

KVF Series

RoHS
Compliant

AEC-
Q200

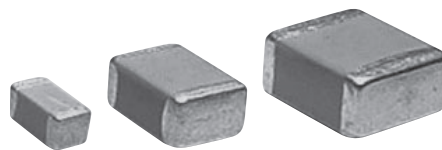
Temperature cycle : 1000 cycles

◆FEATURES

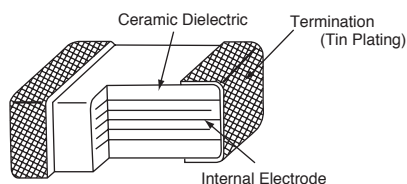
1. Temperature range : -55 to +150°C
2. Temperature characteristics : X8L
3. Excellent noise absorption.
4. Automotive grade (AEC-Q200)

◆APPLICATIONS

1. Noise filter for automotive equipment (ECU etc.)
2. Equipment used in a high temperature environment



◆CONSTRUCTION



◆RATINGS

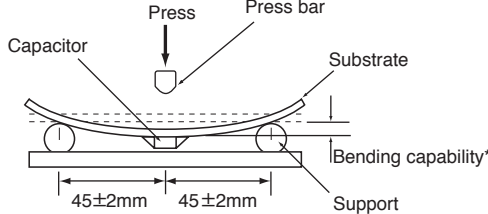
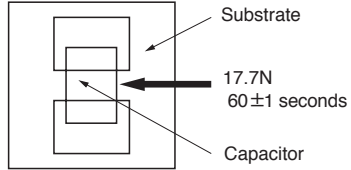
1. Category Temperature Range	-55~+150°C
2. Rated Voltage Range	25, 50, 100 Vdc
3. Rated Capacitance Range	0.033~15μF
4. Rated Capacitance Tolerance	M(±20%)
5. Temperature Characteristics	X8L
6. Rated Ripple Current	See No.5 on the following table

◆SPECIFICATIONS

No.	Items	Specification	Test Condition												
1	Withstand Voltage	No abnormality.	250% of rated voltage shall be applied for 5 seconds. (Only 250Vdc product : 475V)												
2	Insulation Resistance	100/CR(MΩ) or 4000(MΩ) whichever is less.	Rated voltage shall be applied for 60±5 seconds at temperature 25±2℃.												
3	Rated Capacitance	Within specified tolerance.	<table><tr><td></td><td>CR≤10μF</td><td>CR>10μF</td></tr><tr><td>Temperature</td><td colspan="2">25± 2℃</td></tr><tr><td>Frequency</td><td>1±0.1kHz</td><td>120±12Hz</td></tr><tr><td>Voltage</td><td>1±0.2Vrms</td><td>0.5±0.2Vrms</td></tr></table>		CR≤10μF	CR>10μF	Temperature	25± 2℃		Frequency	1±0.1kHz	120±12Hz	Voltage	1±0.2Vrms	0.5±0.2Vrms
	CR≤10μF	CR>10μF													
Temperature	25± 2℃														
Frequency	1±0.1kHz	120±12Hz													
Voltage	1±0.2Vrms	0.5±0.2Vrms													
4	Dissipation Factor	5.0% maximum.													
5	Rated Ripple Current	<table><tr><td>Size code</td><td>31</td><td>32</td><td>43</td><td>55</td></tr><tr><td>Arms</td><td>0.3</td><td>0.5</td><td>1.0</td><td>2.0</td></tr></table>	Size code	31	32	43	55	Arms	0.3	0.5	1.0	2.0	10kHz~1MHz (sine curve) Ripple voltage Vp shall be less than the rated voltage. The surface temperature MLCC must not exceed the maximum category temperature when the ripple current is applied.		
Size code	31	32	43	55											
Arms	0.3	0.5	1.0	2.0											

As customer requirement, Chemi-Con has submits the test results according to AEC-Q200 for Multilayer ceramic capacitors. Please contact us for more information.

◆SPECIFICATIONS

No.	Items	Specification	Test Condition															
6	High Temperature Exposure (Storage)	Appearance : No abnormality. $\Delta C/C : \pm 20\%$ D.F. : 10% maximum I.R. : 50/ C_R (M Ω) or 1000(M Ω) whichever is less.	Temperature : Max. category temperature $\pm 3^{\circ}\text{C}$ Time : 1000 $\pm$ ⁴⁸ ₀ hours															
7	Temperature Cycle	Appearance : No visible damage. $\Delta C/C : \pm 15\%$ D.F. : To meet the initial specification. I.R. : To meet the initial specification.	<table><tr><th>Step</th><th>Temperature ($^{\circ}\text{C}$)</th><th>(min.)</th></tr><tr><td>1</td><td>Min.Category temperature± 3</td><td>30 $\pm$ 3</td></tr><tr><td>2</td><td>Room temperature</td><td>3 max.</td></tr><tr><td>3</td><td>Max. Category temperature± 3</td><td>30 $\pm$ 3</td></tr><tr><td>4</td><td>Room temperature</td><td>3 max.</td></tr></table> (Epoxy resin PCB t=1.6mm) For 1000 cycles	Step	Temperature ($^{\circ}\text{C}$)	(min.)	1	Min.Category temperature ± 3	30 $\pm$ 3	2	Room temperature	3 max.	3	Max. Category temperature ± 3	30 $\pm$ 3	4	Room temperature	3 max.
Step	Temperature ($^{\circ}\text{C}$)	(min.)																
1	Min.Category temperature ± 3	30 $\pm$ 3																
2	Room temperature	3 max.																
3	Max. Category temperature ± 3	30 $\pm$ 3																
4	Room temperature	3 max.																
8	Biased Humidity	Appearance : No abnormality. $\Delta C/C : \pm 20\%$ D.F. : 10% maximum I.R. : 25/ C_R (M Ω) or 1000(M Ω) whichever is less.	Temperature : 85 $^{\circ}\text{C} \pm 3^{\circ}\text{C}$ Humidity : 80 ~ 85%RH Voltage : Rated voltage Time : 1000 $\pm$ ⁴⁸ ₀ hours															
9	Operational Life	Appearance : No abnormality. $\Delta C/C : \pm 20\%$ D.F. : 10% maximum I.R. : 50/ C_R (M Ω) or 1000(M Ω) whichever is less.	Temperature : Max. category temperature $\pm 3^{\circ}\text{C}$ Voltage : Rated voltage Time : 1000 $\pm$ ⁴⁸ ₀ hours															
10	Mechanical Shock	Appearance : No abnormality. $\Delta C/C$: To meet the initial specification. D.F. : To meet the initial specification.	MIL-STD-202 Method213 Condition F Peak value : 1,500 G Normal duration : 0.5 ms Velocity change : 15.4 ft/sec (4.7m/s) Direction and time : 3 times each in X,Y, Z axis. Total 18 times															
11	Resistance to Soldering Heat	Appearance : No visible damage. $\Delta C/C : \pm 15\%$ D.F. : To meet the initial specification. I.R. : To meet the initial specification.	Preheating temperature : 150 $\pm$ 10 $^{\circ}\text{C}$ Preheating time : 1 to 2 minute Solder temp. : 260 $\pm$ 5 $^{\circ}\text{C}$ Dipping Time : 10 $\pm$ 1s															
12	ESD	Appearance : No abnormality. $\Delta C/C$: To meet the initial specification. D.F. : To meet the initial specification. I.R. : To meet the initial specification.	AEC-Q200-002 Connection : Between terminals Direct Contact : 8kV (150pF 2000 Ω) Times : $\pm$ 1time															
13	Solderability	Min. 75% of surface of the termination shall be covered with new solder.	<table><tr><td>Solder</td><td>Pb Free</td></tr><tr><td>Solder Temperature</td><td>245 $\pm$ 5$^{\circ}\text{C}$</td></tr><tr><td>Dipping Time</td><td>2 $\pm$ 0.5s</td></tr></table>	Solder	Pb Free	Solder Temperature	245 $\pm$ 5 $^{\circ}\text{C}$	Dipping Time	2 $\pm$ 0.5s									
Solder	Pb Free																	
Solder Temperature	245 $\pm$ 5 $^{\circ}\text{C}$																	
Dipping Time	2 $\pm$ 0.5s																	
14	Board Flex	Appearance : No visible damage. $\Delta C/C : \pm 15\%$	The substrate shall be bend at rate of 1mm/s for 5 seconds.  * Bending capability : 1mm or 2mm															
15	Terminal Strength (SMD)	No visible damage.																

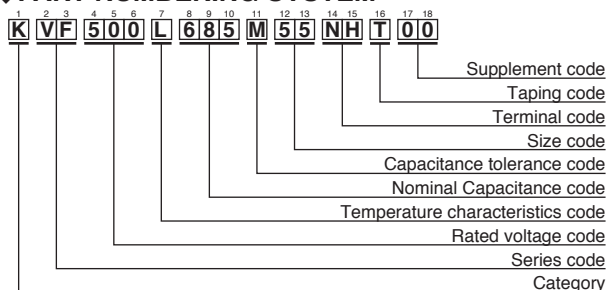
* C_R : Rated Capacitance(μF)

◆STANDARD RATINGS

Rated voltage (Vdc)	Rated Capacitance (μF)	Dimensions(mm)				Maximum ripple current (Arms)	Part Number	Taping Quantity per reel (pcs. / reel)
		L	W	T max.	a			
25	0.33	3.2±0.3	1.6±0.2	1.8	0.7±0.2	0.3	KVF250L334M31NLT00	3,000
	0.47						KVF250L474M31NLT00	3,000
	0.68						KVF250L684M31NLT00	3,000
	1.0						KVF250L105M31NLT00	3,000
	1.5	3.2±0.4	2.5±0.3	2.6	0.7±0.2	0.5	KVF250L155M32NHT00	1,600
	2.2						KVF250L225M32NHT00	1,600
	3.3						KVF250L335M32NHT00	1,600
	4.7	4.5±0.4	3.2±0.4	2.8	0.7±0.2	1.0	KVF250L475M43NHT00	800
	6.8						KVF250L685M43NHT00	800
	10	5.7±0.4	5.0±0.4	2.8	1.0±0.4	2.0	KVF250L106M55NHT00	800
15	KVF250L156M55NHT00						800	
50	0.1	3.2±0.3	1.6±0.2	1.8	0.7±0.2	0.3	KVF500L104M31NLT00	3,000
	0.15						KVF500L154M31NLT00	3,000
	0.22						KVF500L224M31NLT00	3,000
	0.33						KVF500L334M31NLT00	3,000
	0.47						KVF500L474M31NLT00	3,000
	0.68	3.2±0.4	2.5±0.3	2.6	0.7±0.2	0.5	KVF500L684M32NLT00	1,600
	1.0						KVF500L105M32NHT00	1,600
	1.5	4.5±0.4	3.2±0.4	2.8	0.7±0.2	1.0	KVF500L155M43NHT00	800
	2.2						KVF500L225M43NHT00	800
	3.3	5.7±0.4	5.0±0.4	2.8	1.0±0.4	2.0	KVF500L335M55NLT00	800
	4.7			KVF500L475M55NHT00			800	
	6.8			KVF500L685M55NHT00			800	
100	0.033	3.2±0.3	1.6±0.2	1.8	0.7±0.2	0.3	KVF101L333M31NLT00	3,000
	0.047						KVF101L473M31NLT00	3,000
	0.068						KVF101L683M31NLT00	3,000
	0.1						KVF101L104M31NLT00	3,000
	0.15	3.2±0.4	2.5±0.3	2.6	0.7±0.2	0.5	KVF101L154M32NLT00	1,600
	0.22						KVF101L224M32NLT00	1,600
	0.33						KVF101L334M32NLT00	1,600
	0.47	4.5±0.4	3.2±0.4	2.8	0.7±0.2	1.0	KVF101L474M43NLT00	800
	0.68						KVF101L684M43NLT00	800
	1.0	5.7±0.4	5.0±0.4	2.8	1.0±0.4	2.0	KVF101L105M55NLT00	800
	1.5						KVF101L155M55NLT00	800

※ Please consult with us when you consider the rating other than a standard table.

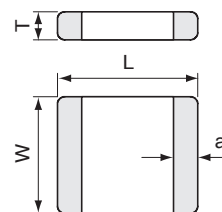
◆PART NUMBERING SYSTEM



Size Code

Size Code	Code	
	JIS	EIA
31	3216	1206
32	3225	1210
43	4532	1812
55	5750	2220
76	7563	3025

◆DIMENSIONS



Please refer to "Part Numbering System" of the beginning of a catalog for the details.