

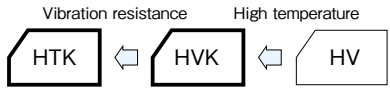
Conductive Polymer Hybrid Capacitors

GREEN CAP SMD Low ESR 125°C 6000hours

- Low ESR and high ripple current are realized.
- HTK is resist to vibration. (30G guaranteed)
- Equivalent to conductive polymer type Aluminum Electrolytic Capacitor. (There are little characteristics change by temperature and frequency)
- Guaranteed 125°C, 6000 hours. ($\phi 5$, 6.3V to 16V, 63V or more : 4000 hours)



Marking color : Blue print



Specifications

Item	Performance																				
Category temperature range (°C)	-55~+125																				
Tolerance at rated capacitance (%)	±20 (20°C, 120Hz)																				
Leakage current (μA) (max.)	0.01 CV or 3 whichever is larger (after 2 minutes) C : Rated capacitance (μF) , V : Rated voltage (V) (20°C)																				
Tangent of loss angle (tan δ)	<table border="1"> <tr> <td>Rated voltage (V)</td> <td>6.3</td><td>10</td><td>16</td><td>25</td><td>35</td><td>50</td><td>63</td><td>80</td><td>100</td> </tr> <tr> <td>tanδ (max.)</td> <td>0.20</td><td>0.18</td><td>0.16</td><td>0.14</td><td>0.12</td><td>0.10</td><td>0.08</td><td>0.08</td><td>0.08</td> </tr> </table> (20°C, 120Hz)	Rated voltage (V)	6.3	10	16	25	35	50	63	80	100	tan δ (max.)	0.20	0.18	0.16	0.14	0.12	0.10	0.08	0.08	0.08
Rated voltage (V)	6.3	10	16	25	35	50	63	80	100												
tan δ (max.)	0.20	0.18	0.16	0.14	0.12	0.10	0.08	0.08	0.08												
Characteristics at high and low temperature	Impedance ratio (max.) <table border="1"> <tr> <td>Z-25°C/Z+20°C</td> <td>1.5</td> </tr> <tr> <td>Z-55°C/Z+20°C</td> <td>2.0</td> </tr> </table> (100kHz)	Z-25°C/Z+20°C	1.5	Z-55°C/Z+20°C	2.0																
Z-25°C/Z+20°C	1.5																				
Z-55°C/Z+20°C	2.0																				
Endurance (125°C) (Applied ripple current)	<table border="1"> <tr> <td>Test time</td> <td>6000 hours ($\phi 5$, 6.3V to 16V, 63V or more : 4000 hours)</td> </tr> <tr> <td>Leakage current</td> <td>The initial specified value or less</td> </tr> <tr> <td>Percentage of capacitance change</td> <td>Within ±30% of initial value</td> </tr> <tr> <td>Tangent of the loss angle</td> <td>200% or less of the initial specified value</td> </tr> <tr> <td>ESR change</td> <td>200% or less of the initial specified value</td> </tr> </table>	Test time	6000 hours ($\phi 5$, 6.3V to 16V, 63V or more : 4000 hours)	Leakage current	The initial specified value or less	Percentage of capacitance change	Within ±30% of initial value	Tangent of the loss angle	200% or less of the initial specified value	ESR change	200% or less of the initial specified value										
Test time	6000 hours ($\phi 5$, 6.3V to 16V, 63V or more : 4000 hours)																				
Leakage current	The initial specified value or less																				
Percentage of capacitance change	Within ±30% of initial value																				
Tangent of the loss angle	200% or less of the initial specified value																				
ESR change	200% or less of the initial specified value																				
Shelf life (125°C)	Test time : 1000hours ; other items are same as the endurance. Voltage application treatment : According to JIS C5101-4 4.1.																				

Outline Drawing

Unit : mm

Series HVK

ϕD	L	A	B	C	M	W	P	Casing symbol
5	5.8±0.3	5.3	5.3	2.3	0.4±0.2	0.5 to 0.8	1.5	E61
6.3	5.8±0.3	6.6	6.6	2.7	0.4±0.2	0.5 to 0.8	2.0	F61
6.3	7.7±0.3	6.6	6.6	2.7	0.4±0.2	0.5 to 0.8	2.0	F80
8	8.7±0.3	8.4	8.4	3.0	0.4±0.2	0.5 to 0.8	3.1	G90
8	10±0.5	8.4	8.4	3.0	0.4±0.2	0.7 to 1.1	3.1	G10
10	8.7±0.3	10.4	10.4	3.3	0.4±0.2	0.7 to 1.1	4.7	H90
10	10±0.5	10.4	10.4	3.3	0.4±0.2	0.7 to 1.1	4.7	H10
10	12.5±0.5	10.4	10.4	3.3	0.4±0.2	0.7 to 1.1	4.7	HC5
12.5	13.5±0.5	13.0	13.0	4.9	0.7±0.3	1.0 to 1.4	4.6	IE

Series HTK

ϕD	L	A	B	C	M	W	P	Casing symbol
8	10±0.5	8.4	8.4	3.0	0.4±0.2	0.7 to 1.1	3.1	G10
10	10±0.5	10.4	10.4	3.3	0.4±0.2	0.7 to 1.1	4.7	H10
10	12.5±0.5	10.4	10.4	3.3	0.4±0.2	0.7 to 1.1	4.7	HC5
12.5	13.5±0.5	13.0	13.0	4.9	0.7±0.3	1.0 to 1.4	4.6	IE

- Soldering conditions are described on page 15.
- Land pattern size are described on page 13.
- The taping specifications are described on page 16.

Coefficient of Frequency for Rated Ripple Current

Frequency (Hz)	120	1k	10k	100k or more
Rated voltage (V)				
6.3 to 100	0.10	0.30	0.60	1

Part numbering system (6000 hours guaranteed)

HVK (example : 35V270 μF)

HVK	35	V	271	M	H10	B	□
Series code	Rated voltage symbol		Rated capacitance symbol	Capacitance tolerance symbol	Casing symbol		Taping symbol

HTK (example : 35V270 μF)

HTK	35	V	271	M	H10	B	□
Series code	Rated voltage symbol		Rated capacitance symbol	Capacitance tolerance symbol	Casing symbol		Taping symbol

(4000 hours guaranteed)

HVK (example : 16V470 μF)

HVK	16	V	471	M	H10	E	□
Series code	Rated voltage symbol		Rated capacitance symbol	Capacitance tolerance symbol	Casing symbol		Taping symbol

HTK (example : 63V56 μF)

HTK	63	V	560	M	H10	E	□
Series code	Rated voltage symbol		Rated capacitance symbol	Capacitance tolerance symbol	Casing symbol		Taping symbol

Standard Ratings

Rated voltage (V)	Item	6.3			10			16			25		
		Case φ D × L (mm)	ESR (mΩ max.)	Rated ripple current (mA _{rms})	Case φ D × L (mm)	ESR (mΩ max.)	Rated ripple current (mA _{rms})	Case φ D × L (mm)	ESR (mΩ max.)	Rated ripple current (mA _{rms})	Case φ D × L (mm)	ESR (mΩ max.)	Rated ripple current (mA _{rms})
33	—	—	—	—	—	—	—	—	—	—	5×5.8	80	900
47	—	—	—	—	—	—	—	5×5.8	70	600	—	—	—
56	—	—	—	—	—	—	—	—	—	—	6.3×5.8	50	900
82	—	—	—	—	—	—	—	6.3×5.8	45	950	—	—	—
100	—	—	—	—	6.3×5.8	45	950	—	—	—	6.3×7.7	30	1400
150	—	—	—	—	—	—	—	6.3×7.7	27	1450	8×8.7	27	1500
220	6.3×5.8	45	950	6.3×7.7	24	1450	—	—	—	—	8×10	27	1600
270	—	—	—	—	—	—	—	8×10	22	1700	10×8.7	25	1700
330	6.3×7.7	24	1450	8×10	22	1700	—	—	—	—	10×10	20	2000
470	—	—	—	10×10	18	2100	10×10	18	2100	—	—	—	—
560	8×10	22	1700	—	—	—	—	—	—	—	10×12.5	18	3000
820	10×10	18	2100	—	—	—	—	—	—	—	12.5×13.5	15	3500

Rated voltage (V)	Item	35			50			63		
		Case φ D × L (mm)	ESR (mΩ max.)	Rated ripple current (mA _{rms})	Case φ D × L (mm)	ESR (mΩ max.)	Rated ripple current (mA _{rms})	Case φ D × L (mm)	ESR (mΩ max.)	Rated ripple current (mA _{rms})
10	—	—	—	—	5×5.8	120	500	6.3×5.8	120	700
22	5×5.8	100	550	6.3×5.8	80	750	6.3×7.7	80	900	
27	—	—	—	—	—	—	8×8.7	50	1000	
33	—	—	—	6.3×7.7	40	1100	8×10	40	1100	
47	6.3×5.8	60	900	8×8.7	35	1200	10×8.7	35	1200	
56	—	—	—	—	—	—	10×10	30	1400	
68	6.3×7.7	35	1400	8×10	30	1250	—	—	—	
82	—	—	—	10×8.7	28	1400	—	—	—	
100	8×8.7	30	1500	10×10	28	1600	10×12.5	26	2000	
120	—	—	—	—	—	—	12.5×13.5	22	2500	
150	8×10	27	1600	10×12.5	24	2500	—	—	—	
220	10×8.7	25	1700	—	—	—	—	—	—	
270	10×10	20	2000	—	—	—	—	—	—	
330	—	—	—	12.5×13.5	20	3000	—	—	—	
390	10×12.5	18	3000	—	—	—	—	—	—	
560	12.5×13.5	15	3500	—	—	—	—	—	—	

Rated voltage (V)	Item	80			100		
		Case φ D × L (mm)	ESR (mΩ max.)	Rated ripple current (mA _{rms})	Case φ D × L (mm)	ESR (mΩ max.)	Rated ripple current (mA _{rms})
15	—	—	—	—	10×10	45	1000
22	8×10	45	1100	—	—	—	—
33	10×10	36	1200	—	—	—	—

(Note) Rated ripple current : 125°C , 100kHz ; ESR : 20°C , 100kHz