

VUK Series

Features

- 12.5 ϕ ~ 18 ϕ , 125°C, 5,000 hours assured
- Chip type high temperature range, for +125°C use
- For automobile modules and other high temperature applications
- RoHS Compliance

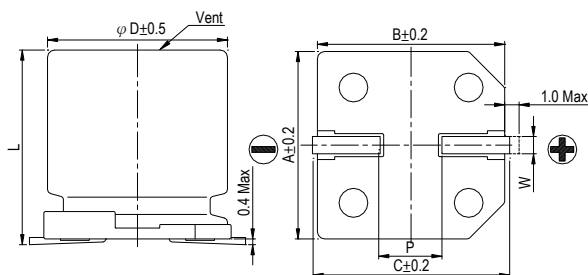


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Specifications

Items	Performance																													
Category Temperature Range	-40°C ~ +125°C																													
Capacitance Tolerance	±20% (at 120Hz, 20°C)																													
Leakage Current (at 20°C)	I = 0.03CV or 4 (μA) whichever is greater (after 1 minutes) Where, C = rated capacitance in μF V = rated DC working voltage in V																													
Tanδ (at 120Hz, 20°C)	<table><tr><td>Rated Voltage</td><td>10</td><td>16</td><td>25</td><td>35</td><td>50</td><td>63</td></tr><tr><td>Tanδ (max)</td><td>0.22</td><td>0.18</td><td>0.16</td><td>0.14</td><td>0.12</td><td>0.12</td></tr></table> When the capacitance exceeds 1,000μF, 0.02 shall be added every 1,000μF increase.							Rated Voltage	10	16	25	35	50	63	Tanδ (max)	0.22	0.18	0.16	0.14	0.12	0.12									
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Low Temperature Characteristics (at 120Hz)	Impedance ratio shall not exceed the values given in the table below. <table><tr><td colspan="2">Rated Voltage</td><td>10</td><td>16</td><td>25</td><td>35</td><td>50</td><td>63</td></tr><tr><td rowspan="2">Impedance Ratio</td><td>Z(-25°C)/Z(+20°C)</td><td>6</td><td>5</td><td>4</td><td>3</td><td>3</td><td>3</td></tr><tr><td>Z(-40°C)/Z(+20°C)</td><td>12</td><td>8</td><td>6</td><td>4</td><td>4</td><td>4</td></tr></table>							Rated Voltage		10	16	25	35	50	63	Impedance Ratio	Z(-25°C)/Z(+20°C)	6	5	4	3	3	3	Z(-40°C)/Z(+20°C)	12	8	6	4	4	4
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Endurance	<table><tr><td>Test Time</td><td>5,000 Hrs</td></tr><tr><td>Capacitance Change</td><td>Within ±30% of initial value</td></tr><tr><td>Tanδ</td><td>Less than 300% of specified value</td></tr><tr><td>Leakage Current</td><td>Within specified value</td></tr></table> * The above Specifications shall be satisfied when the capacitors are restored to 20°C after the rated voltage applied for 5,000 hours at 125°C.							Test Time	5,000 Hrs	Capacitance Change	Within ±30% of initial value	Tanδ	Less than 300% of specified value	Leakage Current	Within specified value															
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Ripple Current & Frequency Multipliers	<table><tr><td>Freq.(Hz)</td><td>50</td><td>120</td><td>1k</td><td>10k up</td></tr><tr><td>Cap.(μF)</td><td></td><td></td><td></td><td></td></tr><tr><td>Under 330</td><td>0.80</td><td>1.0</td><td>1.25</td><td>1.40</td></tr><tr><td>330 < C ≤ 4,700</td><td>0.85</td><td>1.0</td><td>1.20</td><td>1.30</td></tr></table>							Freq.(Hz)	50	120	1k	10k up	Cap.(μF)					Under 330	0.80	1.0	1.25	1.40	330 < C ≤ 4,700	0.85	1.0	1.20	1.30			
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Diagram of Dimensions

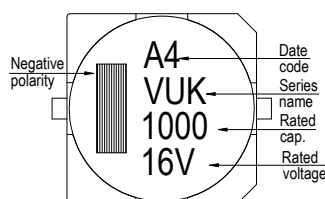


Lead Spacing and Diameter

Unit: mm

ϕD	L	A	B	C	W	P ± 0.2
12.5	13.5 ± 0.5	13.0	13.0	13.7	1.1 ~ 1.4	4.4
12.5	16 ± 0.5	13.0	13.0	13.7	1.1 ~ 1.4	4.4
16	16.5 ± 0.5	17.0	17.0	18.0	1.1 ~ 1.4	6.4
18	16.5 ± 0.5	19.0	19.0	20.0	1.1 ~ 1.4	6.4

Marking



Dimension & Permissible Ripple Current

Dimension: $\phi D \times L$ (mm)
Ripple Current: mA/rms at 120 Hz, 125°C

V. DC		10V (1A)		16V (1C)		25V (1E)		35V (1V)		50V (1H)		63V (1J)	
μF	Contents	$\phi D \times L$	mA	$\phi D \times L$	mA	$\phi D \times L$	mA	$\phi D \times L$	mA	$\phi D \times L$	mA	$\phi D \times L$	mA
68	680												
100	101									12.5×13.5	170	12.5×13.5	150
220	221							12.5×13.5	200	16×16.5	250	16×16.5	230
330	331			12.5×13.5	230	12.5×13.5	230	16×16.5	280	18×16.5	340	18×16.5	320
470	471	12.5×13.5	230	12.5×13.5	250	16×16.5	310	18×16.5	380	18×21.5	430	18×21.5	410
1,000	102	12.5×16	350	16×16.5	440	18×21.5	540						
1,500	152	12.5×16	350										
2,200	222	18×16.5	620	18×21.5	710								
3,300	332	18×21.5	770										

Part Numbering System

VUK series	330 μF	$\pm 20\%$	16V	Carrier Tape	12.5 ϕ × 13.5L	Pb-free and PET coating case
VUK	331	M	1C	TR	-	1313
Series name	Capacitance	Capacitance Tolerance	Rated Voltage	Package Type	Terminal Type	Case size
						Lead Wire and Coating Type

Note: For more details, please refer to "Part Numbering System (SMD Type)" on page 12.