

HBO Series

Features

- 125°C, 4,000 hours assured
- Low ESR and High ripple current
- RoHS compliant
- AEC-Q200 compliant

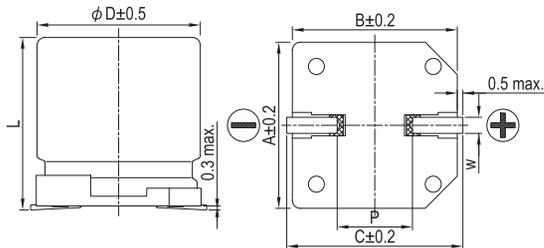


Marking color: Dark Green

Specifications

Items	Performance										
Category Temperature Range	-55°C ~ +125°C										
Capacitance Tolerance	±20% (at 120 Hz, 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 120 Hz, 20°C)	See Standard Ratings										
Low Temperature Characteristics (at 100k Hz)	Impedance ratio shall not exceed the values given in the table below										
	<table border="1"> <thead> <tr> <th colspan="2">Rated Voltage</th> <th>25</th> <th>35</th> </tr> </thead> <tbody> <tr> <td rowspan="2">Impedance ratio</td> <td>Z (-25°C) / Z (+20°C)</td> <td>1.5</td> <td>1.5</td> </tr> <tr> <td>Z (-55°C) / Z (+20°C)</td> <td>2.0</td> <td>2.0</td> </tr> </tbody> </table>	Rated Voltage		25	35	Impedance ratio	Z (-25°C) / Z (+20°C)	1.5	1.5	Z (-55°C) / Z (+20°C)	2.0
Rated Voltage		25	35								
Impedance ratio	Z (-25°C) / Z (+20°C)	1.5	1.5								
	Z (-55°C) / Z (+20°C)	2.0	2.0								
Endurance	Test Time	4,000 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									
* The above specifications shall be satisfied when the capacitors are restored to 20°C after the rated voltage applied with rated ripple current for 4,000 hours at 125°C.											
Shelf Life Test	* After storage for 1,000 hours at $125 \pm 2^\circ C$ 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 (Please refer to page 15 for reflowsoldering conditions)	Capacitance Change	Within ±10% of initial value									
	Tan δ	Within specified value									
	ESR	Within specified value									
	Leakage Current	Within specified value									
Ripple Current and Frequency Multipliers	Frequency (Hz)	$120 \leq f < 1k$	$1k \leq f < 10k$	$10k \leq f < 100k$	$100k \leq f < 500k$						
	Multiplier	0.1	0.3	0.6	1.0						

Diagram of Dimensions



Lead Spacing and Diameter

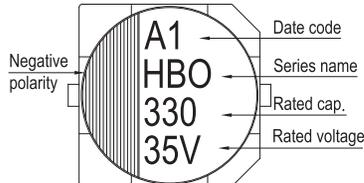
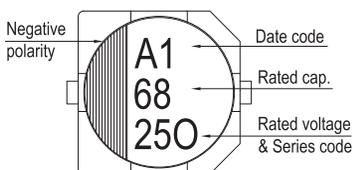
Unit: mm

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

Marking

$\phi D = 6.3$

$\phi D = 8 \sim 10$





Dimension: $\phi D \times L$ (mm)
Ripple Current: mA/rms at 100k Hz, 125°C

Standard Ratings

Rated Voltage (V)	Surge Voltage (V)	Capacitance (μ F)	Size $\phi D \times L$ (mm)	Tan δ (120 Hz, 20°C)	L C (μ A)	E S R (m Ω /at 100kHz, 20°C max.)	Rated R. C. (mA/rms at 100k Hz, 125°C)
25V (1E)	28.8	68	6.3 × 5.8	0.14	17.0	50	1,300
		82	6.3 × 5.8		20.5	50	1,300
		150	6.3 × 7.7		37.5	30	1,800
		270	8 × 10		67.5	27	2,000
		470	10 × 10		117	20	2,800
35V (1V)	40.3	56	6.3 × 5.8	0.12	19.6	60	1,200
		100	6.3 × 7.7		35.0	35	1,700
		180	8 × 10		63.0	27	2,000
		330	10 × 10		115	20	2,800

Part Numbering System

HBO Series	270 μ F	\pm 20%	25V	Carrier Tape		8 ϕ × 10L	General Purpose
HBO	271	M	1E	TR	-	0810	
Series Name	Capacitance	Capacitance Tolerance	Rated Voltage	Package Type	Terminal Type	Case Size	Application

Note: For more details, please refer to "Part Numbering System" on page 87.

