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With the principle of "Quality Parts,Customers Priority,Honest Operation,and Considerate Service",our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip,ALPS,ROHM,Xilinx,Pulse,ON,Everlight and Freescale. Main products comprise IC,Modules,Potentiometer,IC Socket,Relay,Connector.Our parts cover such applications as commercial,industrial, and automotives areas.

We are looking forward to setting up business relationship with you and hope to provide you with the best service and solution. Let us make a better world for our industry!



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Surface Mount Type

Series : **HB** Type : **V**

Long life
HB 5.5 mm max.
 ↑
HA Low profile



Features

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

Specifications

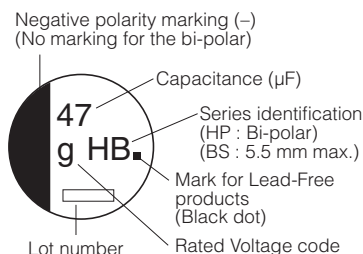
Category temperature range	-40 °C to +105 °C								
Rated voltage range	4 V.DC to 50 V.DC								
Capacitance range	1 μF to 470 μF								
Capacitance tolerance	±20 % (120 Hz/+20 °C)								
Leakage current	I ≤ 0.01 CV or 3 (μA) After 2 minutes (Bi-polar I ≤ 0.02 CV or 6 (μA) after 2 minutes) (Whichever is greater)								
Dissipation factor (tan δ)	Please see the attached characteristics list								
Characteristics at low temperature	V.DC	4	6.3	10	16	25	35	50	(Impedance ratio at 120 Hz)
	Z(-25 °C)/Z(+20 °C)	7	4	3	2	2	2	2	
	Z(-40 °C)/Z(+20 °C)	15	8	6	4	4	3	3	
Endurance	After applying rated working voltage for 2000 hours (Bi-polar : 1000 hours for each polarity) at +105 °C±2 °C and then being stabilized at +20 °C, Capacitors shall meet the following limits.								
	Capacitance change	Within ±20 % of the initial value (4 V.DC : ±35 % 6.3 V.DC : ±25 % φ4 to φ6.3), 5.5 mm max. : ±25 %							
	tan δ	≤ 200 % of the initial limit							
Shelf life	DC leakage current								
	Within the initial limit								
Resistance to soldering heat	After storage for 1000 hours at +105 °C±2 °C with no voltage applied and then being stabilized at +20 °C, capacitors shall meet the limits specified in Endurance. (With voltage treatment)								
	After reflow soldering and then being stabilized at +20 °C, capacitors shall meet the following limits.								
	Capacitance change	Within ±10 % of the initial value							
AEC-Q200	tan δ	Within the initial limit							
	DC leakage current	Within the initial limit							
AEC-Q200		AEC-Q200 compliant							

Frequency correction factor for ripple current

Frequency (Hz)	50, 60	120	1 k	10 k to
Correction factor	0.70	1.00	1.30	1.70

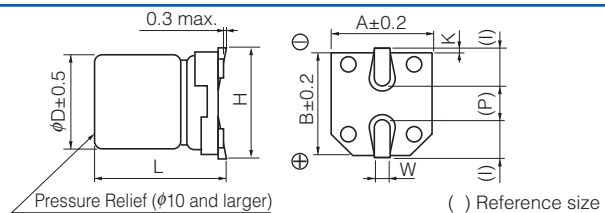
Marking

Example : 4 V.DC 47 μF
 Marking color : BLACK



R. Voltage (V.DC)	4	6.3	10	16	25	35	50
Code	g	j	A	C	E	V	H

Dimensions



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

● 5.5 mm height max.

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

Characteristics list

Endurance : 105 °C 2000 h

Rated voltage (V.DC)	Cap. (±20 %) (μF)	Case size (mm)		Size code	Specification		Part No.	Reflow	Min. Packaging Q'ty
		φD	L		Ripple current (120 Hz) (+105 °C) (mA r.m.s.)	tan δ (120 Hz) (+20 °C)			Taping (pcs)
4	47	4	5.8	B	34	0.50	EEEHB0G470R	(1)	2000
	100	5	5.8	C	61	0.50	EEEHB0G101R	(1)	1000
	150	6.3	5.8	D	82	0.50	EEEHB0G151P	(1)	1000
	220	6.3	5.8	D	82	0.50	EEEHB0G221P	(1)	1000
6.3	22	4	5.8	B	26	0.30	EEEHB0J220R	(1)	2000
	33	4	5.8	B	29	0.30	EEEHB0J330R	(1)	2000
	47	5	5.8	C	46	0.30	EEEHB0J470R	(1)	1000
	100	6.3	5.8	D	71	0.30	EEEHB0J101P	(1)	1000
	220	8	10.2	F	150	0.35	EEEHB0J221P	(2)	500
	330	8	10.2	F	230	0.35	EEEHB0J331P	(2)	500
10	33	5	5.8	C	43	0.22	EEEHB1A330R	(1)	1000
	100	8	6.2	E	110	0.26	EEEHB1A101P	(2)	1000
	220	8	10.2	F	160	0.26	EEEHB1A221P	(2)	500
	470	10	10.2	G	270	0.26	EEEHB1A471P	(2)	500
16	10	4	5.8	B	28	0.16	EEEHB1C100R	(1)	2000
	22	5	5.8	C	39	0.16	EEEHB1C220R	(1)	1000
	47	6.3	5.8	D	70	0.16	EEEHB1C470P	(1)	1000
	100	8	10.2	F	120	0.20	EEEHB1C101P	(2)	500
	220	10	10.2	G	210	0.20	EEEHB1C221P	(2)	500
	330	10	10.2	G	230	0.20	EEEHB1C331P	(2)	500
25	4.7	4	5.8	B	22	0.14	EEEHB1E4R7R	(1)	2000
	6.8	4	5.8	B	25	0.14	EEEHB1E6R8R	(1)	2000
	33	6.3	5.8	D	65	0.14	EEEHB1E330P	(1)	1000
	47	8	6.2	E	91	0.16	EEEHB1E470P	(2)	1000
	100	8	10.2	F	130	0.16	EEEHB1E101P	(2)	500
	220	10	10.2	G	190	0.16	EEEHB1E221P	(2)	500
35	10	5	5.8	C	28	0.12	EEEHB1V100R	(1)	1000
	22	6.3	5.8	D	55	0.12	EEEHB1V220P	(1)	1000
	33	8	6.2	E	84	0.14	EEEHB1V330P	(2)	1000
	47	8	10.2	F	98	0.14	EEEHB1V470P	(2)	500
	100	10	10.2	G	160	0.14	EEEHB1V101P	(2)	500
50	1	4	5.8	B	10	0.12	EEEHB1H1R0R	(1)	2000
	2.2	4	5.8	B	16	0.12	EEEHB1H2R2R	(1)	2000
	3.3	4	5.8	B	16	0.12	EEEHB1H3R3R	(1)	2000
	4.7	5	5.8	C	23	0.12	EEEHB1H4R7R	(1)	1000
	6.8	5	5.8	C	23	0.12	EEEHB1H6R8R	(1)	1000
	10	6.3	5.8	D	35	0.12	EEEHB1H100P	(1)	1000
	22	8	6.2	E	70	0.12	EEEHB1H220P	(2)	1000
	33	8	10.2	F	91	0.12	EEEHB1H330P	(2)	500
47	10	10.2	G	100	0.12	EEEHB1H470P	(2)	500	

· Please refer to the page of "Reflow Profile" and "The Taping Dimensions".

· When requesting vibration-proof product, please put the last "V" instead to "P"

Characteristics list (Bi-polar)

Endurance : 105 °C 2000 h

Rated voltage (V.DC)	Cap. (±20 %) (μF)	Case size (mm)		Size code	Specification		Part No.	Reflow	Min. Packaging Q'ty
		φD	L		Ripple current (120 Hz) (+105 °C) (mA r.m.s.)	tan δ (120 Hz) (+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	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

Characteristics list (5.5 mm max.)

Endurance : 105 °C 2000 h

Rated voltage (V.DC)	Cap. (±20 %) (μF)	Case size (mm)		Size code	Specification		Part No.	Reflow	Min. Packaging Q'ty
		φD	L		Ripple current (120 Hz) (+105 °C) (mA r.m.s.)	tan δ (120 Hz) (+20 °C)			Taping (pcs)
6.3	22	4	5.4	B	26	0.30	EEEHB0J220SR	(1)	2000
	47	5	5.4	C	46	0.30	EEEHB0J470SR	(1)	1000
	100	6.3	5.4	D	71	0.30	EEEHB0J101SP	(1)	1000
10	33	5	5.4	C	43	0.22	EEEHB1A330SR	(1)	1000
16	10	4	5.4	B	28	0.16	EEEHB1C100SR	(1)	2000
	22	5	5.4	C	39	0.16	EEEHB1C220SR	(1)	1000
	47	6.3	5.4	D	70	0.16	EEEHB1C470SP	(1)	1000
25	4.7	4	5.4	B	22	0.14	EEEHB1E4R7SR	(1)	2000
	6.8	4	5.4	B	25	0.14	EEEHB1E6R8SR	(1)	2000
	33	6.3	5.4	D	65	0.14	EEEHB1E330SP	(1)	1000
35	10	5	5.4	C	28	0.12	EEEHB1V100SR	(1)	1000
	22	6.3	5.4	D	55	0.12	EEEHB1V220SP	(1)	1000
50	1	4	5.4	B	10	0.12	EEEHB1H1R0SR	(1)	2000
	2.2	4	5.4	B	16	0.12	EEEHB1H2R2SR	(1)	2000
	3.3	4	5.4	B	16	0.12	EEEHB1H3R3SR	(1)	2000
	4.7	5	5.4	C	23	0.12	EEEHB1H4R7SR	(1)	1000
	6.8	5	5.4	C	23	0.12	EEEHB1H6R8SR	(1)	1000
	10	6.3	5.4	D	35	0.12	EEEHB1H100SP	(1)	1000

· Please refer to the page of "Reflow Profile" and "The Taping Dimensions".

· When requesting vibration-proof product, please put the last "V" instead to "P"