

Surface Mount Type

Series : **HD** Type : **V**

✳ 6.3 V.DC to 35 V.DC : High temperature Lead-Free reflow (suffix : A*)
50 V.DC to 100 V.DC : Standard Lead-Free reflow



Features

- Endurance : 105 °C 5000 h
- Vibration-proof product is available upon request. (φ8 mm and larger)
- RoHS compliant

Specifications

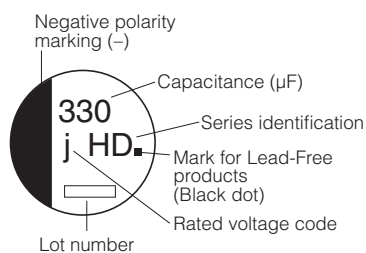
Category temperature range	-40 °C to +105 °C									
Rated voltage range	6.3 V.DC to 100 V.DC									
Capacitance range	1 μF to 1000 μF									
Capacitance tolerance	±20 % (120 Hz/+20 °C)									
Leakage current	I ≤ 0.01 CV or 3 (μA) After 2 minutes (Whichever is greater)									
Dissipation factor (tan δ)	Please see the attached characteristics list									
Characteristics at low temperature	V.DC	6.3	10	16	25	35	50	63	100	(Impedance ratio at 120 Hz)
	Z(-25 °C)/Z(+20 °C)	3	3	2	2	2	2	2	2	
	Z(-40 °C)/Z(+20 °C)	4	4	3	3	3	3	3	3	
Endurance	After applying rated working voltage for 5000 hours at +105 °C±2 °C and then being stabilized at +20 °C, capacitors shall meet the following limits.									
	Capacitance change	Within ±30 % of the initial value								
	tan δ	≤ 300 % of the initial limit								
Shelf life	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)									
	Capacitance change	Within ±20 % of the initial value								
	tan δ	≤ 200 % of the initial limit								
Resistance to soldering heat	After reflow soldering and then being stabilized at +20 °C, capacitors shall meet the following limits.									
	Capacitance change	Within ±10 % of the initial value								
	tan δ	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

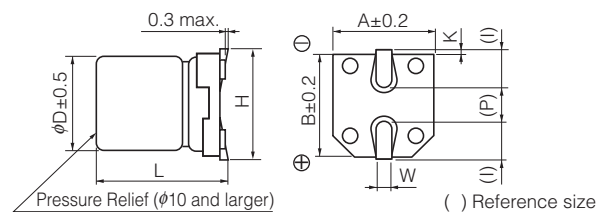
Marking

Example : 6.3 V.DC 330 μF
Marking color : BLACK



R. Voltage (V.DC)	6.3	10	16	25	35	50	63	100
Code	j	A	C	E	V	H	J	2A

Dimensions



(Unit : mm)

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}
D8	6.3	7.7±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

Characteristics list (6.3 V.DC to 35 V.DC)

Endurance : 105 °C 5000 h

Rated voltage (V.DC)	Cap. (±20 %) (μF)	Case size (mm)		Size code	Specification			Part No.	Reflow	Min. Packaging Qty	
		φD	L		Ripple current (120 Hz) (+105 °C) (mA r.m.s.)	Impedance (100 kHz) (+20 °C) (Ω)	tan δ (120 Hz) (+20 °C)			Taping (pcs)	
6.3	330	8	10.2	F	230	1.5	0.30	EEEHD0J331AP	(7)	500	
	1000	10	10.2	G	313	0.8	0.50	EEEHD0J102AP	(7)	500	
10	100	8	6.2	E	62	2.0	0.30	EEEHD1A101AP	(7)	1000	
	220	8	10.2	F	160	1.5	0.30	EEEHD1A221AP	(7)	500	
	330	8	10.2	F	160	1.5	0.30	EEEHD1A331AP	(7)	500	
16	10	4.0	5.8	B	28	12.0	0.20	EEEHD1C100AR	(5)	2000	
	22	5.0	5.8	C	39	7.2	0.20	EEEHD1C220AR	(5)	1000	
	47	6.3	5.8	D	70	4.0	0.20	EEEHD1C470AP	(5)	1000	
	100	8	10.2	F	130	1.5	0.20	EEEHD1C101AP	(7)	500	
	220	10	10.2	G	220	0.8	0.20	EEEHD1C221AP	(7)	500	
	470	10	10.2	G	340	0.8	0.20	EEEHD1C471AP	(7)	500	
25	4.7	4	5.8	B	17	12.0	0.16	EEEHD1E4R7AR	(5)	2000	
	10	5	5.8	C	28	7.2	0.16	EEEHD1E100AR	(5)	1000	
	22	6.3	5.8	D	55	4.0	0.16	EEEHD1E220AP	(5)	1000	
	33	6.3	5.8	D	55	4.0	0.16	EEEHD1E330AP	(5)	1000	
	47	8	6.2	E	56	2.0	0.18	EEEHD1E470AP	(7)	1000	
	100	8	10.2	F	130	1.5	0.16	EEEHD1E101AP	(7)	500	
	330	10	10.2	G	238	0.8	0.16	EEEHD1E331AP	(7)	500	
35	4.7	4	5.8	B	17	12.0	0.13	EEEHD1V4R7AR	(5)	2000	
	10	5	5.8	C	28	7.2	0.13	EEEHD1V100AR	(5)	1000	
	22	6.3	5.8	D	55	4.0	0.13	EEEHD1V220AP	(5)	1000	
	33	8	6.2	E	53	2.0	0.16	EEEHD1V330AP	(7)	1000	
		6.3	7.7	D8	57	2.0	0.13	EEEHDV330XAP	(5)	900	
	47	6.3	7.7	D8	57	2.0	0.14	EEEHDV470XAP	(5)	900	
		8	10.2	F	79	1.5	0.14	EEEHD1V470AP	(7)	500	
	100	10	10.2	G	101	0.8	0.14	EEEHD1V101AP	(7)	500	
	220	10	10.2	G	220	0.8	0.14	EEEHD1V221AP	(7)	500	

Characteristics list (50 V.DC to 100 V.DC)

Endurance : 105 °C 5000 h

Rated voltage (V.DC)	Cap. (±20 %) (μF)	Case size (mm)		Size code	Specification			Part No.	Reflow	Min. Packaging Qty	
		φD	L		Ripple current (120 Hz) (+105 °C) (mA r.m.s.)	Impedance (100 kHz) (+20 °C) (Ω)	tan δ (120 Hz) (+20 °C)			Taping (pcs)	
50	1	4	5.8	B	7	12.0	0.12	EEEHD1H1R0R	(1)	2000	
	2.2	4	5.8	B	12	12.0	0.12	EEEHD1H2R2R	(1)	2000	
	3.3	4	5.8	B	16	12.0	0.12	EEEHD1H3R3R	(1)	2000	
	4.7	5	5.8	C	21	7.2	0.12	EEEHD1H4R7R	(1)	1000	
	10	6.3	5.8	D	33	4.0	0.12	EEEHD1H100P	(1)	1000	
	22	8	6.2	E	50	2.0	0.14	EEEHD1H220P	(2)	1000	
	33	8	10.2	F	74	1.5	0.14	EEEHD1H330P	(2)	500	
	47	10	10.2	G	94	0.8	0.14	EEEHD1H470P	(2)	500	
63	100	10	10.2	G	94	0.8	0.14	EEEHD1H101P	(2)	500	
	10	8	6.2	E	45	2.0	0.18	EEEHD1J100P	(2)	1000	
	22	8	10.2	F	65	1.5	0.18	EEEHD1J220P	(2)	500	
100	33	10	10.2	G	80	0.8	0.18	EEEHD1J330P	(2)	500	
	10	8	10.2	F	55	1.5	0.18	EEEHD2A100P	(2)	500	
	22	10	10.2	G	70	0.8	0.18	EEEHD2A220P	(2)	500	

If Part number exceeds 12 digits, voltage code is abbreviated as follows; 0J → J, 1A → A, 1C → C, 1E → E, 1V → V,

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

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