

HBV Series

Features

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



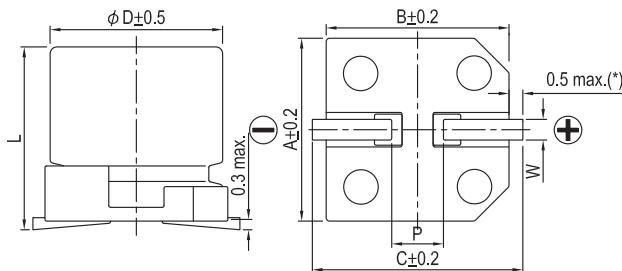
Marking color: Dark Green

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	<table border="1"> <tr> <td>Test Time</td> <td>10,000 Hrs</td> </tr> <tr> <td>Capacitance Change</td> <td>Within ±30% of initial value</td> </tr> <tr> <td>Tanδ</td> <td>Less than 200% of specified value</td> </tr> <tr> <td>ESR</td> <td>Less than 200% of specified value</td> </tr> <tr> <td>Leakage Current</td> <td>Within specified value</td> </tr> </table>	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
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	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										
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)	<table border="1"> <tr> <td>Capacitance Change</td> <td>Within ±10% of initial value</td> </tr> <tr> <td>Tanδ</td> <td>Within specified value</td> </tr> <tr> <td>ESR</td> <td>Within specified value</td> </tr> <tr> <td>Leakage Current</td> <td>Within specified value</td> </tr> </table>	Capacitance Change	Within ±10% of initial value	Tanδ	Within specified value	ESR	Within specified value	Leakage Current	Within specified value		
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	ESR	Within specified value									
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Ripple Current and Frequency Multipliers	<table border="1"> <tr> <th>Frequency (Hz)</th> <th>120 ≤ f < 1k</th> <th>1k ≤ f < 10k</th> <th>10k ≤ f < 100k</th> <th>100k ≤ f < 500k</th> </tr> <tr> <td>Multiplier</td> <td>0.1</td> <td>0.3</td> <td>0.6</td> <td>1.0</td> </tr> </table>	Frequency (Hz)	120 ≤ f < 1k	1k ≤ f < 10k	10k ≤ f < 100k	100k ≤ f < 500k	Multiplier	0.1	0.3	0.6	1.0
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Hybrid

Diagram of Dimensions



Lead Spacing and Diameter

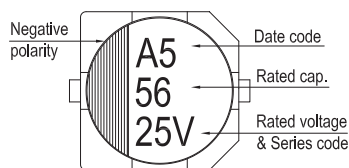
Unit: mm

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
8	12.0 ± 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

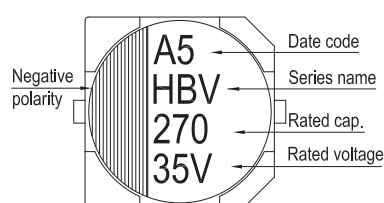
(*): For 6.3 φ is 0.4 max.

Marking

φD = 6.3 mm



φD = 8 ~ 10 mm





Dimension: ϕ D×L(mm)
Ripple Current: mA/rms at 100k Hz, 105°C

Standard Ratings

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

Hybrid

Part Numbering System

HBV Series	220μF	±20%	25V	Carrier Tape	8 ϕ × 10L	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.

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