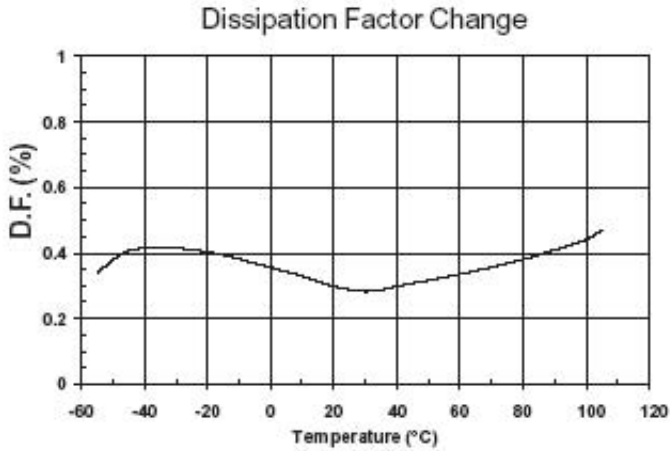
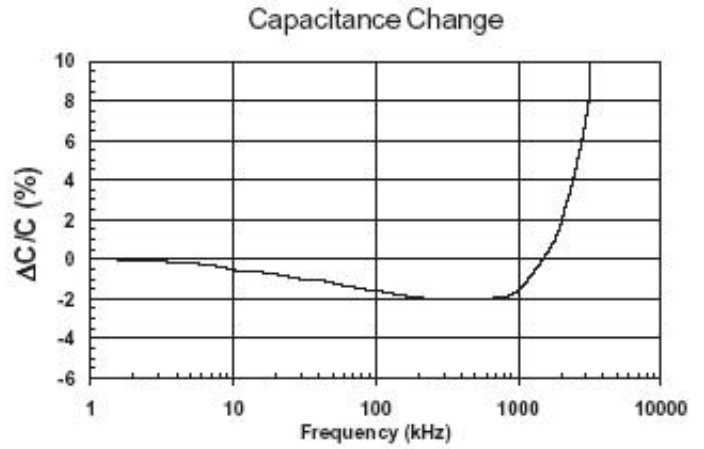
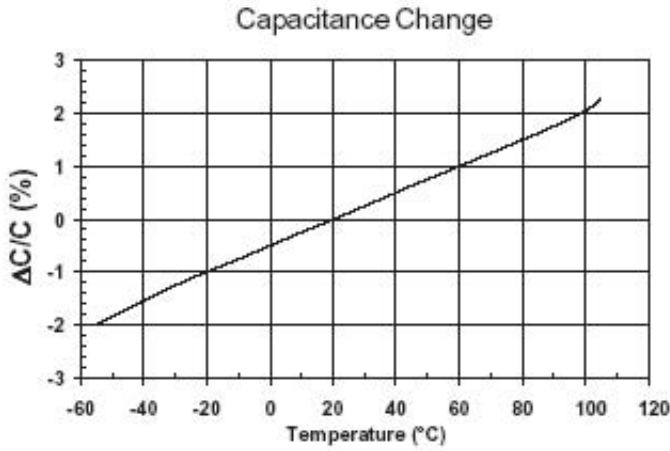
# Type FCN Surface Mount Film Capacitors

Cap ( $\mu$ F)	Catalog Part Number	L in (mm)	W in (mm)	T in (mm)
<b>250 Vdc</b>				
.33	FCN3925E334K-V	0.386 $\pm$ 0.020 (9.8 $\pm$ 0.5)	0.248 $\pm$ 0.016 (6.3 $\pm$ 0.4)	0.189 $\pm$ 0.012 (4.8 $\pm$ 0.3)
.39	FCN3931E394K-U	0.386 $\pm$ 0.020 (9.8 $\pm$ 0.5)	0.315 $\pm$ 0.016 (8.0 $\pm$ 0.4)	0.173 $\pm$ 0.012 (4.4 $\pm$ 0.3)
.47	FCN3931E474K-U	0.386 $\pm$ 0.020 (9.8 $\pm$ 0.5)	0.315 $\pm$ 0.016 (8.0 $\pm$ 0.4)	0.209 $\pm$ 0.012 (5.3 $\pm$ 0.3)
.56	FCN6031E564K-T	0.598 $\pm$ 0.020 (15.2 $\pm$ 0.5)	0.315 $\pm$ 0.016 (8.0 $\pm$ 0.4)	0.146 $\pm$ 0.012 (3.7 $\pm$ 0.3)
.68	FCN6031E684K-T	0.598 $\pm$ 0.020 (15.2 $\pm$ 0.5)	0.315 $\pm$ 0.016 (8.0 $\pm$ 0.4)	0.173 $\pm$ 0.012 (4.4 $\pm$ 0.3)
.82	FCN6040E824K-S	0.598 $\pm$ 0.020 (15.2 $\pm$ 0.5)	0.394 $\pm$ 0.016 (10.0 $\pm$ 0.4)	0.165 $\pm$ 0.012 (4.2 $\pm$ 0.3)
1.0	FCN6040E105K-S	0.598 $\pm$ 0.020 (15.2 $\pm$ 0.5)	0.394 $\pm$ 0.016 (10.0 $\pm$ 0.4)	0.201 $\pm$ 0.012 (5.1 $\pm$ 0.3)
<b>400 Vdc</b>				
.0010	FCN1913G102J-E1	0.189 $\pm$ 0.008 (4.8 $\pm$ 0.2)	0.130 $\pm$ 0.012 (3.3 $\pm$ 0.3)	0.055 $\pm$ 0.008 (1.4 $\pm$ 0.2)
.0012	FCN1913G122J-E1	0.189 $\pm$ 0.008 (4.8 $\pm$ 0.2)	0.130 $\pm$ 0.012 (3.3 $\pm$ 0.3)	0.055 $\pm$ 0.008 (1.4 $\pm$ 0.2)
.0015	FCN1913G152J-E1	0.189 $\pm$ 0.008 (4.8 $\pm$ 0.2)	0.130 $\pm$ 0.012 (3.3 $\pm$ 0.3)	0.055 $\pm$ 0.008 (1.4 $\pm$ 0.2)
.0018	FCN1913G182J-E1	0.189 $\pm$ 0.008 (4.8 $\pm$ 0.2)	0.130 $\pm$ 0.012 (3.3 $\pm$ 0.3)	0.055 $\pm$ 0.008 (1.4 $\pm$ 0.2)
.0022	FCN1913G222J-E1	0.189 $\pm$ 0.008 (4.8 $\pm$ 0.2)	0.130 $\pm$ 0.012 (3.3 $\pm$ 0.3)	0.055 $\pm$ 0.008 (1.4 $\pm$ 0.2)
.0027	FCN1913G272J-E1	0.189 $\pm$ 0.008 (4.8 $\pm$ 0.2)	0.130 $\pm$ 0.012 (3.3 $\pm$ 0.3)	0.055 $\pm$ 0.008 (1.4 $\pm$ 0.2)
.0033	FCN1913G332J-E1	0.189 $\pm$ 0.008 (4.8 $\pm$ 0.2)	0.130 $\pm$ 0.012 (3.3 $\pm$ 0.3)	0.055 $\pm$ 0.008 (1.4 $\pm$ 0.2)
.0039	FCN1913G392J-E1	0.189 $\pm$ 0.008 (4.8 $\pm$ 0.2)	0.130 $\pm$ 0.012 (3.3 $\pm$ 0.3)	0.055 $\pm$ 0.008 (1.4 $\pm$ 0.2)
.0047	FCN1913G472J-E1	0.189 $\pm$ 0.008 (4.8 $\pm$ 0.2)	0.130 $\pm$ 0.012 (3.3 $\pm$ 0.3)	0.055 $\pm$ 0.008 (1.4 $\pm$ 0.2)
.0056	FCN1913G562J-E2	0.189 $\pm$ 0.008 (4.8 $\pm$ 0.2)	0.130 $\pm$ 0.012 (3.3 $\pm$ 0.3)	0.079 $\pm$ 0.008 (2.0 $\pm$ 0.2)
.0068	FCN1913G682J-E2	0.189 $\pm$ 0.008 (4.8 $\pm$ 0.2)	0.130 $\pm$ 0.012 (3.3 $\pm$ 0.3)	0.079 $\pm$ 0.008 (2.0 $\pm$ 0.2)
.0082	FCN1913G822J-E4	0.189 $\pm$ 0.008 (4.8 $\pm$ 0.2)	0.130 $\pm$ 0.012 (3.3 $\pm$ 0.3)	0.094 $\pm$ 0.008 (2.4 $\pm$ 0.2)
.010	FCN1913G103J-E3	0.189 $\pm$ 0.008 (4.8 $\pm$ 0.2)	0.130 $\pm$ 0.012 (3.3 $\pm$ 0.3)	0.110 $\pm$ 0.008 (2.8 $\pm$ 0.2)
.012	FCN2416G123J-D2	0.236 $\pm$ 0.008 (6.0 $\pm$ 0.2)	0.161 $\pm$ 0.012 (4.1 $\pm$ 0.3)	0.079 $\pm$ 0.008 (2.0 $\pm$ 0.2)
.015	FCN2416G153J-D3	0.236 $\pm$ 0.008 (6.0 $\pm$ 0.2)	0.161 $\pm$ 0.012 (4.1 $\pm$ 0.3)	0.079 $\pm$ 0.008 (2.0 $\pm$ 0.2)
.018	FCN2416G183J-D4	0.236 $\pm$ 0.008 (6.0 $\pm$ 0.2)	0.161 $\pm$ 0.012 (4.1 $\pm$ 0.3)	0.110 $\pm$ 0.008 (2.8 $\pm$ 0.2)
.022	FCN2416G223J-D5	0.236 $\pm$ 0.008 (6.0 $\pm$ 0.2)	0.161 $\pm$ 0.012 (4.1 $\pm$ 0.3)	0.126 $\pm$ 0.012 (3.2 $\pm$ 0.3)
.027	FCN2420G273J-B	0.236 $\pm$ 0.008 (6.0 $\pm$ 0.2)	0.197 $\pm$ 0.016 (5.0 $\pm$ 0.4)	0.118 $\pm$ 0.012 (3.0 $\pm$ 0.3)
.033	FCN2420G333J-B	0.236 $\pm$ 0.008 (6.0 $\pm$ 0.2)	0.197 $\pm$ 0.016 (5.0 $\pm$ 0.4)	0.142 $\pm$ 0.012 (3.6 $\pm$ 0.3)
.039	FCN2820G393J-Z	0.280 $\pm$ 0.016 (7.1 $\pm$ 0.4)	0.197 $\pm$ 0.016 (5.0 $\pm$ 0.4)	0.126 $\pm$ 0.012 (3.2 $\pm$ 0.3)
.047	FCN2820G473J-Z	0.280 $\pm$ 0.016 (7.1 $\pm$ 0.4)	0.197 $\pm$ 0.016 (5.0 $\pm$ 0.4)	0.150 $\pm$ 0.012 (3.8 $\pm$ 0.3)
.056	FCN2825G563J-Y	0.280 $\pm$ 0.016 (7.1 $\pm$ 0.4)	0.248 $\pm$ 0.016 (6.3 $\pm$ 0.4)	0.142 $\pm$ 0.012 (3.6 $\pm$ 0.3)
.068	FCN2825G683J-Y	0.280 $\pm$ 0.016 (7.1 $\pm$ 0.4)	0.248 $\pm$ 0.016 (6.3 $\pm$ 0.4)	0.173 $\pm$ 0.012 (4.4 $\pm$ 0.3)
.082	FCN3925G823J-V	0.386 $\pm$ 0.016 (9.8 $\pm$ 0.4)	0.248 $\pm$ 0.016 (6.3 $\pm$ 0.4)	0.134 $\pm$ 0.012 (3.4 $\pm$ 0.3)
.10	FCN3925G104J-V	0.386 $\pm$ 0.016 (9.8 $\pm$ 0.4)	0.248 $\pm$ 0.016 (6.3 $\pm$ 0.4)	0.157 $\pm$ 0.012 (4.0 $\pm$ 0.3)
.12	FCN3931G124J-U	0.386 $\pm$ 0.016 (9.8 $\pm$ 0.4)	0.315 $\pm$ 0.016 (8.0 $\pm$ 0.4)	0.150 $\pm$ 0.012 (3.8 $\pm$ 0.3)
.15	FCN3931G154J-U	0.386 $\pm$ 0.016 (9.8 $\pm$ 0.4)	0.315 $\pm$ 0.016 (8.0 $\pm$ 0.4)	0.181 $\pm$ 0.012 (4.6 $\pm$ 0.3)

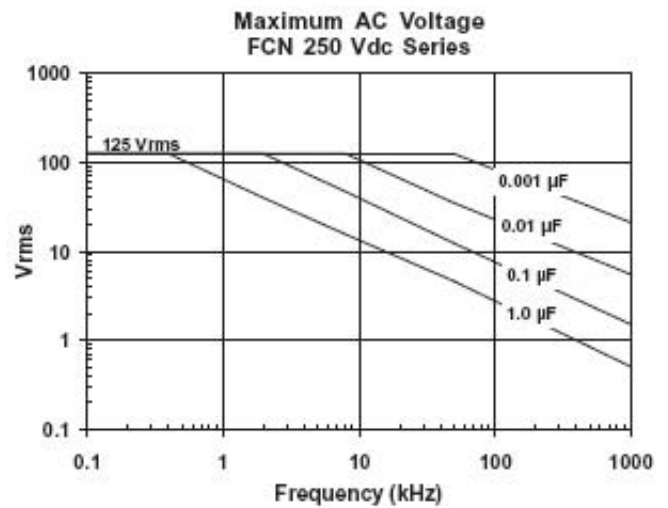
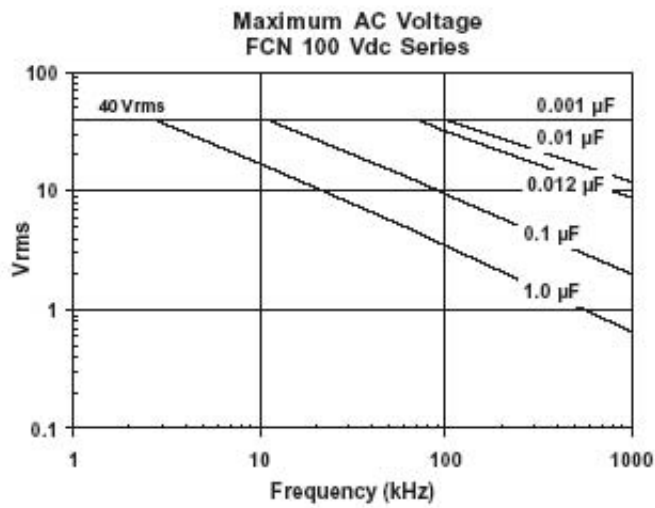
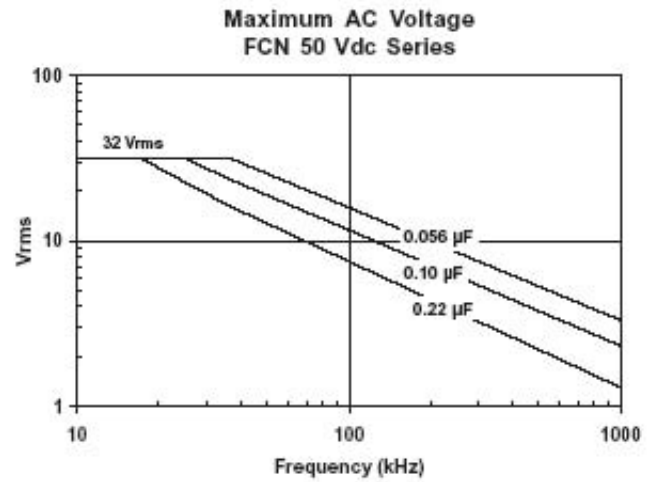
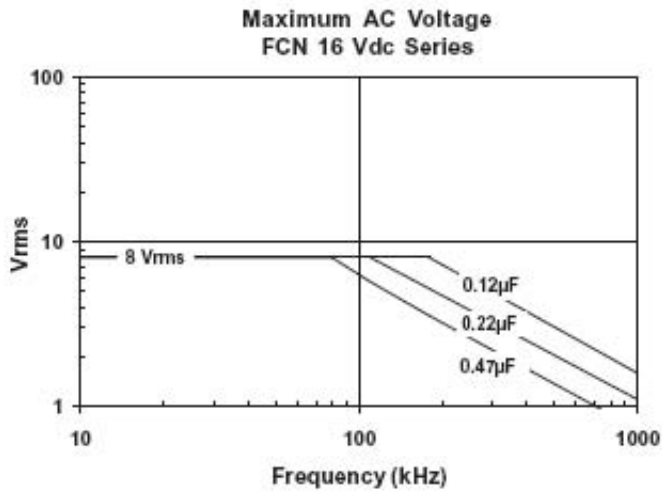
# Type FCN Surface Mount Film Capacitors

## Typical Temperature Characteristics

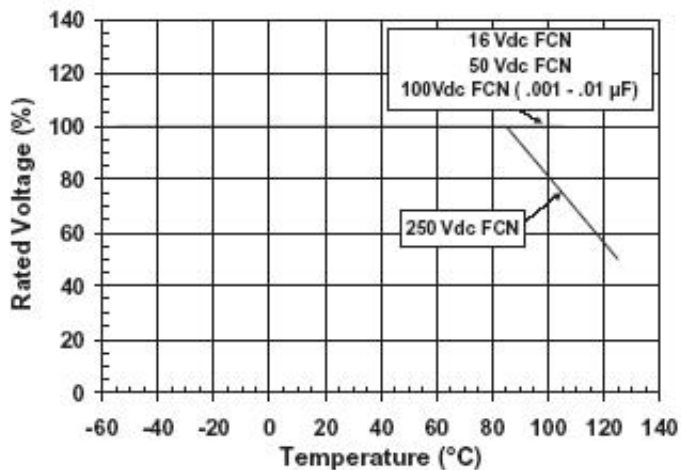
## Typical Frequency Characteristics



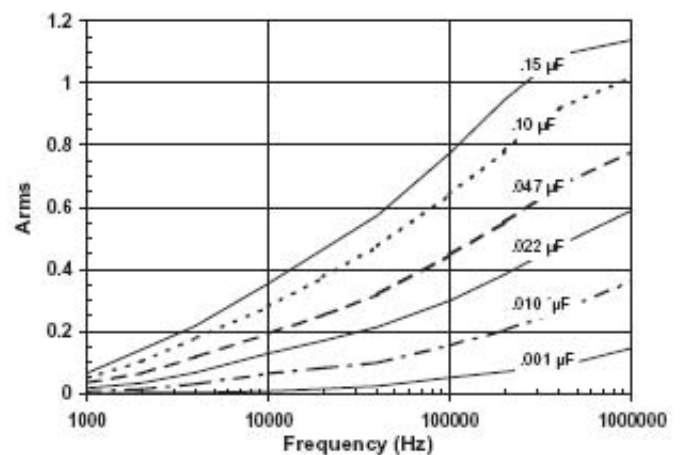
## Vrms vs. Frequency Characteristics



### Voltage Derating vs Temperature



### Maximum RMS Current vs Frequency 400 Vdc FCN



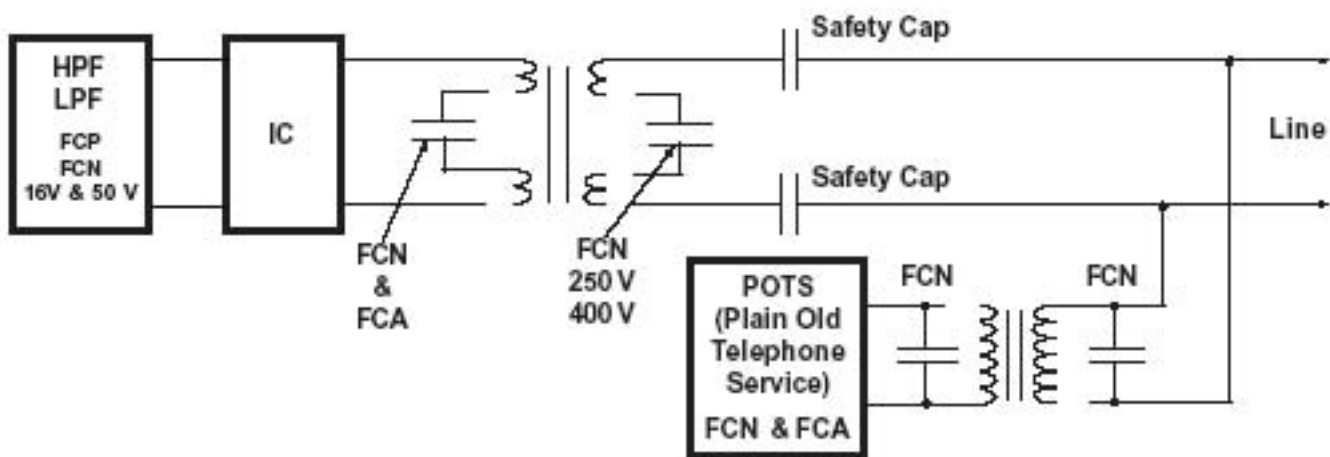
# Type FCN Surface Mount Film Capacitors

## Pulse Handling Capability

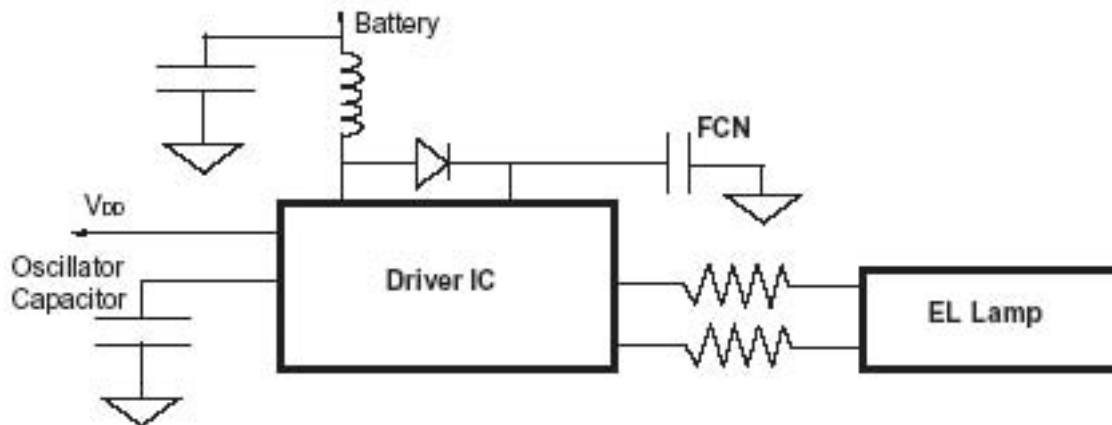
Capacitance ( $\mu\text{F}$ )	Voltage (Vdc)	dV/dt (volts/ $\mu\text{sec}$ )	Capacitance ( $\mu\text{F}$ )	Voltage (Vdc)	dV/dt (volts/ $\mu\text{sec}$ )	Capacitance ( $\mu\text{F}$ )	Voltage (Vdc)	dV/dt (volts/ $\mu\text{sec}$ )
.12 - .22	16	60	.0039	100	530	.001 - .0039	250	615
.27 - .47	16	40	.0047	100	480	.0047 - .033	250	360
.056 - .10	50	190	.0056	100	450	.039 - .12	250	240
.12 - .22	50	130	.0068	100	410	.15 - .22	250	190
.001	100	1000	.0082	100	370	.27 - .47	250	115
.0012	100	920	.01	100	340	.56 - 1.0	250	65
.0015	100	830	.012 - .082	100	320	.001 - .0039	400	615
.0018	100	760	.10 - .15	100	210	.0047 - .01	400	360
.0022	100	690	.18 - .33	100	120	.012 - .033	400	240
.0027	100	630	.39 - .47	100	100	.039 - .068	400	190
.0033	100	570	.056 - 1.0	100	70	.082 - .15	400	115

## Typical Applications

### DC Blocking for xDSL



### Integration for Electroluminescent (EL) Driver



With no piezoelectric effects to deal with, the SMT film capacitor will not create electrical noise in signal circuits or buzzing in power circuits.