

### Surface Mount Type

Series: **FK** Type: **V**

**FK** High temperature Lead-Free reflow(suffix:A\*)



#### ■ Features

- Endurance: 2000 h at 105 °C
- Low impedance (40 % to 60 % less than FC series)  
Miniatrized (30 % to 50 % less than FC series)
- Vibration-proof product is available upon request. ( $\phi$ 8 mm and larger)
- RoHS directive compliant

#### ■ Specifications

Category	Temp. Range	-55 °C to +105 °C									
Rated W.V.Range		6.3 V.DC to 35 V.DC									
Nominal Cap.Range		4.7 $\mu$ F to 1500 $\mu$ F									
Capacitance Tolerance		$\pm 20\%$ (120 Hz/+20 °C)									
DC Leakage Current		$I \leq 0.01$ CV or 3 ( $\mu$ A) After 2 minutes (Whichever is greater)									
$\tan \delta$		Please see the attached High temperature lead-free reflow products list.									
Characteristics at Low Temperature	W.V. (V)	6.3	10	16	25	35					
	Z(-25 °C)/Z(+20 °C)	2	2	2	2	2					
	Z(-40 °C)/Z(+20 °C)	3	3	3	3	3					
	Z(-55 °C)/Z(+20 °C)	4	4	4	3	3					
Endurance	After applying rated working voltage for 2000 hours at +105 °C $\pm 2$ °C and then being stabilized at +20 °C, Capacitors shall meet the following limits.										
	Capacitance change	$\pm 30\%$ of initial measured value									
	$\tan \delta$	$\leq 200\%$ of initial specified value									
	DC leakage current	$\leq$ initial specified value									
Shelf Life	After storage for 1000 hours at +105 °C $\pm 2$ °C with no voltage applied and then being stabilized at +20 °C, capacitors shall meet the limits specified in Endurance. (With voltage treatment)										
Resistance to Soldering Heat	After reflow soldering and then being stabilized at +20 °C, capacitor shall meet the following limits.										
	Capacitance change	$\pm 10\%$ of initial measured value									
	$\tan \delta$	$\leq$ initial specified value									
	DC leakage current	$\leq$ initial specified value									

#### ■ Frequency correction factor for ripple current

Cap ( $\mu$ F)	Frequency (Hz)			
	120	1 k	10 k	100 k to
4.7 to 470	0.65	0.85	0.95	1.00
680 to 1500	0.70	0.90	0.95	1.00

#### ■ Marking

Example: 6.3 V 22 $\mu$ F		
Marking color : BLACK		
Negative polarity marking (-)	Capacitance ( $\mu$ F)	
22	Series identification	
j	Mark for Lead-Free Products Black Dot (Square)	
FK	Rated voltage Mark	
Lot number		
<b>Rated Voltage Mark</b>		
j	6.3 V	E
A	10 V	V
C	16 V	25 V
		35 V

#### ■ Dimensions in mm (not to scale)

(Unit : mm)

Size code	D	L	A, B	H	I	W	P	K
B	4.0	5.8 $\pm 0.3$	4.3	5.5 max.	1.8	0.65 $\pm 0.1$	1.0	$0.35^{+0.15}_{-0.20}$
C	5.0	5.8 $\pm 0.3$	5.3	6.5 max.	2.2	0.65 $\pm 0.1$	1.5	$0.35^{+0.15}_{-0.20}$
D	6.3	5.8 $\pm 0.3$	6.6	7.8 max.	2.6	0.65 $\pm 0.1$	1.8	$0.35^{+0.15}_{-0.20}$
D8	6.3	7.7 $\pm 0.3$	6.6	7.8 max.	2.6	0.65 $\pm 0.1$	1.8	$0.35^{+0.15}_{-0.20}$
E	8.0	6.2 $\pm 0.3$	8.3	9.5 max.	3.4	0.65 $\pm 0.1$	2.2	$0.35^{+0.15}_{-0.20}$
F	8.0	10.2 $\pm 0.3$	8.3	10.0 max.	3.4	0.90 $\pm 0.2$	3.1	$0.70\pm 0.20$
G	10.0	10.2 $\pm 0.3$	10.3	12.0 max.	3.5	0.90 $\pm 0.2$	4.6	$0.70\pm 0.20$

Design and specifications are each subject to change without notice. Ask factory for the current technical specifications before purchase and/or use.  
Should a safety concern arise regarding this product, please be sure to contact us immediately.

01 Feb. 2013

## ■ High temperature Lead-Free reflow

Endurance : 105 °C 2000 h

W.V. (V)	Cap. (±20 %) (μF)	Case size			Specification			Part No. (RoHS:compliant)	Reflow	Min. Packaging Q'ty (pcs)
		Dia. (mm)	Length (mm)	*Size Code	Ripple Current (100 kHz) (+105 °C) (mA r.m.s.)	Impedance (100 kHz) (+20 °C) (Ω)	tan δ (120 Hz) (+20 °C)			
6.3	22	4	5.8	B	90	1.35	0.26	EEEFK0J220AR	(5)	2000
	47	4	5.8	(B)	90	1.35	0.26	EEEFKJ470UAR	(5)	2000
	5	5.8	C		160	0.70	0.26	EEEFK0J470AR	(5)	1000
	100	5	5.8	(C)	160	0.70	0.26	EEEFKJ101UAR	(5)	1000
	6.3	5.8	D		240	0.36	0.26	EEEFK0J101AP	(5)	1000
	220	6.3	5.8	D	240	0.36	0.26	EEEFK0J221AP	(5)	1000
	330	6.3	7.7	D8	280	0.34	0.26	EEEFKJ331XAP	(5)	900
	8	6.2	E		300	0.26	0.26	EEEFK0J331AP	(6)	1000
	470	8	10.2	F	600	0.16	0.26	EEEFK0J471AP	(6)	500
	1000	8	10.2	F	600	0.16	0.26	EEEFK0J102AP	(6)	500
10	1500	10	10.2	G	850	0.08	0.26	EEEFK0J152AP	(6)	500
	22	4	5.8	B	90	1.35	0.19	EEEFK1A220AR	(5)	2000
	33	4	5.8	(B)	90	1.35	0.19	EEEFKA330UAR	(5)	2000
	5	5.8	C		160	0.70	0.19	EEEFK1A330AR	(5)	1000
	150	6.3	5.8	D	240	0.36	0.19	EEEFK1A151AP	(5)	1000
	220	6.3	7.7	D8	280	0.34	0.19	EEEFKA221XAP	(5)	900
	8	6.2	E		300	0.26	0.19	EEEFK1A221AP	(6)	1000
	330	8	10.2	F	600	0.16	0.19	EEEFK1A331AP	(6)	500
	470	8	10.2	F	600	0.16	0.19	EEEFK1A471AP	(6)	500
	680	8	10.2	F	600	0.16	0.19	EEEFK1A681AP	(6)	500
16	1000	10	10.2	G	850	0.08	0.19	EEEFK1A102AP	(6)	500
	10	4	5.8	B	90	1.35	0.16	EEEFK1C100AR	(5)	2000
	22	4	5.8	(B)	90	1.35	0.16	EEEFKC220UAR	(5)	2000
	5	5.8	C		160	0.70	0.16	EEEFK1C220AR	(5)	1000
	47	5	5.8	(C)	160	0.70	0.16	EEEFKC470UAR	(5)	1000
	6.3	6.3	5.8	D	240	0.36	0.16	EEEFK1C470AP	(5)	1000
	68	6.3	5.8	D	240	0.36	0.16	EEEFK1C680AP	(5)	1000
	100	6.3	5.8	D	240	0.36	0.16	EEEFK1C101AP	(5)	1000
	150	6.3	7.7	D8	280	0.34	0.16	EEEFKC151XAP	(5)	900
	220	6.3	7.7	D8	280	0.34	0.16	EEEFKC221XAP	(5)	900
25	8	6.2	E		300	0.26	0.16	EEEFK1C221AP	(6)	1000
	330	8	10.2	F	600	0.16	0.16	EEEFK1C331AP	(6)	500
	470	8	10.2	F	600	0.16	0.16	EEEFK1C471AP	(6)	500
	680	10	10.2	G	850	0.08	0.16	EEEFK1C681AP	(6)	500
	10	4	5.8	B	90	1.35	0.14	EEEFK1E100AR	(5)	2000
	22	5	5.8	C	160	0.70	0.14	EEEFK1E220AR	(5)	1000
	33	5	5.8	(C)	160	0.70	0.14	EEEFKE330UAR	(5)	1000
	6.3	6.3	5.8	D	240	0.36	0.14	EEEFK1E330AP	(5)	1000
	47	6.3	5.8	D	240	0.36	0.14	EEEFK1E470AP	(5)	1000
	68	6.3	5.8	D	240	0.36	0.14	EEEFK1E680AP	(5)	1000
35	100	6.3	7.7	D8	280	0.34	0.14	EEEFKE101XAP	(5)	900
	8	6.2	E		300	0.26	0.14	EEEFK1E101AP	(6)	1000
	150	8	10.2	F	600	0.16	0.14	EEEFK1E151AP	(6)	500
	220	8	10.2	F	600	0.16	0.14	EEEFK1E221AP	(6)	500
	330	8	10.2	F	600	0.16	0.14	EEEFK1E331AP	(6)	500
	470	10	10.2	G	850	0.08	0.14	EEEFK1E471AP	(6)	500
	4.7	4	5.8	B	90	1.35	0.12	EEEFK1V4R7AR	(5)	2000
	10	4	5.8	(B)	90	1.35	0.12	EEEFKV100UAR	(5)	2000
	5	5.8	C		160	0.70	0.12	EEEFK1V100AR	(5)	1000
	22	5	5.8	C	160	0.70	0.12	EEEFK1V220AR	(5)	1000
35	33	6.3	5.8	D	240	0.36	0.12	EEEFK1V330AP	(5)	1000
	47	6.3	5.8	D	240	0.36	0.12	EEEFK1V470AP	(5)	1000
	68	6.3	7.7	D8	280	0.34	0.12	EEEFKV680XAP	(5)	900
	6.3	6.3	7.7	D8	280	0.34	0.12	EEEFKV101XAP	(5)	900
	100	8	10.2	F	600	0.16	0.12	EEEFK1V101AP	(6)	500
	150	8	10.2	F	600	0.16	0.12	EEEFK1V151AP	(6)	500
	220	8	10.2	F	600	0.16	0.12	EEEFK1V221AP	(6)	500
330	10	10.2	G		850	0.08	0.12	EEEFK1V331AP	(6)	500
	10	10.2	G		850	0.08	0.12	EEEFK1V331AP	(6)	500

\*Size code( ):Miniaturization product

If Part number exceeds 12 digits, voltage code is abbreviated as follows; 0J→J, 1A→A, 1C→C, 1E→E, 1V→V

· Please refer to the page of "Reflow Profile" and "The Taping Dimensions".

· When requesting vibration-proof product, please put the last "V" instead to "P"



Компания «ЭлектроПласт» предлагает заключение долгосрочных отношений при поставках импортных электронных компонентов на взаимовыгодных условиях!

#### Наши преимущества:

- Оперативные поставки широкого спектра электронных компонентов отечественного и импортного производства напрямую от производителей и с крупнейших мировых складов;
- Поставка более 17-ти миллионов наименований электронных компонентов;
- Поставка сложных, дефицитных, либо снятых с производства позиций;
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- Подбор аналогов;
- Консультации по применению компонента;
- Поставка образцов и прототипов;
- Техническая поддержка проекта;
- Защита от снятия компонента с производства.



#### Как с нами связаться

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