

Alchip™-MHS Series



- Downsizing, High capacitance
- Endurance : 5,000 hours at 125°C
- For high temperature and high reliability applications (Basestation equipment, etc)
- High temperature reflow soldering (3 times)
- Solvent resistant type
- Vibration resistant structure
- RoHS2 Compliant
- AEC-Q200 compliant : Please contact Chemi-Con for more details, test data, information.

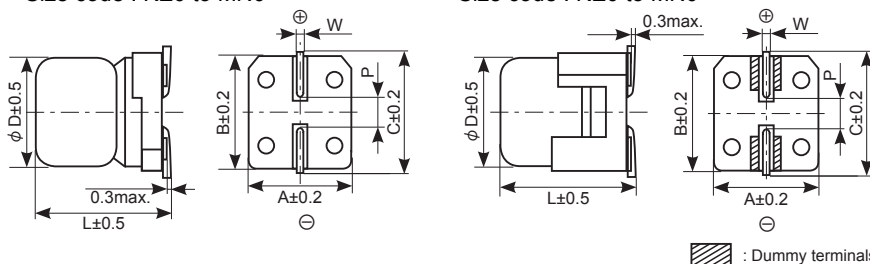
◆ SPECIFICATIONS

Items	Characteristics							
Category								
Temperature Range	-40 to +125°C							
Rated Voltage Range	16 to 100V _{dc}							
Capacitance Tolerance	±20% (M) (at 20°C, 120Hz)							
Leakage Current	I = 0.03CV 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})	16V	25V	35V	50V	63V	80V	100V
	tan δ (Max.)	0.18	0.14	0.14	0.14	0.14	0.12	0.10
	When nominal capacitance exceeds 1,000µF, add 0.02 to the value above for each 1,000µF increase. (at 20°C, 120Hz)							
Low Temperature Characteristics (Max. Impedance Ratio)	Rated voltage (V _{dc})	16V	25V	35V	50V	63V	80V	100V
	Z(-25°C)/Z(+20°C)	3	2	2	2	2	2	2
	Z(-40°C)/Z(+20°C)	6	4	3	3	3	3	3
(at 120Hz)								
Endurance	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						
Shelf Life	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						

◆ DIMENSIONS [mm]

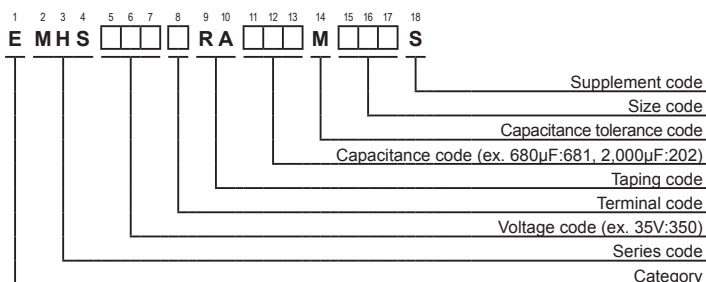
- Terminal Code : A
- Size code : KE0 to MNO

- Terminal Code : G(Vibration resistant structure)
- Size code : KE0 to MNO



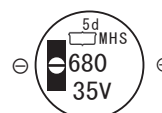
Size code	D	L	A	B	C	W	P
KE0	12.5	13.5	13.0	13.0	13.7	1.0 to 1.3	4.2
KG5	12.5	16.0	13.0	13.0	13.7	1.0 to 1.3	4.2
LH0	16	16.5	17.0	17.0	18.0	1.0 to 1.3	6.5
LN0	16	21.5	17.0	17.0	18.0	1.0 to 1.3	6.5
MH0	18	16.5	19.0	19.0	20.0	1.0 to 1.3	6.5
MNO	18	21.5	19.0	19.0	20.0	1.0 to 1.3	6.5

◆ PART NUMBERING SYSTEM



◆ MARKING

EX) 35V680µF



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◆ STANDARD RATINGS

WV (Vdc)	Cap (μF)	Size code	ESR (Ω max. /100kHz)		Rated ripple current (mArms/125°C, 100kHz)	Part No.
			20°C	-40°C		
16	1,500	KE0	0.087	1.1	1,060	EMHS160□RA152MKE0S
	2,000	KG5	0.070	0.84	1,160	EMHS160□RA202MKG5S
	2,700	LH0	0.057	0.59	1,900	EMHS160□RA272MLH0S
	3,600	MH0	0.055	0.44	2,000	EMHS160□RA362MMH0S
	4,700	LN0	0.037	0.39	2,520	EMHS160□RA472MLN0S
	6,200	MN0	0.036	0.28	2,570	EMHS160□RA622MMN0S
25	1,000	KE0	0.087	1.1	1,060	EMHS250□RA102MKE0S
	1,300	KG5	0.070	0.84	1,160	EMHS250□RA132MKG5S
	1,800	LH0	0.057	0.59	1,900	EMHS250□RA182MLH0S
	2,400	MH0	0.055	0.44	2,000	EMHS250□RA242MMH0S
	3,300	LN0	0.037	0.39	2,520	EMHS250□RA332MLN0S
	4,300	MN0	0.036	0.28	2,570	EMHS250□RA432MMN0S
35	680	KE0	0.087	1.1	1,060	EMHS350□RA681MKE0S
	820	KG5	0.070	0.84	1,160	EMHS350□RA821MKG5S
	1,200	LH0	0.057	0.59	1,900	EMHS350□RA122MLH0S
	1,500	MH0	0.055	0.44	2,000	EMHS350□RA152MMH0S
	2,000	LN0	0.037	0.39	2,520	EMHS350□RA202MLN0S
	2,400	MN0	0.036	0.28	2,570	EMHS350□RA242MMN0S
50	360	KE0	0.16	2.0	880	EMHS500□RA361MKE0S
	470	KG5	0.12	1.5	970	EMHS500□RA471MKG5S
	560	LH0	0.088	0.94	1,640	EMHS500□RA561MLH0S
	750	MH0	0.085	0.78	1,720	EMHS500□RA751MMH0S
	1,000	LN0	0.056	0.61	2,230	EMHS500□RA102MLN0S
	1,300	MN0	0.053	0.45	2,300	EMHS500□RA132MMN0S
63	240	KE0	0.17	2.5	920	EMHS630□RA241MKE0S
	330	KG5	0.13	1.8	1,030	EMHS630□RA331MKG5S
	430	LH0	0.098	1.3	1,640	EMHS630□RA431MLH0S
	560	MH0	0.091	0.98	1,720	EMHS630□RA561MMH0S
	680	LN0	0.063	0.80	2,230	EMHS630□RA681MLN0S
	910	MN0	0.059	0.59	2,300	EMHS630□RA911MMN0S
80	180	KE0	0.17	2.5	920	EMHS800□RA181MKE0S
	240	KG5	0.13	1.8	1,030	EMHS800□RA241MKG5S
	270	LH0	0.098	1.3	1,640	EMHS800□RA271MLH0S
	360	MH0	0.091	0.98	1,720	EMHS800□RA361MMH0S
	430	LN0	0.063	0.80	2,230	EMHS800□RA431MLN0S
	560	MN0	0.059	0.59	2,300	EMHS800□RA561MMN0S
100	110	KE0	0.17	2.5	920	EMHS101□RA111MKE0S
	150	KG5	0.13	1.8	1,030	EMHS101□RA151MKG5S
	160	LH0	0.098	1.3	1,640	EMHS101□RA161MLH0S
	200	MH0	0.091	0.98	1,720	EMHS101□RA201MMH0S
	240	LN0	0.063	0.80	2,230	EMHS101□RA241MLN0S
	330	MN0	0.059	0.59	2,300	EMHS101□RA331MMN0S

□ :Enter the appropriate terminal code.

◆ RATED RIPPLE CURRENT MULTIPLIERS

● Frequency Multipliers

Capacitance (μF)	Frequency (Hz)	120	1k	10k	100k
10 to 200		0.40	0.75	0.90	1.00
240 to 560		0.50	0.85	0.94	1.00
680 to 2,000		0.60	0.87	0.95	1.00
2,400 to 4,300		0.75	0.90	0.95	1.00
4,700 to 6,200		0.85	0.95	0.98	1.00

The endurance of capacitors is reduced with internal heating produced by ripple current at the rate of halving the lifetime with every 5°C rise. When long life performance is required in actual use, the rms ripple current has to be reduced.

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◆ RECOMMENDED REFLOW SOLDERING CONDITIONS

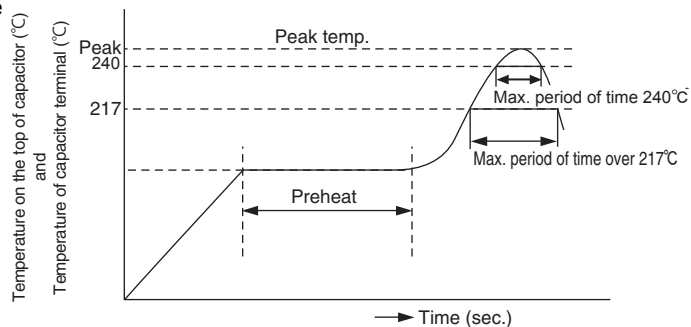
The following conditions are recommended for air convection and infrared reflow soldering on the SMD products on to a glass epoxy circuit boards by cream solder. The dimensions of the glass epoxy boards with resist are 90L×50W×0.8mm for KE0 to KG5 case code SMD capacitors and 180L×90W×0.8mm for LH0 to MN0 case codes SMD capacitors.

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

Reflow should be performed three times or less.

Please ensure that the capacitor became cold enough to the room temperature (5 to 35°C) before the second and the third reflow.

● Reflow Profile



Size Code	Preheat	Time maintained above 217°C	Time maintained above 240°C	Peak temp.	Reflow number
KE0 to MN0	150 to 180°C 120 sec. max.	70 sec. max.	20 sec. max.	245°C max.	3-cycle allowed