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Jameco Part Number 1359015

Surface Mount Type

Series: HB Type : V

- Features
- Endurance: 105°C 2000 h
 - 5.8 mm height (≤φ6.3), 5.5mm height max.
 - Vibration-proof product is available upon request.(φ8≤)
 - RoHS directive compliant

Country of Origin
Japan
Malaysia

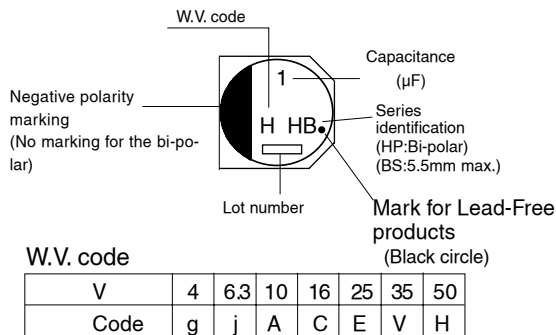


Specifications

Category temp. range	-40 to +105°C								
Rated W.V. Range	4 to 50 V .DC								
Nominal Cap. Range	0.1 to 470 μ F								
Capacitance Tolerance	±20 % (120Hz/+20°C)								
DC Leakage Current	I ≤ 0.01 CV or 3(μ A) after 2 minutes (Bi-Polar I=0.02 CV or 6 (μA) after 2 minutes) (Whichever is greater)								
tan δ	Please see the attached standard products list								
Characteristics at Low Temperature	W.V. (V)	4	6.3	10	16	25	35	50	(Impedance ratio at 120 Hz)
	-25 / +20 °C	7	4	3	2	2	2	2	
	-40 / +20 °C	15	8	6	4	4	3	3	
Endurance	After applying rated working voltage for 2000 hours at +105±2°C and then being stabilized at +20°C, capacitors shall meet the following limits.								
	Capacitance change		±20% of initial measured value (4W.V.:±35 %, 6.3W.V.:±25 % φ4 to φ6.3, 5.5mm max.:±25%)						
	tan δ		≤ 200 % of initial specified value						
	DC leakage current		≤ initial specified value						
Shelf Life	After storage for 1000 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	After reflow soldering and then being stabilized at +20°C, capacitor shall meet the following limits.								
	Capacitance change		±10% of initial measured value						
	tan δ		≤ initial specified value						
	DC leakage current		≤ initial specified value						

Marking

Example: 50V 1 μF (Polarized)



Dimensions in mm (not to scale)

Technical drawing of a mechanical part showing two views: a side view and a front view.

Side View Dimensions:

- Diameter: $\phi D \pm 0.5$
- Length: L
- Height: H
- End face detail: 0.3 max

Front View Dimensions:

- Hole diameters: $A \pm 0.2$ and $B \pm 0.2$
- Width: W
- Distance between holes: P
- Total width: I

() reference size

(mm)

Size code	D	L	A,B	H	I	W	P	K
B	4.0	5.8±0.3	4.3	5.5MAX	1.8	0.65±0.1	1.0	0.35-0.20 to+0.15
C	5.0	5.8±0.3	5.3	6.5MAX	2.2	0.65±0.1	1.5	0.35-0.20 to+0.15
D	6.3	5.8±0.3	6.6	7.8MAX	2.6	0.65±0.1	1.8	0.35-0.20 to+0.15
E	8.0	6.2±0.3	8.3	9.5MAX	3.4	0.65±0.1	2.2	0.35-0.20 to+0.15
F	8.0	10.2±0.3	8.3	10.0MAX	3.4	0.90±0.2	3.1	0.70±0.2
G	10.0	10.2±0.3	10.3	12.0MAX	3.5	0.90±0.2	4.6	0.70±0.2

Size code	D	L	A,B	H	I	W	P	K
B	4.0	5.4+0.1-0.2	4.3	5.5MAX	1.8	0.65±0.1	1.0	0.35-0.20 to+0.15
C	5.0	5.4+0.1-0.2	5.3	6.5MAX	2.2	0.65±0.1	1.5	0.35-0.20 to+0.15
D	6.3	5.4+0.1-0.2	6.6	7.8MAX	2.6	0.65±0.1	1.8	0.35-0.20 to+0.15

Case size

W.V(V) Cap.(μF)	4	6.3	10	16	25	35	50		
	Polar-ized	Polar-ized	Bi - polar	Polar-ized	Bi - polar	Polar-ized	Bi - polar		
0.1 to 0.47							B*	B	
1.0							B*	B	
2.2							B*	B	
3.3						B	B*	D	
4.7						B*	C*	D	
6.8						B*	C*		
10				B	B*	C	D	C*	D*
22		B*			C*		D	D*	E
33		B		C*	D		D*	E	F
47	B	C*	D				E	F	G
68									
100	C	D*		E	F		F	G	
150	D								
220	D	F		F	G		G		
330		F			G				
470				G					

* L:5.5mm max.is available
(suffix: SR or SP.
See P/N list)

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Mar. 2006

■ Standard Products

Endurance: 105°C 2000h

W.V. (V)	Cap. (±20%) (μF)	Case size			Specification		Part No. (RoHS:compliant)	Min. Packaging Q'ty
		Dia. (mm)	Length (mm)	Size Code	Ripple current (120Hz) (+105°C) (mA)	tan δ (120Hz) (+20°C)		
4	47	4	5.8	B	34	0.50	EEEB0G470R	(1) 2000
	100	5	5.8	C	61	0.50	EEEB0G101R	(1) 1000
	150	6.3	5.8	D	82	0.50	EEEB0G151P	(1) 1000
	220	6.3	5.8	D	82	0.50	EEEB0G221P	(1) 1000
6.3	22	4	5.8	B	26	0.30	EEEB0J220R	(1) 2000
	33	4	5.8	B	29	0.30	EEEB0J330R	(1) 2000
	47	5	5.8	C	46	0.30	EEEB0J470R	(1) 1000
	100	6.3	5.8	D	71	0.30	EEEB0J101P	(1) 1000
	220	8	10.2	F	150	0.35	EEEB0J221P	(2) 500
	330	8	10.2	F	230	0.35	EEEB0J331P	(2) 500
10	33	5	5.8	C	43	0.22	EEEB1A330R	(1) 1000
	100	8	6.2	E	110	0.26	EEEB1A101P	(2) 1000
	220	8	10.2	F	160	0.26	EEEB1A221P	(2) 500
	470	10	10.2	G	270	0.26	EEEB1A471P	(2) 500
16	10	4	5.8	B	28	0.16	EEEB1C100R	(1) 2000
	22	5	5.8	C	39	0.16	EEEB1C220R	(1) 1000
	47	6.3	5.8	D	70	0.16	EEEB1C470P	(1) 1000
	100	8.0	10.2	F	120	0.20	EEEB1C101P	(2) 500
	220	10	10.2	G	210	0.20	EEEB1C221P	(2) 500
	330	10	10.2	G	230	0.20	EEEB1C331P	(2) 500
25	4.7	4	5.8	B	22	0.14	EEEB1E4R7R	(1) 2000
	6.8	4	5.8	B	25	0.14	EEEB1E6R8R	(1) 2000
	33	6.3	5.8	D	65	0.14	EEEB1E330P	(1) 1000
	47	8	6.2	E	91	0.16	EEEB1E470P	(2) 1000
	100	8	10.2	F	130	0.16	EEEB1E101P	(2) 500
	220	10	10.2	G	190	0.16	EEEB1E221P	(2) 500
35	10	5	5.8	C	28	0.12	EEEB1V100R	(1) 1000
	22	6.3	5.8	D	55	0.12	EEEB1V220P	(1) 1000
	33	8	6.2	E	84	0.14	EEEB1V330P	(2) 1000
	47	8	10.2	F	98	0.14	EEEB1V470P	(2) 500
	100	10	10.2	G	160	0.14	EEEB1V101P	(2) 500
50	0.1	4	5.8	B	1	0.12	EEEB1HR10R	(1) 2000
	0.22	4	5.8	B	2	0.12	EEEB1HR22R	(1) 2000
	0.33	4	5.8	B	3	0.12	EEEB1HR33R	(1) 2000
	0.47	4	5.8	B	5	0.12	EEEB1HR47R	(1) 2000
	1	4	5.8	B	10	0.12	EEEB1H1R0R	(1) 2000
	2.2	4	5.8	B	16	0.12	EEEB1H2R2R	(1) 2000
	3.3	4	5.8	B	16	0.12	EEEB1H3R3R	(1) 2000
	4.7	5	5.8	C	23	0.12	EEEB1H4R7R	(1) 1000
	6.8	5	5.8	C	23	0.12	EEEB1H6R8R	(1) 1000
	10	6.3	5.8	D	35	0.12	EEEB1H100P	(1) 1000
	22	8	6.2	E	70	0.12	EEEB1H220P	(2) 1000
	33	8	10.2	F	91	0.12	EEEB1H330P	(2) 500
	47	10	10.2	G	100	0.12	EEEB1H470P	(2) 500

The taping dimensions are explained on p.195 of our Catalog. Please use it as a reference guide.

Reflow Profile(Fig-1 to Fig-6) listed on last page of our Catalog.

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Mar. 2005

■ Standard Products (Bi-polar)

Endurance : 105°C 2000h

W.V. (V)	Cap. (±20%) (μF)	Case size			Specification		Part No. (RoHS:compliant)	Min. Packaging Q'ty
		Dia. (mm)	Length (mm)	Size Code	Ripple current (120Hz) (+105°C) (mA)	tan δ (120Hz) (+20°C)		Taping (pcs)
6.3	47	6.3	5.8	D	35	0.60	EEEHP0J470P	(1) 1000
10	10	4	5.8	B	20	0.44	EEEHP1A100R	(1) 2000
	33	6.3	5.8	D	26	0.44	EEEHP1A330P	(1) 1000
16	10	5	5.8	C	25	0.32	EEEHP1C100R	(1) 1000
25	3.3	4	5.8	B	12	0.28	EEEHP1E3R3R	(1) 2000
	4.7	4	5.8	B	12	0.28	EEEHP1E4R7R	(1) 2000
	10	6.3	5.8	D	28	0.28	EEEHP1E100P	(1) 1000
	22	6.3	5.8	D	55	0.28	EEEHP1E220P	(1) 1000
35	2.2	4	5.8	B	10	0.24	EEEHP1V2R2R	(1) 2000
50	0.22	4	5.8	B	2	0.24	EEEHP1HR22R	(1) 2000
	0.33	4	5.8	B	3	0.24	EEEHP1HR33R	(1) 2000
	0.47	4	5.8	B	5	0.24	EEEHP1HR47R	(1) 2000
	1	4	5.8	B	10	0.24	EEEHP1H1R0R	(1) 2000
	3.3	6.3	5.8	D	16	0.24	EEEHP1H3R3P	(1) 1000
	4.7	6.3	5.8	D	23	0.24	EEEHP1H4R7P	(1) 1000

■ Standard Products(5.5mm max.)

Endurance : 105°C 2000h

W.V. (V)	Cap. (±20%) (μF)	Case Size			Specification		Part No. (RoHS:compliant)	Min. Packaging Q'ty
		Dia. (mm)	Length (mm)	Size code	Ripple current (120Hz) (+105°C) (mA)	tan δ (120Hz) (+20°C)		Taping (pcs)
6.3	22	4	5.4	B	26	0.30	EEEB0J220SR	(1) 2000
	47	5	5.4	C	46	0.30	EEEB0J470SR	(1) 1000
	100	6.3	5.4	D	71	0.30	EEEB0J101SP	(1) 1000
10	33	5	5.4	C	43	0.22	EEEB1A330SR	(1) 1000
16	10	4	5.4	B	28	0.16	EEEB1C100SR	(1) 2000
	22	5	5.4	C	39	0.16	EEEB1C220SR	(1) 1000
	47	6.3	5.4	D	70	0.16	EEEB1C470SP	(1) 1000
25	4.7	4	5.4	B	22	0.14	EEEB1E4R7SR	(1) 2000
	6.8	4	5.4	B	25	0.14	EEEB1E6R8SR	(1) 2000
	33	6.3	5.4	D	65	0.14	EEEB1E330SP	(1) 1000
35	10	5	5.4	C	28	0.12	EEEB1V100SR	(1) 1000
	22	6.3	5.4	D	55	0.12	EEEB1V220SP	(1) 1000
50	0.1	4	5.4	B	1	0.12	EEEB1HR10SR	(1) 2000
	0.22	4	5.4	B	2	0.12	EEEB1HR22SR	(1) 2000
	0.33	4	5.4	B	3	0.12	EEEB1HR33SR	(1) 2000
	0.47	4	5.4	B	5	0.12	EEEB1HR47SR	(1) 2000
	1	4	5.4	B	10	0.12	EEEB1H1R0SR	(1) 2000
	2.2	4	5.4	B	16	0.12	EEEB1H2R2SR	(1) 2000
	3.3	4	5.4	B	16	0.12	EEEB1H3R3SR	(1) 2000
	4.7	5	5.4	C	23	0.12	EEEB1H4R7SR	(1) 1000
	6.8	5	5.4	C	23	0.12	EEEB1H6R8SR	(1) 1000
	10	6.3	5.4	D	35	0.12	EEEB1H100SP	(1) 1000

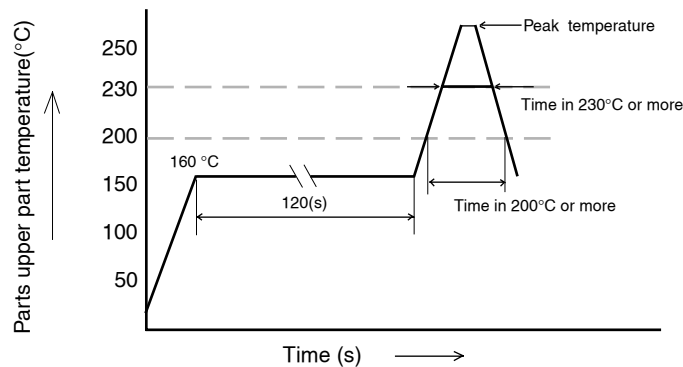
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Reflow Profile(Fig-1 to Fig-6) listed on last page of our Catalog.

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■ Reflow guaranteed condition

● RoHS compliant



Lead-Free reflow

Reflow No	Fig.(1)	Fig.(2)	Fig.(3)	Fig.(4)
Category	φ 3 to φ 6.3	φ 8 to φ 10	φ 12.5 to φ 18	EB series only (φ 10 to φ 18)
Peak temperature	250°C	235°C	230°C (220°C)	230°C
Time in peak temperature	5s	5s	5s (s)	5s
Time in 200°C or more	60s	60s	20s (30s)	20s
Time of reflow	1 time	1 time	1 time	1 time

High temperature Lead-Free reflow

Reflow No	Fig.(5)	Fig.(6)
Category	φ 4 to φ 6.3	φ 8 to φ 10
Peak temperature	260°C (255°C)	245°C
Time around peak temperature	5s in (10s) in 250°C or more	10s in 240°C or more
Time in 230°C or more	30s	30s
Time in 200°C or more	70s	70s
Time of reflow	2 times	2 times

● RoHS not compliant

Category	Dia. φ3 to φ 6.3 EEV-, ECEV- Part No.	Dia. φ8 to φ 10 EEV-, ECEV- Part No.
Reflow condition	Peak temperature/ Time in 200°C or more Peak temperature(°C) Time in 200°C or more	Peak temperature/ Time in 200°C or more Peak temperature(°C) Time in 200°C or more

※ For reflow, use athermal condition system such as infrared radiation(IR) or hot blast.

※ Vapor heat transfer systems(VPS) are not recommended.

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