

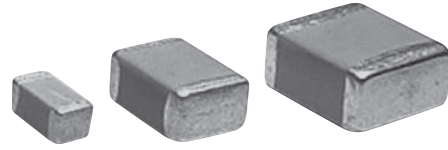
## KVF Series



Temperature cycle : 1000 cycles

### ◆FEATURES

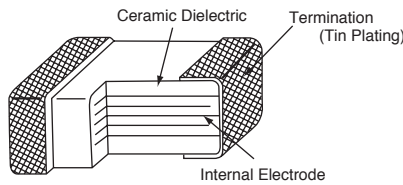
1. Temperature range : -55 to +150°C
2. Temperature characteristics : X8L
3. Excellent noise absorption.
4. Automotive grade (AEC-Q200)



### ◆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%), K(±10%)
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.												
2	Insulation Resistance	100/C <sub>R</sub> (MΩ) or 4000(MΩ) whichever is less.	Rated voltage shall be applied for 60±5 seconds at temperature 25±2°C.												
3	Rated Capacitance	Within specified tolerance.	<table border="1"> <tr> <td></td> <td>C<sub>R</sub>≤10μF</td> <td>C<sub>R</sub>&gt;10μF</td> </tr> <tr> <td>Temperature</td> <td colspan="2">25±2°C</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>		C <sub>R</sub> ≤10μF	C <sub>R</sub> >10μF	Temperature	25±2°C		Frequency	1±0.1kHz	120±12Hz	Voltage	1±0.2Vrms	0.5±0.2Vrms
	C <sub>R</sub> ≤10μF	C <sub>R</sub> >10μF													
Temperature	25±2°C														
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 border="1"> <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 V <sub>p</sub> 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. ΔC/C : ±20% D.F. : 10% maximum I.R. : 50/C <sub>R</sub> (MΩ) or 1000(MΩ) whichever is less.	Temperature : Max. category temperature ±3°C Time : 1000 ± <sup>48</sup> <sub>0</sub> hours															
7	Temperature Cycle	Appearance : No visible damage. ΔC/C : ±15% D.F. : To meet the initial specification. I.R. : To meet the initial specification.	<table border="1"> <thead> <tr> <th>Step</th> <th>Temperature (°C)</th> <th>(min.)</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>Min. Category temperature ±3</td> <td>30 ±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 ±3</td> </tr> <tr> <td>4</td> <td>Room temperature</td> <td>3 max.</td> </tr> </tbody> </table> <p>(Epoxy resin PCB t=1.6mm) For 1000 cycles</p>	Step	Temperature (°C)	(min.)	1	Min. Category temperature ±3	30 ±3	2	Room temperature	3 max.	3	Max. Category temperature ±3	30 ±3	4	Room temperature	3 max.
Step	Temperature (°C)	(min.)																
1	Min. Category temperature ±3	30 ±3																
2	Room temperature	3 max.																
3	Max. Category temperature ±3	30 ±3																
4	Room temperature	3 max.																
8	Biased Humidity	Appearance : No abnormality. ΔC/C : ±20% D.F. : 10% maximum I.R. : 25/C <sub>R</sub> (MΩ) or 1000(MΩ) whichever is less.	Temperature : 85°C ±3°C Humidity : 80 ~ 85%RH Voltage : Rated voltage Time : 1000 ± <sup>48</sup> <sub>0</sub> hours															
9	Operational Life	Appearance : No abnormality. ΔC/C : ±20% D.F. : 10% maximum I.R. : 50/C <sub>R</sub> (MΩ) or 1000(MΩ) whichever is less.	Temperature : Max. category temperature ±3°C Voltage : Rated voltage Time : 1000 ± <sup>48</sup> <sub>0</sub> hours															
10	Mechanical Shock	Appearance : No abnormality. ΔC/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. ΔC/C : ±15% D.F. : To meet the initial specification. I.R. : To meet the initial specification.	Preheating temperature : 150 ±10°C Preheating time : 1 to 2 minute Solder temp. : 260 ±5°C Dipping Time : 10 ±1s															
12	ESD	Appearance : No abnormality. ΔC/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 2000Ω) Times : ±1time															
13	Solderability	Min. 75% of surface of the termination shall be covered with new solder.	<table border="1"> <thead> <tr> <th>Solder</th> <th>Pb Free</th> </tr> </thead> <tbody> <tr> <td>Solder Temperature</td> <td>245 ±5°C</td> </tr> <tr> <td>Dipping Time</td> <td>2 ±0.5s</td> </tr> </tbody> </table>	Solder	Pb Free	Solder Temperature	245 ±5°C	Dipping Time	2 ±0.5s									
Solder	Pb Free																	
Solder Temperature	245 ±5°C																	
Dipping Time	2 ±0.5s																	
14	Board Flex	Appearance : No visible damage. ΔC/C : ±15%	<p>The substrate shall be bend at rate of 1mm/s for 5 seconds.</p> <p>* Bending capability : 1mm or 2mm</p>															
15	Terminal Strength (SMD)	No visible damage.																

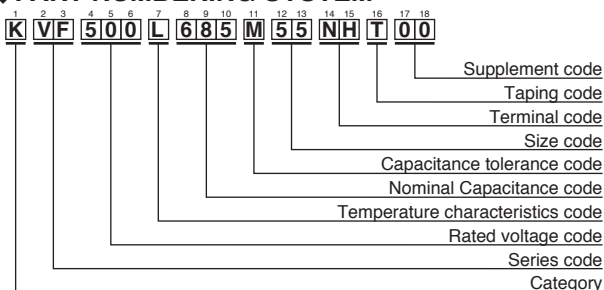
\*CR : Rated Capacitance(μF)

### ◆STANDARD RATINGS

Rated voltage (Vdc)	Rated Capacitance (μF)	Electrostatic Capacitance Temperature Characteristics	Case Code		Dimensions(mm)				Maximum ripple current (Arms)	Part Number	Taping Quantity per reel (pcs./ reel)
			inch / mm		L	W	T max.	a			
25	0.33	X8L	1206 / 3216		3.2±0.3	1.6±0.2	1.8	0.7±0.2	0.3	KVF250L334□31NLT00	3,000
	0.47	X8L	1206 / 3216		3.2±0.3	1.6±0.2	1.8	0.7±0.2	0.3	KVF250L474□31NLT00	3,000
	0.68	X8L	1206 / 3216		3.2±0.3	1.6±0.2	1.8	0.7±0.2	0.3	KVF250L684□31NLT00	3,000
	1.0	X8L	1206 / 3216		3.2±0.3	1.6±0.2	1.8	0.7±0.2	0.3	KVF250L105□31NLT00	3,000
	1.5	X8L	1210 / 3225		3.2±0.4	2.5±0.3	2.6	0.7±0.2	0.5	KVF250L155□32NHT00	1,600
	2.2	X8L	1210 / 3225		3.2±0.4	2.5±0.3	2.6	0.7±0.2	0.5	KVF250L225□32NHT00	1,600
	3.3	X8L	1210 / 3225		3.2±0.4	2.5±0.3	2.6	0.7±0.2	0.5	KVF250L335□32NHT00	1,600
	4.7	X8L	1812 / 4535		4.5±0.4	3.2±0.4	2.8	0.7±0.2	1.0	KVF250L475□43NHT00	800
	6.8	X8L	1812 / 4535		4.5±0.4	3.2±0.4	2.8	0.7±0.2	1.0	KVF250L685□43NHT00	800
50	10	X8L	2220 / 5750		5.7±0.4	5.0±0.4	2.8	1.0±0.4	2.0	KVF250L106□55NHT00	800
	15	X8L	2220 / 5750		5.7±0.4	5.0±0.4	2.8	1.0±0.4	2.0	KVF250L156□55NHT00	800
	0.10	X8L	1206 / 3216		3.2±0.2	1.6±0.2	1.8	0.7±0.2	0.3	KVF500L104□31NLT00	3,000
	0.15	X8L	1206 / 3216		3.2±0.2	1.6±0.2	1.8	0.7±0.2	0.3	KVF500L154□31NLT00	3,000
	0.22	X8L	1206 / 3216		3.2±0.2	1.6±0.2	1.8	0.7±0.2	0.3	KVF500L224□31NLT00	3,000
	0.33	X8L	1206 / 3216		3.2±0.2	1.6±0.2	1.8	0.7±0.2	0.3	KVF500L334□31NLT00	3,000
	0.47	X8L	1206 / 3216		3.2±0.2	1.6±0.2	1.8	0.7±0.2	0.3	KVF500L474□31NLT00	3,000
	0.68	X8L	1210 / 3225		3.2±0.4	2.5±0.3	2.6	0.7±0.2	0.5	KVF500L684□32NLT00	1,600
	1.0	X8L	1210 / 3225		3.2±0.4	2.5±0.3	2.6	0.7±0.2	0.5	KVF500L105□32NHT00	1,600
100	1.5	X8L	1812 / 4532		4.5±0.4	3.2±0.4	2.8	0.7±0.2	1.0	KVF500L155□43NHT00	800
	2.2	X8L	1812 / 4532		4.5±0.4	3.2±0.4	2.8	0.7±0.2	1.0	KVF500L225□43NHT00	800
	3.3	X8L	2220 / 5750		5.7±0.4	5.0±0.4	2.8	1.0±0.4	2.0	KVF500L335□55NLT00	800
	4.7	X8L	2220 / 5750		5.7±0.4	5.0±0.4	2.8	1.0±0.4	2.0	KVF500L475□55NHT00	800
	6.8	X8L	2220 / 5750		5.7±0.4	5.0±0.4	2.8	1.0±0.4	2.0	KVF500L685□55NHT00	800
	0.033	X8L	1206 / 3216		3.2±0.2	1.6±0.2	1.8	0.7±0.2	0.3	KVF101L333□31NLT00	3,000
	0.047	X8L	1206 / 3216		3.2±0.2	1.6±0.2	1.8	0.7±0.2	0.3	KVF101L473□31NLT00	3,000
	0.068	X8L	1206 / 3216		3.2±0.2	1.6±0.2	1.8	0.7±0.2	0.3	KVF101L683□31NLT00	3,000
	0.1	X8L	1206 / 3216		3.2±0.2	1.6±0.2	1.8	0.7±0.2	0.3	KVF101L104□31NLT00	3,000
100	0.15	X8L	1210 / 3225		3.2±0.4	2.5±0.3	2.6	0.7±0.2	0.5	KVF101L154□32NLT00	1,600
	0.22	X8L	1210 / 3225		3.2±0.4	2.5±0.3	2.6	0.7±0.2	0.5	KVF101L224□32NLT00	1,600
	0.3	X8L	1210 / 3225		3.2±0.4	2.5±0.3	2.6	0.7±0.2	0.5	KVF101L334□32NLT00	1,600
	0.5	X8L	1812 / 4532		4.5±0.4	3.2±0.4	2.8	0.7±0.2	1.0	KVF101L104□43NLT00	800
	0.68	X8L	1812 / 4532		4.5±0.4	3.2±0.4	2.8	0.7±0.2	1.0	KVF101L684□43NLT00	800
	1.0	X8L	2220 / 5750		5.7±0.4	5.0±0.4	2.8	1.0±0.4	2.0	KVF101L105□55NLT00	800
	1.5	X8L	2220 / 5750		5.7±0.4	5.0±0.4	2.8	1.0±0.4	2.0	KVF101L155□55NLT00	800

※ The square (□) in part numbers is replaced by a capacitance tolerance code: 'K' when ±10%, or 'M' when ±20%  
 ※ Please consult with us when you consider the rating other than a standard table.

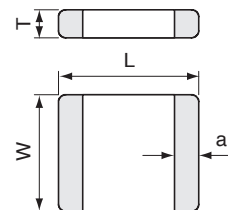
### ◆PART NUMBERING SYSTEM



### ◆DIMENSIONS

Size Code

Size Code	L × W (mm)
31	3.2 × 1.6
32	3.2 × 2.5
43	4.5 × 3.2
55	5.7 × 5.0
76	7.5 × 6.3



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