

## Alchip™-MHU Series

- Long life with a new composite sealing structure
- Endurance : 5,000 hours at 125°C
- For automobile modules and other high temperature applications
- High vibration resistance (40G) in combination with vibration resistant structure
- High temperature reflow soldering (Peak temp.:260°C/1 cycle only)
- Solvent resistant type
- RoHS2 Compliant
- AEC-Q200 compliant : Please contact Chemi-Con for more details.
- Adaptable for Immersion cooling (70°C max.)

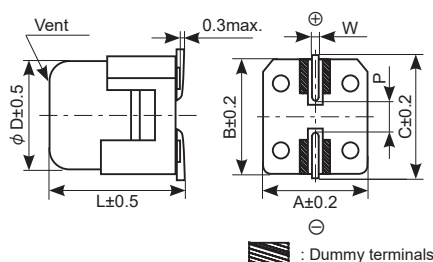
**This Engineering bulletin is issued for Engineering sample.**  
**There is possibility to stop mass production due to market situation changed, and product specifications in this bulletin are subject to change without notice.**

## ◆ SPECIFICATIONS

Items	Characteristics			
Category	-40 to +125°C			
Temperature Range				
Rated Voltage Range	35V <sub>dc</sub>			
Capacitance Tolerance	±20% (M) (at 20°C, 120Hz)			
Leakage Current	I=0.01CV 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 <sub>dc</sub> )	25V	35V	(at 20°C, 120Hz)
	tan δ (Max.)	0.16	0.14	
Low Temperature Characteristics (Max. Impedance Ratio)	Rated voltage (V <sub>dc</sub> )	25V	35V	(at 120Hz)
	Z(-25°C)/Z(+20°C)	2	2	
	Z(-40°C)/Z(+20°C)	3	3	
Endurance1 (Normal atmosphere)	The following specifications shall be satisfied when the capacitors are restored to 20°C after the rated voltage is applied for 5,000 hours at 125°C.			
	Capacitance change	≤ ±30% of the initial value		
	D.F. (tan δ)	≤ 300% of the initial specified value		
	Leakage current	≤ The initial specified value		
Endurance2 (Normal atmosphere)	The following specifications shall be satisfied when the capacitors are restored to 20 °C after exposing them for 200 hours at 150°C without voltage applied and the rated voltage is applied for 4,000 hours at 125°C .			
	Capacitance change	≤ ±30% of the initial value		
	D.F. (tan δ)	≤ 300% of the initial specified value		
	Leakage current	≤ The initial specified value		
Shelf Life (Normal atmosphere)	The following specifications shall be satisfied when the capacitors are restored to 20°C after exposing them for 1,000 hours at 125°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.			
	Capacitance change	≤ ±30% of the initial value		
	D.F. (tan δ)	≤ 300% of the initial specified value		
	Leakage current	≤ The initial specified value		
Vibration	The following specifications shall be satisfied when the capacitors are restored to 20°C after subjected to vibration test (vibration conditions shown below) at room temperature (15 to 35°C).			
	Appearance	No significant damage		
	Capacitance change	≤ ±20% of the initial value		
	D.F. (tan δ)	≤ 200% of the initial specified value		
	Leakage current	≤ The initial specified value		
	Conditions			
	Vibration frequency range	10 to 2,000Hz		
	Amplitude	5mm (Peak to peak)		
	Acceleration	40G max.		
	Sweep rate	10 to 2000 to 10Hz in about 20 minutes		
	Direction and period of motion	2 hours in each of 3 mutually perpendicular directions (total of 6 hours)		

## ◆ DIMENSIONS [mm]

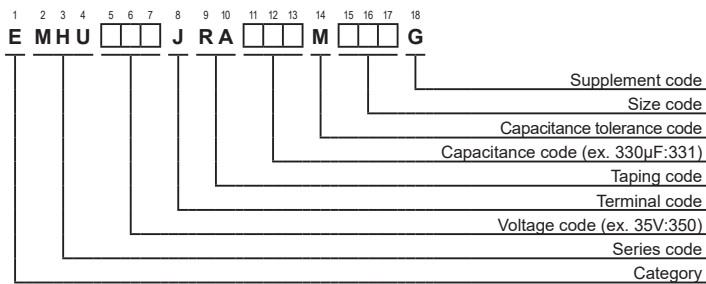
- Terminal Code : J (Vibration resistant structure)



Size code	D	L	A	B	C	W	P
JA0	10	10.5	10.4	10.4	11.7	0.7 to 1.1	4.5

## Alchip™-MHU Series

## ◆ PART NUMBERING SYSTEM



## ◆ MARKING

EX) 35V330μF



## ● Rated voltage symbol

Rated voltage(V <sub>dc</sub> )	25	35
Symbol	E	V

## ◆ STANDARD RATINGS

WV (V <sub>dc</sub> )	Cap (μF)	Size code	ESR (Ωmax. /100kHz)		Rated ripple current (mA <sub>rms</sub> / 125°C, 100kHz)	Part No.
			20°C	-40°C		
25	470	JA0	0.15	2.0	800	EMHU250JRA471MJA0G
	560	JA0	0.15	2.0	800	EMHU250JRA561MJA0G
35	330	JA0	0.15	2.0	800	EMHU350JRA331MJA0G
	470	JA0	0.15	2.0	800	EMHU350JRA471MJA0G

## ◆ About specified immersion cooling fluids

Evaluated and confirmed by the following fluids. Please contact us for details.

Fluorine	3M FC-40
HydroCarbon	Shell S3X
	Exxon Mobile SpectraSyn Max3.5

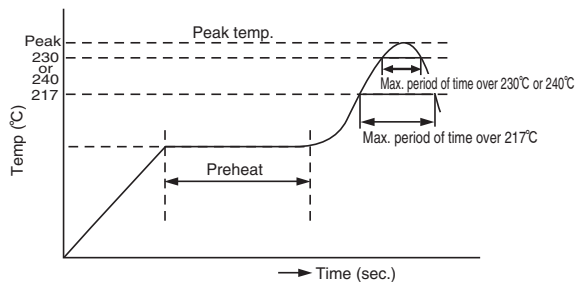
## ◆ RECOMMENDED REFLOW SOLDERING CONDITIONS

The following conditions are recommended for air convection and infrared reflow soldering on the SMD products on to a glass epoxy circuit boards by cream solder. The dimensions of the glass epoxy boards with resist are 90×50×0.8mm.

The temperatures shown are the surface temperature values on the top of the can and on the capacitor terminals.

When performing reflow twice, be sure to perform the second reflow after confirming that the capacitor has cooled down to room temperature (5 to 35°C) after the first reflow.

## ● Recommended soldering heat conditions



Size Code	Preheat	Time maintained above 217°C	Time maintained above 230°C	Peak temp.	Reflow number
JA0	150 to 180°C	90 sec. max.	60 sec. max.	260°C max.	1-cycle only
	120 sec. max.	60 sec. max.	30 sec. max.	245°C max.	2-cycles allowed