

HBR Series

Features

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

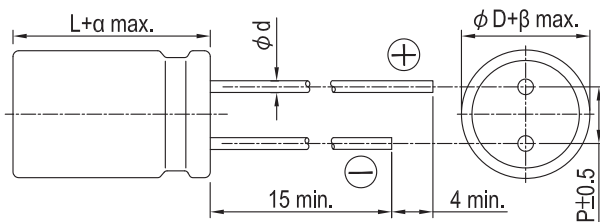


Marking color: Dare Green

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 $3 (\mu A)$ whichever is greater (after 2 minutes) Where, C = rated capacitance in μF , V = rated DC working voltage in V										
Tan δ (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	Tan δ	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									
	Tan δ	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 $105 \pm 2^\circ C$ 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	<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	Tan δ	Within specified value	ESR	Within specified value	Leakage Current	Within specified value		
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Ripple Current and Frequency Multipliers											
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Diagram of Dimensions



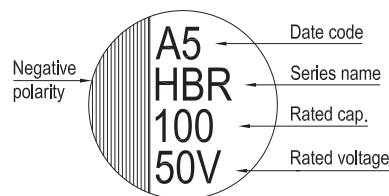
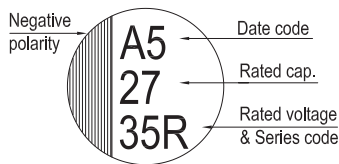
Lead Spacing and Diameter Unit: mm

ϕD	6.3	6.3	8	8	10	10
L	6	8	10	12	10	12
P	2.5	2.5	3.5	3.5	5.0	5.0
ϕd	0.45		0.6			
α	1.0					
β	0.5					

Marking

$\phi D = 6.3$

$\phi D = 8 \sim 10$





Dimension: $\phi D \times L$ (mm)
Ripple Current: mA/rms at 100k Hz, 105°C

Standard Ratings

Rated Volt. (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 × 6	0.16	13.1	50	1,300
		150	6.3 × 8	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 × 6	0.14	14	50	1,300
		100	6.3 × 8	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	0.14	82.5	16	2,900
35V (1V)	40.3	27	6.3 × 6	0.12	9.5	60	1,300
		68	6.3 × 8	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 × 6	0.10	11	80	1,100
		33	6.3 × 8	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 × 6	0.08	6.3	120	1,000
		22	6.3 × 8	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

HBR Series 220 μ F \pm 20% 25V Bulk Package Gas Type 8 ϕ × 10L Pb-free and PET coating case

HBR **221** **M** **1E** **BK** - **0810**

Series Name Capacitance Capacitance Tolerance Rated Voltage Lead Configuration & Package Rubber Type Case size Lead Wire and Coating Type

Note: For more details, please refer to "Part Numbering System (Radial Type)" on page 13.