

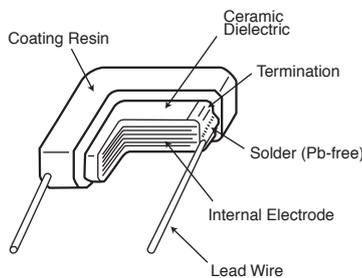
### ◆FEATURES

1. Temperature range : -55 to +150°C
2. Temperature characteristic : X8L
3. Small in size and wide capacitance range.  
Max. 15μF is available.
4. Epoxy resin(UL94 V-0)used for coating.
5. 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	0.1~15μF
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	Between Terminals	No abnormality.	250% of rated voltage shall be applied for 5 seconds. (Only 250Vdc products : 475V)	
		Terminals to Coating Resin			
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.		CR≤10μF
					CR>10μF
				Temperature	25±2°C
4	Dissipation Factor		5.0% maximum.	Frequency	1±0.1kHz      120±12Hz
				Voltage	1±0.2Vrms      0.5±0.2Vrms

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



# DIPPED RADIAL LEAD MULTILAYER CERAMIC CAPACITORS

**KVD** Series

## ◆ SPECIFICATIONS

No.	Items	Specification	Test Condition															
5	Rated Ripple Current	<table border="1"> <tr> <td>Size code</td> <td>32</td> <td>43</td> <td>55</td> </tr> <tr> <td>Arms</td> <td>0.3</td> <td>0.8</td> <td>1.0</td> </tr> </table>	Size code	32	43	55	Arms	0.3	0.8	1.0	10kHz to 1MHz (sine curve) Ripple voltage $V_p$ shall be less than the rated voltage. The surface temperature of MLCC must not exceed the maximum category temperature when the ripple current is applied.							
Size code	32	43	55															
Arms	0.3	0.8	1.0															
6	High Temperature Exposure(Storage)	Appearance : No structural damage such as cracks $\Delta C/C$ : $\pm 20\%$ D.F. : 10% maximum I.R. : $50/C_R(M\Omega)$ or $1000(M\Omega)$ whichever is less.	Temperature : Max. category temperature $\pm 3^\circ C$ Time : $1000 \pm 48$ 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 border="1"> <thead> <tr> <th>Step</th> <th>Temperature(<math>^\circ C</math>)</th> <th>(min)</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>Min Category temperature <math>\pm 3</math></td> <td><math>30 \pm 3</math></td> </tr> <tr> <td>2</td> <td>Room temperature</td> <td>3 max.</td> </tr> <tr> <td>3</td> <td>Max. Category temperature <math>\pm 3</math></td> <td><math>30 \pm 3</math></td> </tr> <tr> <td>4</td> <td>Room temperature</td> <td>3 max.</td> </tr> </tbody> </table> For 1000 cycles	Step	Temperature( $^\circ C$ )	(min)	1	Min Category temperature $\pm 3$	$30 \pm 3$	2	Room temperature	3 max.	3	Max. Category temperature $\pm 3$	$30 \pm 3$	4	Room temperature	3 max.
Step	Temperature( $^\circ C$ )	(min)																
1	Min Category temperature $\pm 3$	$30 \pm 3$																
2	Room temperature	3 max.																
3	Max. Category temperature $\pm 3$	$30 \pm 3$																
4	Room temperature	3 max.																
8	Biased Humidity	Appearance : No abnormality. $\Delta C/C$ : $\pm 20\%$ D.F. : 10% maximum I.R. : $25/C_R(M\Omega)$ or $1000(M\Omega)$ whichever is less.	Temperature : $85^\circ C \pm 3^\circ C$ Humidity : $80 \sim 85\%RH$ Voltage : Rated voltage Time : $1000 \pm 48$ hours															
9	Operational Life	Appearance : No structural damage such as cracks $\Delta C/C$ : $\pm 20\%$ D.F. : 10% maximum I.R. : $50/C_R(M\Omega)$ or $1000(M\Omega)$ whichever is less.	Temperature : Max. category temperature $\pm 3^\circ C$ Voltage : Rated voltage Time : $1000 \pm 48$ hours															
10	Terminal Strength (Leaded)	<table border="1"> <tr> <td>Tension</td> <td rowspan="2">No visible damage.</td> </tr> <tr> <td>Bending</td> </tr> </table>	Tension	No visible damage.	Bending	The force applied shall be : <table border="1"> <tr> <td>Lead <math>\phi</math> (mm)</td> <td>Tensile(N)</td> <td>(sec.)</td> </tr> <tr> <td>0.5 max.</td> <td>5</td> <td><math>10 \pm 1</math></td> </tr> </table> <table border="1"> <tr> <td>Lead <math>\phi</math> (mm)</td> <td>Bending(N)</td> <td>(kg)</td> </tr> <tr> <td>0.5 max.</td> <td>2.5</td> <td>0.25</td> </tr> </table> Time : 2times.	Lead $\phi$ (mm)	Tensile(N)	(sec.)	0.5 max.	5	$10 \pm 1$	Lead $\phi$ (mm)	Bending(N)	(kg)	0.5 max.	2.5	0.25
Tension	No visible damage.																	
Bending																		
Lead $\phi$ (mm)	Tensile(N)	(sec.)																
0.5 max.	5	$10 \pm 1$																
Lead $\phi$ (mm)	Bending(N)	(kg)																
0.5 max.	2.5	0.25																
11	Mechanical Shock	Appearance : No abnormality. $\Delta C/C$ : To meet the initial specification. D.F. : To meet the initial specification.	MIL-STD-202 Method 213 Condition C Peak value : 100G Normal duration : 6 ms Velocity change : 12.3 ft/sec(3.8m/s) Direction and time : 3 times each in X,Y, Z axis. Total 18 times															
12	Vibration	Appearance : No abnormality. $\Delta C/C$ : To meet the initial specification. D.F. : To meet the initial specification.	MIL-STD-202 Method 204 Test condition : 5G peak Amplitude : 1.5mm max. Frequency : 10-2000-10Hz(20 minute) Direction and time : 12 times each in X,Y, Z axis. Total 36 times															
13	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.	Solder temp. : $260 \pm 5^\circ C$ Dipping Time : $10 \pm 1s$ Depth : 1.5 to 2mm															
14	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 $\Omega$ ) Times : $\pm 1$ time															
15	Solderability	Min. 75% of surface of the termination shall be covered with new solder.	<table border="1"> <tr> <td>Solder</td> <td>Pb Free</td> </tr> <tr> <td>Solder Temperature</td> <td><math>245 \pm 5^\circ C</math></td> </tr> <tr> <td>Dipping Time</td> <td><math>2 \pm 0.5s</math></td> </tr> </table>	Solder	Pb Free	Solder Temperature	$245 \pm 5^\circ C$	Dipping Time	$2 \pm 0.5s$									
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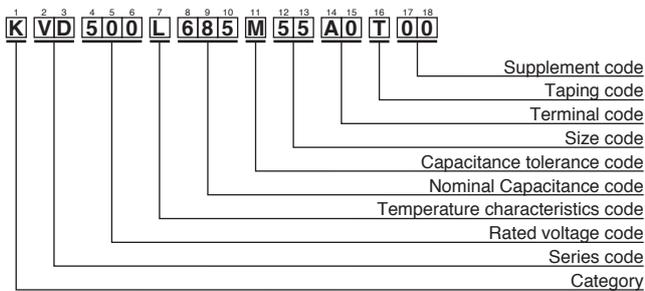
\*CR : Rated Capacitance( $\mu F$ )

◆ STANDARD RATINGS

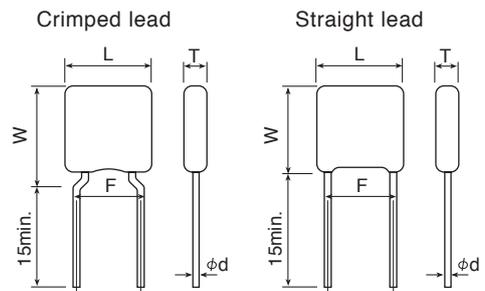
Rated voltage (Vdc)	Rated Capacitance (μF)	Electrostatic Capacitance Temperature Characteristics	Dimensions(mm)					Maximum ripple current (Arms)	Part Number	Taping Quantity per reel (pcs. / reel)
			L max.	W max.	T max.	F±0.8	φd±0.05			
25	1.0	X8L	5.0	6.0	3.5	5.0	0.5	0.3	KVD250L105□32A0T00	2,000
	1.5	X8L	5.0	6.0	3.5	5.0	0.5	0.3	KVD250L155□32A0T00	2,000
	2.2	X8L	5.0	6.0	3.5	5.0	0.5	0.3	KVD250L225□32A0T00	2,000
	3.3	X8L	5.0	6.0	3.5	5.0	0.5	0.3	KVD250L335□32A0T00	2,000
	4.7	X8L	6.5	6.5	4.0	5.0	0.5	0.8	KVD250L475□43A0T00	2,000
	6.8	X8L	6.5	6.5	4.0	5.0	0.5	0.8	KVD250L685□43A0T00	2,000
	10	X8L	7.5	9.0	4.5	5.0	0.5	1.0	KVD250L106□55A0T00	2,000
50	0.33	X8L	5.0	6.0	3.5	5.0	0.5	0.3	KVD500L334□32A0T00	2,000
	0.47	X8L	5.0	6.0	3.5	5.0	0.5	0.3	KVD500L474□32A0T00	2,000
	0.68	X8L	5.0	6.0	3.5	5.0	0.5	0.3	KVD500L684□32A0T00	2,000
	1.0	X8L	5.0	6.0	3.5	5.0	0.5	0.3	KVD500L105□32A0T00	2,000
	1.5	X8L	6.5	6.5	4.0	5.0	0.5	0.8	KVD500L155□43A0T00	2,000
	2.2	X8L	6.5	6.5	4.0	5.0	0.5	0.8	KVD500L225□43A0T00	2,000
	3.3	X8L	7.5	9.0	4.5	5.0	0.5	1.0	KVD500L335□55A0T00	2,000
	4.7	X8L	7.5	9.0	4.5	5.0	0.5	1.0	KVD500L475□55A0T00	2,000
100	0.10	X8L	5.0	6.0	3.5	5.0	0.5	0.3	KVD101L104□32A0T00	2,000
	0.15	X8L	5.0	6.0	3.5	5.0	0.5	0.3	KVD101L154□32A0T00	2,000
	0.22	X8L	5.0	6.0	3.5	5.0	0.5	0.3	KVD101L224□32A0T00	2,000
	0.33	X8L	5.0	6.0	3.5	5.0	0.5	0.3	KVD101L334□32A0T00	2,000
	0.47	X8L	6.5	6.5	4.0	5.0	0.5	0.8	KVD101L474□43A0T00	2,000
	0.68	X8L	6.5	6.5	4.0	5.0	0.5	0.8	KVD101L684□43A0T00	2,000
	1.0	X8L	7.5	9.0	4.5	5.0	0.5	1.0	KVD101L105□55A0T00	2,000
	1.5	X8L	7.5	9.0	4.5	5.0	0.5	1.0	KVD101L155□55A0T00	2,000

※ 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



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.
- Request the Product Specification on the product of NIPPON CHEMI-CON CORPORATION to refer to it as well as this brochure prior to the order of the products. Some specific notes on use of the ordered product may be described in the specifications.
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[Part Numbering System](#)

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[TAPING SPECIFICATION](#)

[Characteristics Data](#)

[Minimum Packaging Quantity](#)