

HBV Series

Features

- 105°C, 10,000 hours assured
- Low ESR and High ripple current
- RoHS Compliance

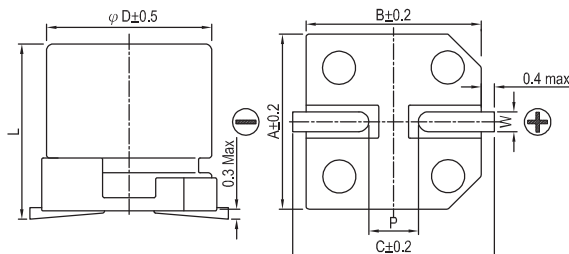


Marking color: Dark Green

Specifications

Items	Performance				
Category Temperature Range	-55°C ~ +105°C				
Capacitance Tolerance	±20% (at 120Hz, 20°C)				
Leakage Current (at 20°C)	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 120Hz, 20°C)	See Standard Ratings				
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°C after the rated voltage applied with rated ripple current for 10,000 hours at 105°C.				
Shelf Life Test	* After storage for 1,000 hours at 105 ± 2°C with no voltage applied and then being stabilized at 20°C, capacitors shall meet the limits specified in Endurance. (With voltage treatment)				
Resistance to Soldering Heat (Please refer to page 25 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



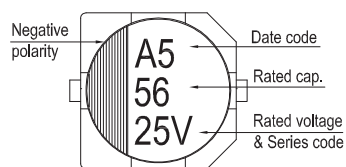
Lead Spacing and Diameter

Unit: mm

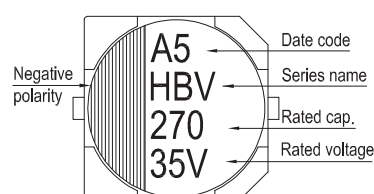
φD	L	A	B	C	W	P ± 0.2
6.3	5.8 ± 0.3	6.6	6.6	7.2	0.5 ~ 0.8	2.0
6.3	7.7 ± 0.3	6.6	6.6	7.2	0.5 ~ 0.8	2.0
8	10.0 ± 0.5	8.4	8.4	9.0	0.7 ~ 1.1	3.1
8	12.0 ± 0.5	8.4	8.4	9.0	0.7 ~ 1.1	3.1
10	10.0 ± 0.5	10.4	10.4	11.0	0.7 ~ 1.3	4.7
10	12.5 ± 0.5	10.4	10.4	11.0	0.7 ~ 1.3	4.7

Marking

φD = 6.3 mm



φD = 8 ~ 10 mm



Dimension: $\phi D \times L$ (mm)

Ripple Current: mA/rms at 100k Hz, 105°C

Standard Ratings

W. V. (V)	Surge Voltage (V)	Capacitance (μ F)	Size $\phi D \times L$ (mm)	Tan δ (120Hz, 20°C)	L C (μ A)	E S R (m Ω /at 100kHz, 20°C Max)	Rated R. C. (mA/rms at 100k Hz, 105°C)
16V (1C)	18.4	82	6.3 $\times$ 5.8	0.16	13.1	50	1,300
		150	6.3 $\times$ 7.7	0.16	24	30	2,000
		270	8 $\times$ 10	0.16	43.2	27	2,300
		470	10 $\times$ 10	0.16	75.2	20	2,500
25V (1E)	28.8	56	6.3 $\times$ 5.8	0.14	14	50	1,300
		100	6.3 $\times$ 7.7	0.14	25	30	2,000
		220	8 $\times$ 10	0.14	55	27	2,300
		330	10 $\times$ 10	0.14	82.5	20	2,500
		330	10 $\times$ 12.5	0.14	82.5	16	2,900
35V (1V)	40.3	27	6.3 $\times$ 5.8	0.12	9.5	60	1,300
		68	6.3 $\times$ 7.7	0.12	23.8	35	2,000
		150	8 $\times$ 10	0.12	52.5	27	2,300
		270	10 $\times$ 10	0.12	94.5	20	2,500
50V(1H)	57.5	22	6.3 $\times$ 5.8	0.10	11	80	1,100
		33	6.3 $\times$ 7.7	0.10	16.5	40	1,600
		68	8 $\times$ 10	0.10	34	30	1,800
		100	10 $\times$ 10	0.10	50	28	2,000
63V(1J)	72.5	10	6.3 $\times$ 5.8	0.08	6.3	120	1,000
		22	6.3 $\times$ 7.7	0.08	13.9	80	1,500
		27	8 $\times$ 12	0.08	17	40	1,700
		33	8 $\times$ 10	0.08	20.8	40	1,700
		56	10 $\times$ 10	0.08	35.3	30	1,800
80V(1K)	92.0	22	8 $\times$ 10	0.08	17.6	45	1,550
		33	10 $\times$ 10	0.08	26.4	36	1,700

Part Numbering System

HBV Series	220 μ F	$\pm 20\%$	25V	Carrier Tape		8 $\phi \times 10$ L	Pb-free and PET coating case
HBV	221	M	1E	TR	-	0810	
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 15.