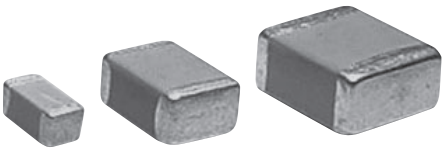
KVF Series

RoHS2 Compliant | AEC-Q200 | High temperature 150℃

◆FEATURES

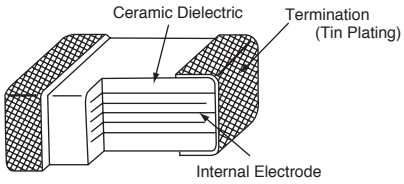
1. Temperature range : -55 to +150℃
2. Temperature characteristics : X8L
3. Exellent noise absorption.
4. Automotive grade (AEC-Q200)



◆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

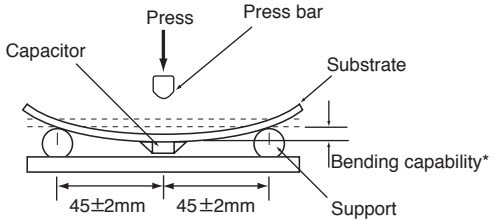
No.	Items	Specification	Test Condition
1	Withstand Voltage	No abnormality.	250% of rated voltage shall be applied for 5 seconds.
2	Insulation Resistance	100/CR(MΩ) or 4000(MΩ) whichever is less.	Rated voltage shall be applied for 60±5 seconds at temperature 25±2℃.
3	Rated Capacitance	Within specified tolerance.	See table below
4	Dissipation Factor	5.0% maximum.	
5	Rated Ripple Current	See table below	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.

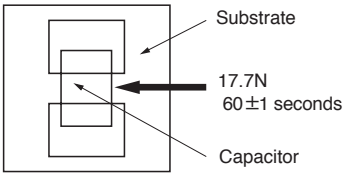
	CR≦10μF	CR>10μF
Temperature	25±2℃	
Frequency	1±0.1kHz	120±12Hz
Voltage	1±0.2Vrms	0.5±0.2Vrms

Size code	31	32	43	55
Arms	0.3	0.5	1.0	2.0

KVF Series

◆SPECIFICATIONS

<table>
<tr><th>No.</th><th>Items</th><th>Specification</th><th>Test Condition</th></tr>
<tr><td>6</td><td>High Temperature Exposure (Storage)</td><td>Appearance : No abnormality.
ΔC/C : ±20%
D.F. : 10% maximum
I.R. : 50/C_R(MΩ) or 1000(MΩ) whichever is less.</td><td>Temperature : Max. category temperature±3℃
Time : 1000 $^{+48}_{0}$ hours</td></tr>
<tr><td>7</td><td>Temperature Cycle</td><td>Appearance : No visible damage.
ΔC/C : ±15%
D.F. : To meet the initial specification.
I.R. : To meet the initial specification.</td><td><table><tr><th>Step</th><th>Temperature (℃)</th><th>(min.)</th></tr><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></table><Cycle>
100 cycles (Glass epoxy substrates 1.6t)</td></tr>
<tr><td>8</td><td>Biased Humidity</td><td>Appearance : No abnormality.
ΔC/C : ±20%
D.F. : 10% maximum
I.R. : 25/C_R(MΩ) or 1000(MΩ) whichever is less.</td><td>Temperature : 85℃±3℃
Humidity : 80 ～ 85%RH
Voltage : Rated voltage
Time : 1000 $^{+48}_{0}$ hours</td></tr>
<tr><td>9</td><td>Operational Life</td><td>Appearance : No abnormality.
ΔC/C : ±20%
D.F. : 10% maximum
I.R. : 50/C_R(MΩ) or 1000(MΩ) whichever is less.</td><td>Temperature : Max. category temperature±3℃
Voltage : Rated voltage
Time : 1000 $^{+48}_{0}$ hours</td></tr>
<tr><td>10</td><td>Mechanical Shock</td><td>Appearance : No abnormality.
ΔC/C : To meet the initial specification.
D.F. : To meet the initial specification.</td><td>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</td></tr>
<tr><td>11</td><td>Resistance to Soldering Heat</td><td>Appearance : No visible damage.
ΔC/C : ±15%
D.F. : To meet the initial specification.
I.R. : To meet the initial specification.</td><td>Preheating temperature : 150±10℃
Preheating time : 1 to 2 minute
Solder temp. : 260±5℃
Dipping Time : 10±1s</td></tr>
<tr><td>12</td><td>ESD</td><td>Appearance : No abnormality.
ΔC/C : To meet the initial specification.
D.F. : To meet the initial specification.
I.R. : To meet the initial specification.</td><td>AEC-Q200-002
Connection : Between terminals
Direct Contact : 8kV (150pF 2000Ω)
Times : ±1time</td></tr>
<tr><td>13</td><td>Solderability</td><td>Min. 75% of surface of the termination shall be covered with new solder.</td><td><table><tr><td>Solder</td><td>Pb Free</td></tr><tr><td>Solder Temperature</td><td>245 ±5℃</td></tr><tr><td>Dipping Time</td><td>2±0.5s</td></tr></table></td></tr>
<tr><td>14</td><td>Board Flex</td><td>Appearance : No visible damage.
ΔC/C : ±15%</td><td>The substrate shall be bend at rate of 1mm/s for 5 seconds.
 

∗ Bending capability : 1mm or 2mm</td></tr>
<tr><td>15</td><td>Terminal Strength (SMD)</td><td>No visible damage.</td><td> 
</td></tr>
</table>

*CR : Rated Capacitance(μF)

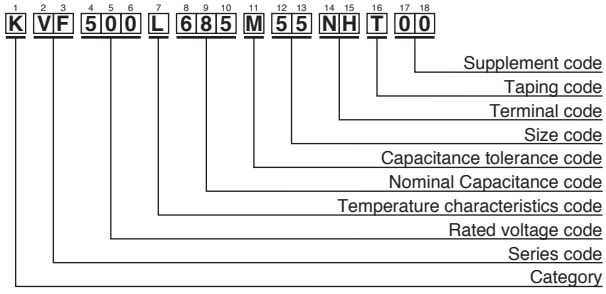
KVF Series

◆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
	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
50	0.10	X8L	1206 / 3216	3.2±0.3	1.6±0.2	1.8	0.7±0.2	0.3	KVF500L104□31NLT00	3,000
	0.15	X8L	1206 / 3216	3.2±0.3	1.6±0.2	1.8	0.7±0.2	0.3	KVF500L154□31NLT00	3,000
	0.22	X8L	1206 / 3216	3.2±0.3	1.6±0.2	1.8	0.7±0.2	0.3	KVF500L224□31NLT00	3,000
	0.33	X8L	1206 / 3216	3.2±0.3	1.6±0.2	1.8	0.7±0.2	0.3	KVF500L334□31NLT00	3,000
	0.47	X8L	1206 / 3216	3.2±0.3	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
	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
100	0.033	X8L	1206 / 3216	3.2±0.3	1.6±0.2	1.8	0.7±0.2	0.3	KVF101L333□31NLT00	3,000
	0.047	X8L	1206 / 3216	3.2±0.3	1.6±0.2	1.8	0.7±0.2	0.3	KVF101L473□31NLT00	3,000
	0.068	X8L	1206 / 3216	3.2±0.3	1.6±0.2	1.8	0.7±0.2	0.3	KVF101L683□31NLT00	3,000
	0.1	X8L	1206 / 3216	3.2±0.3	1.6±0.2	1.8	0.7±0.2	0.3	KVF101L104□31NLT00	3,000
	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
	0.33	X8L	1210 / 3225	3.2±0.4	2.5±0.3	2.6	0.7±0.2	0.5	KVF101L334□32NLT00	1,600
	0.47	X8L	1812 / 4532	4.5±0.4	3.2±0.4	2.8	0.7±0.2	1.0	KVF101L474□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.

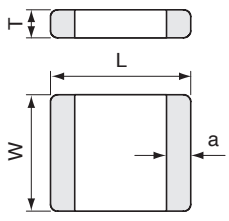
◆PART NUMBERING SYSTEM



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

◆DIMENSIONS



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

■ Always read "Notes on Use" before using the product in order to enable you to use the product correctly and prevent any faults and accidents from occurring.

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