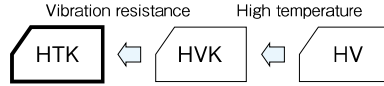


### Conductive Polymer Hybrid Capacitors

GREEN CAP SMD Low ESR 125°C 4000hours

- 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, 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)	Less than 0.01CV or 3(µA) whichever is larger (after 2 minutes) C : Rated capacitance (µF) , V : Rated voltage (V) (20°C)														
Tangent of loss angle (tanδ)	<table border="1"> <tr> <th>Rated voltage (V)</th> <td>25</td> <td>35</td> <td>50</td> <td>63</td> <td>80</td> <td>100</td> </tr> <tr> <th>tanδ (max.)</th> <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)	25	35	50	63	80	100	tanδ (max.)	0.14	0.12	0.10	0.08	0.08	0.08
Rated voltage (V)	25	35	50	63	80	100									
tanδ (max.)	0.14	0.12	0.10	0.08	0.08	0.08									
Characteristics at high and low temperature	<table border="1"> <tr> <th>Impedance ratio (max.)</th> <td>Z-25°C/Z+20°C</td> <td>1.5</td> </tr> <tr> <td></td> <td>Z-55°C/Z+20°C</td> <td>2.0</td> </tr> </table> (100kHz)	Impedance ratio (max.)	Z-25°C/Z+20°C	1.5		Z-55°C/Z+20°C	2.0								
Impedance ratio (max.)	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> <th>Test time</th> <td>4000 hours</td> </tr> <tr> <th>Leakage current</th> <td>The initial specified value or less</td> </tr> <tr> <th>Percentage of capacitance change</th> <td>Within ±30% of initial value</td> </tr> <tr> <th>Tangent of the loss angle</th> <td>200% or less of the initial specified value</td> </tr> <tr> <th>ESR change</th> <td>200% or less of the initial specified value</td> </tr> </table>	Test time	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	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														

### Outline Drawing

Unit : mm

Series HVK

( ) : Reference size

φD	L	A	B	C	W	P	Casing symbol
6.3	5.8±0.3	6.6	6.6	2.7	0.5 to 0.8	2.0	F61
6.3	7.7±0.3	6.6	6.6	2.7	0.5 to 0.8	2.0	F80
8	8.7±0.3	8.4	8.4	3.0	0.5 to 0.8	3.1	G90
8	10±0.5	8.4	8.4	3.0	0.7 to 1.1	3.1	G10
10	8.7±0.3	10.4	10.4	3.3	0.7 to 1.1	4.7	H90
10	10±0.5	10.4	10.4	3.3	0.7 to 1.1	4.7	H10
10	12.5±0.5	10.4	10.4	3.3	0.7 to 1.1	4.7	HC5

- 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) 25 to 100	0.10	0.30	0.60	1

Part numbering system

HVK (example : 35V270µF)

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

HTK (example : 35V270µF)

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

Standard Ratings

Rated voltage (V) Rated capacitance (μF)	Item	25			35			50			63		
		Case	ESR	Rated ripple current	Case	ESR	Rated ripple current	Case	ESR	Rated ripple current	Case	ESR	Rated ripple current
		φ D×L (mm)	(mΩ max.)	(mA rms)	φ D×L (mm)	(mΩ max.)	(mA rms)	φ D×L (mm)	(mΩ max.)	(mA rms)	φ D×L (mm)	(mΩ max.)	(mA rms)
10	—	—	—	—	—	—	—	—	—	6.3×5.8	120	700	
22	—	—	—	—	—	—	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	6.3×5.8	50	900	—	—	—	—	—	—	10×10	30	1400	
68	—	—	—	6.3×7.7	35	1400	8×10	30	1250	—	—	—	
82	—	—	—	—	—	—	10×8.7	28	1400	—	—	—	
100	6.3×7.7	30	1400	8×8.7	30	1500	10×10	28	1600	10×12.5	26	2000	
150	8×8.7	27	1500	8×10	27	1600	10×12.5	24	2500	—	—	—	
220	8×10	27	1600	10×8.7	25	1700	—	—	—	—	—	—	
270	10×8.7	25	1700	10×10	20	2000	—	—	—	—	—	—	
330	10×10	20	2000	—	—	—	—	—	—	—	—	—	
390	—	—	—	10×12.5	18	3000	—	—	—	—	—	—	
560	10×12.5	18	3000	—	—	—	—	—	—	—	—	—	

ALUMINUM

POLYMER HYBRID

125°C

Rated voltage (V) Rated capacitance (μF)	Item	80			100		
		Case	ESR	Rated ripple current	Case	ESR	Rated ripple current
		φ D×L (mm)	(mΩ max.)	(mA rms)	φ D×L (mm)	(mΩ max.)	(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