

Alchip™-MAK Series



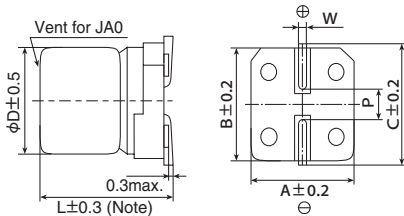
- Suitable for small and low profile product such as the car audio and electronics
- Non solvent resistant type
- RoHS2 Compliant

◆ SPECIFICATIONS

Items	Characteristics						
Category	-40 to +105°C						
Temperature Range	-40 to +105°C						
Rated Voltage Range	6.3 to 50V _{dc}						
Capacitance Tolerance	±20% (M) (at 20°C, 120Hz)						
Leakage Current	I=0.01CV or 3μA, whichever is greater. Where, I : Max. leakage current (μA), C : Nominal capacitance (μF), V : Rated voltage (V) (at 20°C after 2 minutes)						
Dissipation Factor (tan δ)	Rated voltage (V _{dc})	6.3V	10V	16V	25V	35V	50V
	tan δ (Max.)	0.30	0.26	0.22	0.16	0.13	0.12
Low Temperature Characteristics (Max. Impedance Ratio)	Rated voltage (V _{dc})	6.3V	10V	16V	25V	35V	50V
	Z(-25°C)/Z(+20°C)	4	3	2	2	2	2
	Z(-40°C)/Z(+20°C)	8	5	4	3	3	3
Endurance	The following specifications shall be satisfied when the capacitors are restored to 20°C after the rated voltage is applied for 1,000 hours at 105°C.						
	Size code	D55 to F55			H63 to JA0		
	Capacitance change	≤ ±30% of the initial value			≤ ±20% of the initial value		
	D.F. (tan δ)	≤200% of the initial specified value			≤200% of the initial specified value		
	Leakage current	≤The initial specified value			≤The initial specified value		
Shelf Life	The following specifications shall be satisfied when the capacitors are restored to 20°C after exposing them for 1,000 hours at 105°C without voltage applied. Before the measurement, the capacitor shall be preconditioned by applying voltage according to Item 4.1 of JIS C 5101-4.						
	Size code	D55 to F55			H63 to JA0		
	Capacitance change	≤ ±30% of the initial value			≤ ±20% of the initial value		
	D.F. (tan δ)	≤200% of the initial specified value			≤200% of the initial specified value		
	Leakage current	≤The initial specified value			≤The initial specified value		

◆ DIMENSIONS [mm]

- Terminal Code : A



Note : L ± 0.5 for H63 to JA0

Size code	D	L	A	B	C	W	P
D55	4	5.2	4.3	4.3	5.1	0.5 to 0.8	1.0
E55	5	5.2	5.3	5.3	5.9	0.5 to 0.8	1.4
F55	6.3	5.2	6.6	6.6	7.2	0.5 to 0.8	1.9
H63	8	6.3	8.3	8.3	9.0	0.5 to 0.8	2.3
HA0	8	10.0	8.3	8.3	9.0	0.7 to 1.1	3.1
JA0	10	10.0	10.3	10.3	11.0	0.7 to 1.1	4.5

◆ MARKING

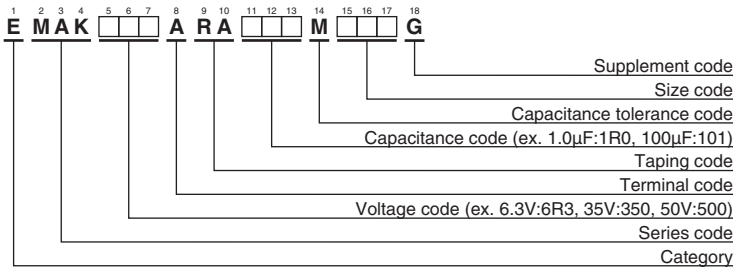
EX) 10V100μF



- Rated voltage symbol

Rated voltage (V _{dc})	Symbol
6.3	j
10	A
16	C
25	E
35	V
50	H

◆ PART NUMBERING SYSTEM



Please refer to "Product code guide (surface mount type)"

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◆STANDARD RATINGS

WV (V _{dc})	Cap (μF)	Size Code	tan δ	Part No.	WV (V _{dc})	Cap (μF)	Size Code	tan δ	Part No.
6.3	22	D55	0.30	EMAK6R3ARA220MD55G	25	4.7	D55	0.16	EMAK250ARA4R7MD55G
	33	E55	0.30	EMAK6R3ARA330ME55G		10	E55	0.16	EMAK250ARA100ME55G
	47	E55	0.30	EMAK6R3ARA470ME55G		22	F55	0.16	EMAK250ARA220MF55G
	100	F55	0.30	EMAK6R3ARA101MF55G		33	F55	0.16	EMAK250ARA330MF55G
	220	H63	0.30	EMAK6R3ARA221MH63G		47	H63	0.16	EMAK250ARA470MH63G
	330	H63	0.30	EMAK6R3ARA331MH63G		100	HA0	0.16	EMAK250ARA101MHA0G
	470	HA0	0.30	EMAK6R3ARA471MHA0G		330	JA0	0.16	EMAK250ARA331MJA0G
	1,000	JA0	0.30	EMAK6R3ARA102MJA0G		35	4.7	D55	0.13
10	22	E55	0.26	EMAK100ARA220ME55G	10		E55	0.13	EMAK350ARA100ME55G
	33	E55	0.26	EMAK100ARA330ME55G	22		F55	0.13	EMAK350ARA220MF55G
	47	F55	0.26	EMAK100ARA470MF55G	33		H63	0.13	EMAK350ARA330MH63G
	100	F55	0.26	EMAK100ARA101MF55G	47		HA0	0.13	EMAK350ARA470MHA0G
	220	H63	0.26	EMAK100ARA221MH63G	100		JA0	0.13	EMAK350ARA101MJA0G
	330	HA0	0.26	EMAK100ARA331MHA0G	220		JA0	0.13	EMAK350ARA221MJA0G
	470	JA0	0.26	EMAK100ARA471MJA0G	50		1.0	D55	0.12
	16	10	D55	0.22		EMAK160ARA100MD55G	2.2	D55	0.12
22		E55	0.22	EMAK160ARA220ME55G		3.3	D55	0.12	EMAK500ARA3R3MD55G
47		F55	0.22	EMAK160ARA470MF55G		4.7	E55	0.12	EMAK500ARA4R7ME55G
100		H63	0.22	EMAK160ARA101MH63G		10	F55	0.12	EMAK500ARA100MF55G
220		HA0	0.22	EMAK160ARA221MHA0G		22	H63	0.12	EMAK500ARA220MH63G
330		HA0	0.22	EMAK160ARA331MHA0G		33	HA0	0.12	EMAK500ARA330MHA0G
470		JA0	0.22	EMAK160ARA471MJA0G		47	HA0	0.12	EMAK500ARA470MHA0G
						100	JA0	0.12	EMAK500ARA101MJA0G