

## Surface Mount Type

Series: **FKS** Type: **V**

High temperature Lead-Free reflow



### ■ Features

- Endurance: 2000 h at 105 °C
- 1 size smaller than series FK
- Vibration-proof product is available upon request. ( $\phi$  8 mm and larger)
- AEC-Q200 qualified\*
- RoHS directive compliant

### ■ Specifications

Category Temp. Range	-55 °C to +105 °C							
Rated W.V. Range	6.3 V.DC to 50 V.DC							
Nominal Cap. Range	39 $\mu$ F to 1800 $\mu$ 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 Standard Products list							
Characteristics at Low Temperature	W.V.(V)	6.3	10	16	25	35	50	(Impedance ratio at 120Hz)
	Z(-25 °C)/Z(+20 °C)	2	2	2	2	2	2	
	Z(-40 °C)/Z(+20 °C)	3	3	3	3	3	3	
	Z(-55 °C)/Z(+20 °C)	4	4	4	3	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 % 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, capacitors 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

Capacitance ( $\mu$ F)	Frequency (Hz)			
	120	1k	10k	100k to
39 to 1800	0.65	0.85	0.95	1.00

### ■ Marking

Example: 6.3 V.DC / 270  $\mu$ F Marking color: BLACK

Negative polarity marking (-)

Capacitance ( $\mu$ F)

Series identification

Rated voltage mark

Lot number

j	6.3 V.DC	E	25 V.DC
A	10 V.DC	V	35 V.DC
C	16 V.DC	H	50 V.DC

### ■ Dimensions in mm (not to scale)

Unit: mm

Size code	D	L	A, B	H	I	W	P	K
D	6.3	5.8 $\pm$ 0.3	6.6	7.8 max.	2.6	0.65 $\pm$ 0.1	1.8	0.35 $\begin{smallmatrix} +0.15 \\ -0.20 \end{smallmatrix}$
D8	6.3	7.7 $\pm$ 0.3	6.6	7.8 max.	2.6	0.65 $\pm$ 0.1	1.8	0.35 $\begin{smallmatrix} +0.15 \\ -0.20 \end{smallmatrix}$
F	8.0	10.2 $\pm$ 0.3	8.3	10.0 max.	3.4	0.90 $\pm$ 0.2	3.1	0.70 $\pm$ 0.2
G	10.0	10.2 $\pm$ 0.3	10.3	12.0 max.	3.5	0.90 $\pm$ 0.2	4.6	0.70 $\pm$ 0.2

\* This product qualify for AEC-Q200, but it has some deviations.

## Standard Products

Endurance : 105 °C 2000 h

Rated voltage (V.DC)	Capacitance (±20 %) (μF)	Case size			Specification			Part No. (RoHS: compliant)	Reflow	Min. Packaging Q't	
		Dia (mm)	Length (mm)	Size code	Ripple current (100 kHz) (+105 °C) (mA r.m.s.)	ESR (100 kHz) (+20 °C) (Ω)	tan δ (120 Hz) (+20 °C)			Taping (pcs)	
6.3	270	6.3	5.8	D	240	0.36	0.26	EEEFK0J271SP	(5)	1000	
	470	6.3	7.7	D8	280	0.34	0.26	EEEFKJ471XSP	(5)	900	
	1800	10	10.2	G	850	0.08	0.26	EEEFK0J182SP	(6)	500	
10	220	6.3	5.8	D	240	0.36	0.19	EEEFK1A221SP	(5)	1000	
	330	6.3	7.7	D8	280	0.34	0.19	EEEFKA331XSP	(5)	900	
	820	8	10.2	F	600	0.16	0.19	EEEFK1A821SP	(6)	500	
	1200	10	10.2	G	850	0.08	0.19	EEEFK1A122SP	(6)	500	
16	150	6.3	5.8	D	240	0.36	0.16	EEEFK1C151SP	(5)	1000	
	270	6.3	7.7	D8	280	0.34	0.16	EEEFKC271XSP	(5)	900	
	560	8	10.2	F	600	0.16	0.16	EEEFK1C561SP	(6)	500	
	1000	10	10.2	G	850	0.08	0.16	EEEFK1C102SP	(6)	500	
25	100	6.3	5.8	D	240	0.36	0.14	EEEFK1E101SP	(5)	1000	
	150	6.3	7.7	D8	280	0.34	0.14	EEEFKE151XSP	(5)	900	
	180	6.3	7.7	D8	280	0.34	0.14	EEEFKE181XSP	(5)	900	
	390	8	10.2	F	600	0.16	0.14	EEEFK1E391SP	(6)	500	
	680	10	10.2	G	850	0.08	0.14	EEEFK1E681SP	(6)	500	
35	68	6.3	5.8	D	240	0.36	0.12	EEEFK1V680SP	(5)	1000	
	82	6.3	5.8	D	240	0.36	0.12	EEEFK1V820SP	(5)	1000	
	120	6.3	7.7	D8	280	0.34	0.12	EEEFKV121XSP	(5)	900	
	270	8	10.2	F	600	0.16	0.12	EEEFK1V271SP	(6)	500	
	470	10	10.2	G	850	0.08	0.12	EEEFK1V471SP	(6)	500	
50	39	6.3	5.8	D	165	0.88	0.10	EEEFK1H390SP	(5)	1000	
	82	6.3	7.7	D8	195	0.68	0.10	EEEFKH820XSP	(5)	900	
	180	8	10.2	F	350	0.34	0.10	EEEFK1H181SP	(6)	500	
	270	10	10.2	G	670	0.18	0.10	EEEFK1H271SP	(6)	500	

- 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"