Surface Mount Type Aluminum Electrolytic Capacitors

Japan

Series: **HA**
Type: **V**

Surface mount type | Long life

HA 105 °C 1000Hr
↑
S 85 °C 1000Hr

EE030

■ Features

- Lifetime: 105 °C 1000 h
- 5.5 mm height (≦ φ6.3)

■ Recommended Applications

- AV (TV, Video, Audio), Personal Computer, Home appliance

■ Specifications

Operating Temp. Range	–40 to +105 °C
Rated W.V. Range	6.3 to 100 V.DC
Nominal Cap. Range	0.1 to 470 µF
Capacitance Tolerance	±20 % (120 Hz/+20 °C)
DC Leakage Current	I ≦ 0.01 CV or 3 (µA) after 2 minutes (Whichever, greater)

Dissipation Factor (120 Hz/+20 °C) (max.)

W.V. (V)		6.3	10	16	25	35	50	63	100
D.F.	φ4~φ6.3	0.30	0.22	0.16	0.14	0.12	0.12	—	—
	φ8~φ10	0.35	0.26	0.20	0.16	0.14	0.12	0.18	0.18

Characteristics at Low Temperature (Impedance ratio at 120 Hz)

W.V. (V)	6.3	10	16	25	35	50	63	100
–25/+20 °C	4	3	2	2	2	2	3	3
–40/+20 °C	8	6	4	4	3	3	4	4

Endurance

After applying rated working voltage for 1000 hours at +105 °C and then being stabilized at +20 °C, capacitors shall meet the following limits

Capacitance change	±20 % of initial measured value
D.F.	≦ 200 % of initial specified value
DC leakage current	≦ Initial specified value

Shelf Life

After storage for 1000 hours at +105 °C with no voltage applied and then being stabilized at +20 °C, capacitor shall meet the limits specified in “Endurance”.
(With voltage treatment)

Resistance to Soldering Heat

After reflow soldering (Refer to page 20 for recommendable temperature profile.) and then being stabilized at +20 °C, capacitor shall meet the following limits.

Capacitance change	±10 % of initial measured value
D.F.	≦ Initial specified value
DC leakage current	≦ Initial specified value

■ Explanation of Part Numbers

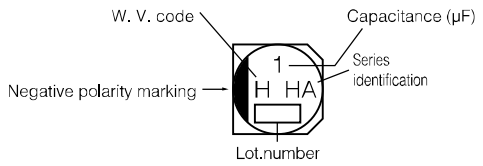
1	2	3	4	5	6	7	8	9	10	11
E	E	V	H	A						
Product Code			Series Code		R.W. Voltage Code		N.Capacitance Value Code			Packaging

Taped on reel		
R	W=12 mm	ϕ4, ϕ5 (B,C)
S	W=12 mm	ϕ5 : P1 = 8 mm
P	W=16 mm	ϕ6.3, ϕ8×6.2 (D,E)
P	W=24 mm	ϕ8×10.2, ϕ10×10.2 (F,G)

P1 : Pitch dimension between capacitors on taping

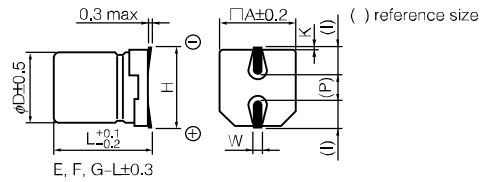
■ Marking

Example:
50 V 1 µF (Polarized)



W.V.code									
V	4	6.3	10	16	25	35	50	63	100
code	g	j	A	C	E	V	H	J	2A

■ Dimensions in mm (not to scale)



(mm)

	D	L	A	H	I	W	P	K
B	4.0	5.4	4.3	5.5 MAX	1.8	0.65±0.1	1.0	$0.35^{+0.15}_{-0.20}$
C	5.0	5.4	5.3	6.5 MAX	2.2	0.65±0.1	1.5	$0.35^{+0.15}_{-0.20}$
D	6.3	5.4	6.6	7.8 MAX	2.6	0.65±0.1	1.8	$0.35^{+0.15}_{-0.20}$
E	8.0	6.2	8.3	9.5 MAX	3.4	0.65±0.1	2.2	$0.35^{+0.15}_{-0.20}$
F	8.0	10.2	8.3	10.0 MAX	3.4	0.90±0.2	3.1	0.70±0.2
G	10.0	10.2	10.3	12.0 MAX	3.5	0.90±0.2	4.6	0.70±0.2

■ Case size/Ripple current

● Polarized

(mA) r.m.s. (120 Hz/+105 ˚C)

Cap. (µF) \ W.V. (V)	6.3 (0J)		10 (1A)		16 (1C)		25 (1E)		35 (1V)		50 (1H)		63 (1J)		100 (2A)	
0.1 (R10)											B	1				
0.22 (R22)											B	2				
0.33 (R33)											B	3				
0.47 (R47)											B	5				
1.0 (1R0)											B	10				
2.2 (2R2)											B	16				
3.3 (3R3)											B	16			E	30
4.7 (4R7)							B	22	B	22	C	23			F	50
10 (100)					B	28	C	28	C	30	D	35	E	25	F	55
22 (220)	B	29			C	39	D	55	D	60	E	70	F	30	G	60
33 (330)			C	43			D	65	E	84	F	91	G	45	G	65
47 (470)	C	46			D	70	E	91	F	98	G	100	G	50		
100 (101)	D	71	E	110			F	130	G	160						
220 (221)			F	160	G	210	G	190								
330 (331)	F	230			G	230									Size code	Ripple current
470 (471)			G	270												

( ) shows W.V. and capacitance code.