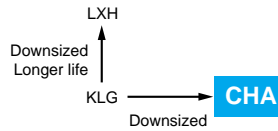


CHA Series

- Doesn't spark with DC over voltage
- Downsized from current KLG series
- Endurance with ripple current : 2,000hours at 105°C
- Non solvent resistant type
- RoHS Compliant

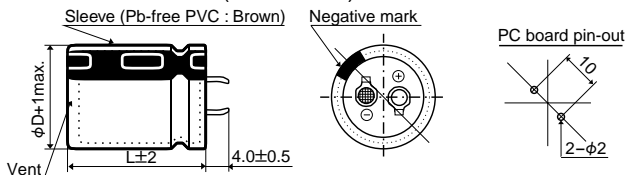


◆ SPECIFICATIONS

Items	Characteristics	
Category	-25 to +105°C	
Temperature Range		
Rated Voltage Range	200 to 450V _{dc}	
Capacitance Tolerance	±20% (M) (at 20°C, 120Hz)	
Leakage Current	$I \leq 3\sqrt{CV}$ Where, I : Max. leakage current (µA), C : Nominal capacitance (µF), V : Rated voltage (V _{dc}) (at 20°C after 5 minutes)	
Dissipation Factor (tanδ)	200V _{dc} : 0.15 max. (0.20 max. for φD=35mm) 400V _{dc} : 0.15 max. (at 20°C, 120Hz)	
Low Temperature Characteristics (Max.Impedance Ratio)	Rated Voltage (V _{dc})	200 to 450V
	Z(-25°C) / Z(+20°C)	4 (at 120Hz)
ESL	50nH max. (at 20°C, 1MHz)	
Endurance	The following specifications shall be satisfied when the capacitors are restored to 20°C after subjected to DC voltage with the rated ripple current is applied for 2,000 hours at 105°C.	
	Capacitance change	≤±20% of the initial value
	D.F. (tanδ)	≤200% 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 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.	
	Capacitance change	≤±15% of the initial value
	D.F. (tanδ)	≤150% of the initial specified value
	Leakage current	≤The initial specified value

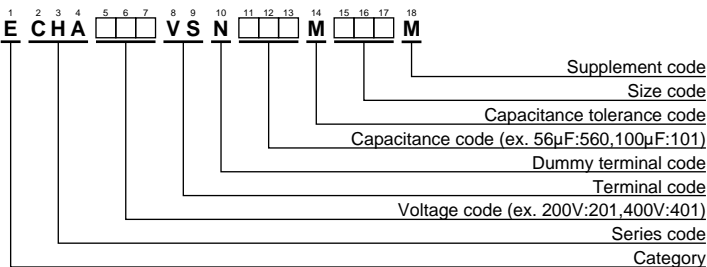
◆ DIMENSIONS [mm]

- Terminal Code : VS (φ22 to φ35)



The standard design has no plastic disc.

◆ PART NUMBERING SYSTEM



Please refer to "Product code guide (snap-in type)"

◆ RATED RIPPLE CURRENT MULTIPLIERS

- Frequency Multipliers

Frequency (Hz)	50	120	300	1k	10k	50k
200 to 450V _{dc}	0.77	1.00	1.16	1.30	1.41	1.43

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.

◆STANDARD RATINGS

WV (V _{dc})	Cap (μF)	Case size φD×L(mm)	tanδ	Rated ripple current (Arms/105°C,120Hz)	Part No.	
200	180	22×20	0.15	0.82	ECHA201VSN181MP20M	
	220	22×20	0.15	0.90	ECHA201VSN221MP20M	
	270	22×25	0.15	1.02	ECHA201VSN271MP25M	
	330	22×30	0.15	1.20	ECHA201VSN331MP30M	
	330	25.4×25	0.15	1.20	ECHA201VSN331MQ25M	
	390	22×30	0.15	1.35	ECHA201VSN391MP30M	
	390	25.4×25	0.15	1.35	ECHA201VSN391MQ25M	
	470	22×35	0.15	1.45	ECHA201VSN471MP35M	
	470	25.4×30	0.15	1.45	ECHA201VSN471MQ30M	
	470	30×25	0.15	1.47	ECHA201VSN471MR25M	
	560	22×40	0.15	1.62	ECHA201VSN561MP40M	
	560	25.4×30	0.15	1.60	ECHA201VSN561MQ30M	
	560	30×25	0.15	1.60	ECHA201VSN561MR25M	
	680	25.4×35	0.15	1.82	ECHA201VSN681MP35M	
	680	30×30	0.15	1.81	ECHA201VSN681MR30M	
	680	35×25	0.20	1.86	ECHA201VSN681MA25M	
	820	25.4×45	0.15	2.11	ECHA201VSN821MQ45M	
	820	30×35	0.15	2.11	ECHA201VSN821MR35M	
	820	35×25	0.20	2.11	ECHA201VSN821MA25M	
	1,000	30×35	0.15	2.40	ECHA201VSN102MR35M	
1,000	35×30	0.20	2.40	ECHA201VSN102MA30M		
1,200	30×45	0.15	2.69	ECHA201VSN122MR45M		
1,200	35×35	0.20	2.65	ECHA201VSN122MA35M		
250	120	22×20	0.15	0.68	ECHA251VSN121MP20M	
	180	22×25	0.15	0.87	ECHA251VSN181MP25M	
	180	25.4×20	0.15	0.93	ECHA251VSN181MQ20M	
	220	22×30	0.15	1.00	ECHA251VSN221MP30M	
	270	22×35	0.15	1.14	ECHA251VSN271MP35M	
	270	25.4×25	0.15	1.13	ECHA251VSN271MQ25M	
	270	30×20	0.15	1.25	ECHA251VSN271MR20M	
	330	22×40	0.15	1.28	ECHA251VSN331MP40M	
	330	25.4×30	0.15	1.29	ECHA251VSN331MQ30M	
	390	22×45	0.15	1.42	ECHA251VSN391MP45M	
	390	25.4×35	0.15	1.46	ECHA251VSN391MQ35M	
	390	30×25	0.15	1.52	ECHA251VSN391MR25M	
	250	390	35×20	0.20	1.62	ECHA251VSN391MA20M
		470	25.4×40	0.15	1.64	ECHA251VSN471MQ40M
470		30×30	0.15	1.67	ECHA251VSN471MR30M	
560		25.4×45	0.15	1.82	ECHA251VSN561MQ45M	
560		30×35	0.15	1.87	ECHA251VSN561MR35M	
560		35×25	0.20	1.99	ECHA251VSN561MA25M	
680		30×40	0.15	2.12	ECHA251VSN681MR40M	
680		35×30	0.20	2.19	ECHA251VSN681MA30M	
820		30×45	0.15	2.39	ECHA251VSN821MR45M	
820		35×35	0.20	2.42	ECHA251VSN821MA35M	
400		56	22×20	0.15	0.45	ECHA401VSN560MP20M
		68	22×20	0.15	0.51	ECHA401VSN680MP20M
		82	22×25	0.15	0.58	ECHA401VSN820MP25M
		100	22×25	0.15	0.66	ECHA401VSN101MP25M
		100	25.4×25	0.15	0.66	ECHA401VSN101MQ25M
		120	22×30	0.15	0.76	ECHA401VSN121MP30M
		120	25.4×25	0.15	0.76	ECHA401VSN121MQ25M
		150	22×35	0.15	0.85	ECHA401VSN151MP35M
	150	25.4×30	0.15	0.85	ECHA401VSN151MQ30M	
	150	30×25	0.15	0.85	ECHA401VSN151MR25M	
	180	22×40	0.15	0.94	ECHA401VSN181MP40M	
	180	25.4×35	0.15	0.95	ECHA401VSN181MQ35M	
	180	30×25	0.15	0.95	ECHA401VSN181MR25M	
	220	25.4×35	0.15	1.24	ECHA401VSN221MQ35M	
	220	30×30	0.15	1.24	ECHA401VSN221MR30M	
	220	35×25	0.15	1.24	ECHA401VSN221MA25M	
	270	25.4×45	0.15	1.30	ECHA401VSN271MQ45M	
	270	30×35	0.15	1.30	ECHA401VSN271MR35M	
270	35×25	0.15	1.30	ECHA401VSN271MA25M		
330	30×40	0.15	1.47	ECHA401VSN331MR40M		
330	35×30	0.15	1.47	ECHA401VSN331MA30M		
450	180	30×35	0.20	1.00	ECHA451VSN181MR35M	
	220	30×35	0.20	1.30	ECHA451VSN221MR35M	
	390	35×40	0.20	1.60	ECHA451VSN391MA40M	
	420	35×50	0.20	1.56	ECHA451VSN421MA50M	

◆DC OVERVOLTAGE TEST CONDITIONS

The vent will operate and the capacitor shall become an open circuit without burning materials when the following test DC voltage is applied.

●Test DC voltage

Rated Voltage	Nominal Capacitance	Current Limit	Test Voltage
200V _{dc}	<330	4A	300/375V _{dc}
	330μF ≤ C < 470μF	5A	
	≥ 470μF	7A	
250V _{dc}	<330μF	4A	350/450V _{dc}
	330μF ≤ C < 470μF	5A	
	≥ 470μF	7A	
400V _{dc}	<100μF	2A	500/600V _{dc}
	100μF ≤ C < 220μF	4A	
	≥ 220μF	7A	
450V _{dc}	<100μF	2A	550/675V _{dc}
	100μF ≤ C < 220μF	4A	
	≥ 220μF	7A	

●Test Circuit

