HBV Series

Features

- 105℃, 10,000 hours assured
- Low ESR and High ripple current
- RoHS compliance
- AEC-Q200 qualified

Marking color: Dark Green

Specifications

Items	Performance
Category Temperature Range	-55℃ ~ +105℃
Capacitance Tolerance	±20% (at 120 Hz, 20℃)
Leakage Current (at 20℃)	I = 0.01CV or 3 (μA) whichever is greater (after 2 minutes) Where, C = rated capacitance in μF, V = rated DC working voltage in V
Tanδ (at 120 Hz, 20℃)	See Standard Ratings
Low Temperature Characteristics (at 100k Hz)	Impedance ratio shall not exceed the values given in the table below

Rated Voltage		16	25	35	50	63	80
Impedance ratio	Z (-25℃) / Z (+20℃)	1.5	1.5	1.5	1.5	1.5	1.5
	Z (-55℃) / Z (+20℃)	2.0	2.0	2.0	2.0	2.0	2.0

Endurance

Test Time	10,000 Hrs
Capacitance Change	Within ±30% of initial value
Tanδ	Less than 200% of specified value
ESR	Less than 200% of specified value
Leakage Current	Within specified value

* The above specifications shall be satisfied when the capacitors are restored to 20℃ after the rated voltage applied with rated ripple current for 10,000 hours at 105℃.

Shelf Life Test

* After storage for 1,000 hours at 105 ± 2℃ with no voltage applied and then being stabilized at 20℃, capacitors shall meet the limits specified in Endurance. (With voltage treatment)

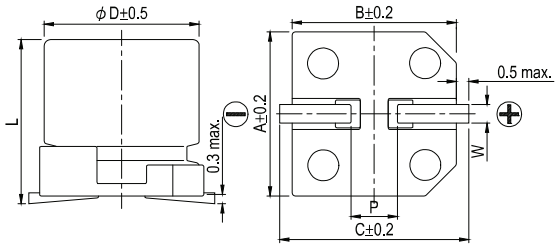
Resistance to Soldering Heat (Please refer to page 15 for reflowsoldering conditions)

Capacitance Change	Within ±10% of initial value
Tanδ	Within specified value
ESR	Within specified value
Leakage Current	Within specified value

Ripple Current and Frequency Multipliers

Frequency (Hz)	120 ≦ f < 1k	1k ≦ f < 10k	10k ≦ f < 100k	100k ≦ f < 500k
Multiplier	0.1	0.3	0.6	1.0

Diagram of Dimensions

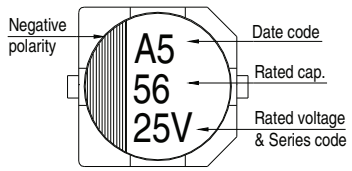


Lead Spacing and Diameter — Unit: mm

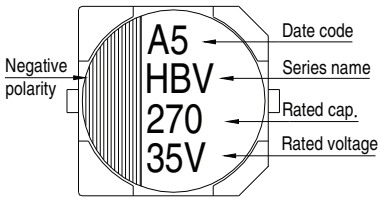
ϕD	L	A	B	C	W	P ± 0.2
6.3	5.8 ± 0.3	6.6	6.6	7.2	0.5 ~ 0.8	2.0
6.3	7.7 ± 0.3	6.6	6.6	7.2	0.5 ~ 0.8	2.0
8	10.0 ± 0.5	8.3	8.3	9.0	0.7 ~ 1.1	3.1
10	10.0 ± 0.5	10.3	10.3	11.0	0.7 ~ 1.3	4.7
10	12.5 ± 0.5	10.3	10.3	11.0	0.7 ~ 1.3	4.7

Marking

ϕD = 6.3



ϕD = 8 ~ 10



Surge Components Inc. (USA)
sales@surgecomponents.com
+1 (631) 595-1818

Surge Components EMEA (Europe)
emea@surgecomponents.com
+44-204-593 0098

Surge Components.Ltd. (Asia)
surgehk@surgecomponents.com.hk
+852-2172-7607

HBV Series

Dimension: φD×L(mm)
Ripple Current: mA/rms at 100k Hz, 105℃

Standard Ratings

Rated Voltage (V)	Surge Voltage (V)	Capacitance (μF)	Size φD×L(mm)	Tanδ (120 Hz, 20℃)	L C (μA)	E S R (mΩ/at 100kHz, 20℃ max.)	Rated R. C. (mA/rms at 100k Hz, 105℃)
16V (1C)	18.4	82	6.3 × 5.8	0.16	13.1	50	1,300
		150	6.3 × 7.7		24.0	30	2,000
		270	8 × 10		43.2	27	2,300
		470	10 × 10		75.2	20	2,500
25V (1E)	28.8	47	6.3 × 5.8	0.14	11.8	50	1,300
		56	6.3 × 5.8		14.0	50	1,300
		68	6.3 × 7.7		17.0	30	2,000
		100	6.3 × 7.7		25.0	30	2,000
		150	8 × 10		37.5	27	2,300
		220	8 × 10		55.0	27	2,300
		330	10 × 10		82.5	20	2,500
			10 × 12.5		82.5	16	2,900
35V (1V)	40.3	27	6.3 × 5.8	0.12	9.5	60	1,300
		33			11.6		
		47			16.5		
		68	6.3 × 7.7		23.8	35	2,000
		100	8 × 10		35.0	27	2,300
		150	8 × 10		52.5	27	2,300
		220	10 × 10		77.0	20	2,500
		270	10 × 10		94.5	20	2,500
50V(1H)	57.5	22	6.3 × 5.8	0.10	11.0	80	1,100
		33	6.3 × 7.7		16.5	40	1,600
		47	8 × 10		23.5	30	1,800
		68	8 × 10		34.0	30	1,800
		100	10 × 10		50.0	28	2,000
63V(1J)	72.5	10	6.3 × 5.8	0.08	6.3	120	1,000
		22	6.3 × 7.7		13.9	80	1,500
		27	8 × 10		17.0	40	1,700
		33			20.8		
		47			29.6		
		56	10 × 10		35.3	30	1,800
		68			42.8		
		82			51.7		
80V(1K)	92.0	22	8 × 10	0.08	17.6	45	1,550
		33	10 × 10		26.4	36	1,700
		47	10 × 10		37.6	36	1,700

Part Numbering System

HBV Series	220μF	±20%	25V	Carrier Tape		8φ×10L	
HBV	**221**	**M**	**1E**	**TR**	**-**	**0810**	**xx**
Series Name	Capacitance	Capacitance Tolerance	Rated Voltage	Package Type	Terminal Type	Case Size	S = Standard KS = AEC-Q200 Qualified

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surgehk@surgecomponents.com.hk
+852-2172-7607