

CUSTOMER : ROPLA

客 戶
(PE48AA2)

NO : 0245

編號

APPROVE SHEET

承 認 書

P A R T S ALUMINUM ELECTROLYTIC CAPACITOR

品 名 : 鋁 質 電 解 電 容 器

USER NO

客戶產品編號 : _____

CODE NO

凱美產品編號 : **HX SERIES**

SIGNATURE (承認欄)

JAMICON

KAIMEI ELECTRONIC CORP. (FONG TIEN FACTORY)

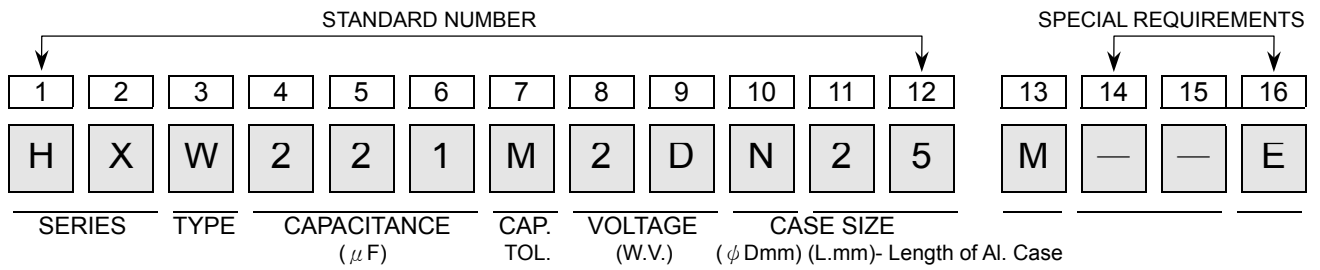
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	CHECKER	DESIGNER
	確 認	作 成
	經理 23 日 册 伍獻榮	技術部 23 日 册 許雅雯

Parts Number System



Code	Type	Description	CAP. (μF)	Code	Tolerance (%)	Code	Voltage (W.V.)	Code	Diameter (φ)	Code	Length (L)	code	Code	Description	
R	Radial	Bulk	0.1	0R1	+10	K	4	0G	3	A	25	25	W	Without Sleeve	
			0.22	R22	-10		6.3	0J	3.8	S	11.5	BB			
P		Taping (Ammo Pack)	0.33	R33	+15	L	10	1A	4	C	12.5	BC	1~9	Customer Assign Brand	
			0.47	R47	-15		13	1P	5	D	31.5	DB	A~Z		
C		Lead Cut	1	010	+20	M	16	1C	6	W	35.5	DF	a~		
			2.2	2R2	-20		20	1D	6.3	E	100	1H			
F		Lead Forming Cut	3.3	3R3	+100	P	25	1E	7	Y	110	1A	Code	Description	
			4.7	4R7	-0		35	1V	8	F	115	1K			
B		Lead Forming Only	10	100	+30	Q	40	1G	10	G	120	1B	E	PET Sleeve	
			22	220	-10		50	1H	12	H	121	1M			
Y	Lead Snap in	33	330	+20	R	63	1J	12.5	I	130	1C				
		47	470	-0		80	1K	13	J	131	1P				
W	Lug	Snap in Terminal	100	101	+50	T	100	2A	16	K	140	1D			
			220	221	-10		125	2B	18	L	144	1Q			
G		G Type Terminal	330	331	+75	U	160	2C	20	M	150	1E			
			470	471	-10		180	2M	22	N	155	1N			
V		V Type Terminal	1000	102	+20	V	200	2D	25	O	157	1R			
			2200	222	-10		250	2E	30	P	160	1F			
S		Screw Terminal Type	3300	332	+20	H	315	2F	35	Q	170	1G			
			4700	472	-5		330	2U	40	R	180	1I			
M		Chip	Surface Mount Type	10000	103	+30	F	350	2V	51	V	190	1J		
				22000	223	-0		400	2G	64	1	196	1S		
	33000			333	+100	W	450	2W	77	2	215	1L			
	47000			473	-10		500	2H	90	3	236	1T			

Series	HXW	Reference standard	JIS C5101-4
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1. Scope

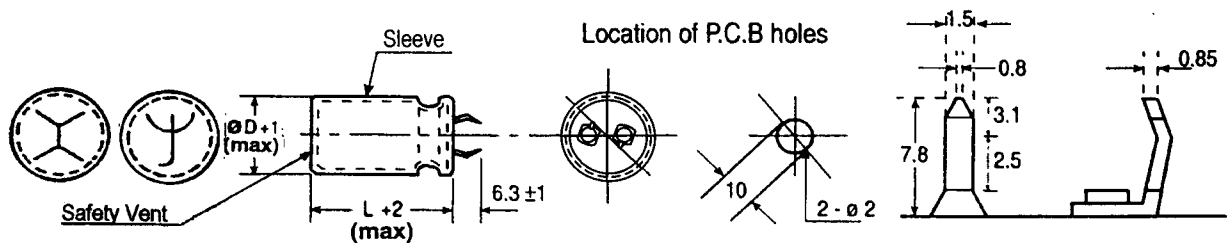
This specification applies to aluminium electrolytic capacitor, used in electronic equipment.

Type : Large

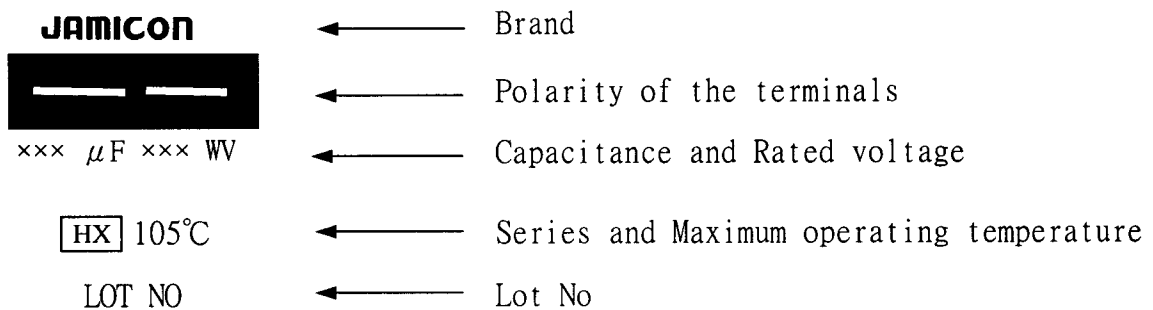
2. Electrical characteristics

- (A) Operating temperature range : - 40 ~ + 105 °C
- (B) Capacitance tolerance : - 20 ~ + 20 % 20°C 120Hz
- (C) Capacitance : 39 ~ 1500 μF
- (D) Rated working voltage (WV) : DC 200 ~ 450 V
- (E) Surge voltage (SV) : Values in Table 1 P (7)
- (F) Leakage current : Values in Table 2 P (7) or less
- (G) Dissipation Factor (tan δ) : Values in Table 3 P (7) or less
- (H) Low temperature stability : Values in Table 4 P (7) or less

3. Dimensions and materials



4. Marking



KAIMEI ELECTRONIC CORP	Chart number	HX080901AA
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* HX□ * (□) Terminal Type Case size : D x L (mm)
 Max ripple current : A (rms) 105°C 120Hz

μF	Code	V(Code)	200 (2D)				250 (2E)			
			22	25	30	35	22	25	30	35
150	151						25			
							0.62			
180	181						30	25		
							0.73	0.70		
220	221		25				35	30		
			0.76				0.86	0.83		
270	271		30	25			40	30		
			0.90	0.86			1.00	0.92		
330	331		35	30			45	35	25	
			1.05	1.01			1.16	1.07	1.03	
390	391		35	30	25		50	40	30	
			1.15	1.10	1.13		1.32	1.23	1.20	
470	471		45	35	25			45	35	30
			1.40	1.29	1.24			1.42	1.39	1.40
560	561		50	40	30			50	40	35
			1.59	1.48	1.44			1.62	1.58	1.60
680	681			45	35	30			45	40
				1.70	1.67	1.67			1.83	1.85
820	821			50	40	30			50	45
				1.94	1.92	1.83			2.09	2.11
1000	102				45	35				50
					2.22	2.15				2.43
1200	122				50	40				
					2.53	2.44				
1500	152					40				L(mm)
						2.85				R.C.

* HX □ * (□) Terminal Type Case size : D x L (mm)
 Max ripple current : A (rms) 105°C 120Hz

μF	Code	V(Code)	400 (2G)				450 (2W)				
			22	25	30	35	22	25	30	35	
39	390						25				
							0.32				
47	470						30	25			
							0.38	0.36			
56	560		25				35	30			
			0.37				0.43	0.43			
68	680		30				40	30			
			0.44				0.50	0.46			
82	820		35	25			40	35	25		
			0.51	0.47			0.55	0.54	0.51		
100	101		40	30			50	40	30		
			0.60	0.55			0.67	0.62	0.60		
120	121		45	35	25			45	35	30	
			0.70	0.64	0.62			0.72	0.69	0.70	
150	151		50	40	30	25		50	40	30	
			0.82	0.76	0.74	0.75		0.83	0.81	0.78	
180	181			45	35	30			45	35	
				0.87	0.85	0.86			0.93	0.91	
220	221			50	40	30			50	40	
				1.00	0.99	0.94			1.07	1.05	
270	271				45	35					45
					1.15	1.11					1.21
330	331				50	40					
					1.32	1.28					
390	391					45					
						1.45					
470	471					50					L(mm)
						1.66					R.C.

RIPPLE CURRENT COEFFICIENTS

Temperature(°C)	40	60	70	85	105
Multiplier	2.50	2.20	2.00	1.80	1.00

Frequency (Hz)	60	120	400	1k	10k
W.V.	Multiplier				
≥ 160V	0.80	1.00	1.10	1.30	1.40

6. Load life test

After 10000 hours application of W.V. and 105°C ripple current value, the capacitor shall meet the following limits.

(DC + ripple peak voltage \leq rate working voltage)

- (A) Capacitance change : $\leq \pm 20$ % of initial value
- (B) Dissipation factor : ≤ 175 % of initial specified value
- (C) Leakage current : \leq initial specified value

7. Shelf life test

The capacitor without rated voltage at a temperature of 105°C for 1000 hours and then through the aging treatment (reference JIS C5101-4 4.1), should do final measurements, the values are as following :

- (A) Capacitance change : $\leq \pm 20$ % of initial value
- (B) Dissipation factor : ≤ 175 % of initial specified value
- (C) Leakage current : \leq initial specified value

8. Low temperature storage test

The capacitor without rated voltage at the lowest operation temperature 16 hours, after two hours in room temperature, should do final measurements, the values are as following :

- (A) Capacitance change : $\leq \pm 10$ % of initial value
- (B) Dissipation factor : \leq initial specified value
- (C) Leakage current : \leq initial specified value

9. Solderability

Capacitor lead wire dipping in flux, and then dip in 245 \pm 3°C, solder liquid for 3 \pm 0.5 seconds, the substance is above the liquid solder 2mm, the dipping lead must be adherent 95% fresh tin at least.

10. Resistance to soldering heat

Put capacitor lead wire to dip 260 \pm 5°C in solder liquor away the body 2mm, after 10 \pm 1 seconds taken out, after two hours in room temperature, should do final measurements, the values are following:

- (A) Capacitance change : $\leq \pm 10$ % of initial value
- (B) Dissipation factor : \leq initial specified value
- (C) Leakage current : \leq initial specified value
- (D) Visual : NO damage

11. Surge test

The capacitor shall be applied the surge voltage connected with the 1 k Ω resistor in room temperature, and shall be applied the surge voltage 1000 cycle, each for 30 seconds charge and 5 minutes 30 seconds discharge, the final test values should be as following:

- (A) Capacitance change : $\leq \pm 15\%$ of initial value
- (B) Dissipation factor : \leq initial specified value
- (C) Leakage current : \leq initial specified value
- (D) Visual : NO damage

12. Safety vent

(A) Test condition (DC method)

Reverse voltage shall be applied. then current is as below:

Diameter ≤ 22.4 mm 1 A DC.

Diameter > 22.4 mm 10 A DC.

(B) Criteria

- (a) Safety vent shall be operated.
- (b) Emission of flame shall not be found before and after venting.
- (c) Terminal, lead wire, metal chip and so on shall not be flown apart and case shall not be separated before and after venting.
- (d) Sealing part and case shall not be separated before and after venting.
- (e) When capacitor is soldered, some space must be kept above the vent as per following list.

ϕD (mm)	≤ 16	18~35	≥ 40
Space (mm)	2 min	3 min	5 min

Table 1

Surge voltage

W.V.	200	250	400	450
S.V.	250	300	450	500

Table 2

Leakage current

(20°C)

200 ~ 450 VDC
$I \leq 0.02CV$ or 3 (mA)
Whichever is smaller after 5 minutes. (I:Leakage Current(μ A) C:Rated capacitance (μ F) V:Working Voltage(V).)

Table 3

Dissipation Factor

(120Hz 20°C)

Rated Voltage(V)	200	250	400	450
$\tan \delta$	0.15	0.15	0.25	0.25

Table 4

Low temperature stability

Impedance ratio at 120Hz		
Rated Voltage (V)	200~250	400~450
- 25 °C / + 20 °C	4	6