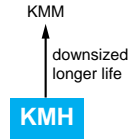


KMH Series

- Endurance with ripple current : 105°C 2000 hours
- Non solvent-proof type

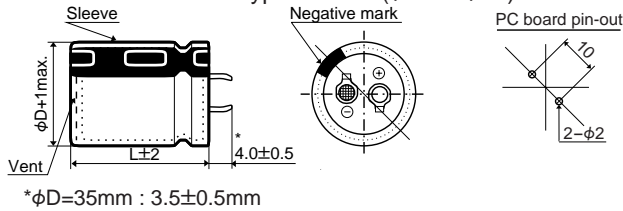


◆SPECIFICATIONS

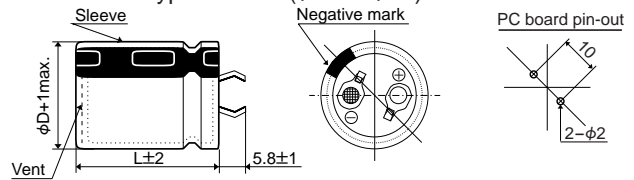
Items	Characteristics													
Category	-40 to +105°C (6.3 to 100V _{dc}) -25 to +105°C (160 to 450V _{dc})													
Temperature Range														
Rated Voltage Range	6.3 to 450V _{dc}													
Capacitance Tolerance	±20% (M) (at 20°C, 120Hz)													
Leakage Current	I=0.02CV (0.03CV for L=20mm) or 3mA, whichever is smaller Where, I : Max. leakage current (µA), C : Nominal capacitance (µF), V : Rated voltage (V) (at 20°C after 5 minutes)													
Dissipation Factor (tanδ)	Rated voltage (V _{dc})	6.3V	10V	16V	25V	35V	50V	63V	80V	100V	160 to 250V	315 to 400V	450V	
	tanδ (Max.)	0.60	0.50	0.40	0.30	0.25	0.20	0.15	0.15	0.15	0.10*	0.15	0.15	
* : 0.15 for D=35mm or L=20mm (at 20°C, 120Hz)														
Low Temperature Characteristics (Max. Impedance Ratio)	Rated voltage (V _{dc})	6.3V	10V	16V	25V	35V	50V	63V	80V	100V	160 to 250V	315 to 400V	450V	
	Z(-25°C)/Z(+20°C)	4	4	4	3	3	2	2	2	2	4	4	8	
	Z(-40°C)/Z(+20°C)	15	15	15	10	8	6	6	5	5	—	—	—	(at 120Hz)
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 2000 hours at 105°C.													
	Capacitance change	≤±20% of the initial value												
	DF (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 1000 hours at 105°C without voltage applied.													
	Capacitance change	≤±20% of the initial value												
	DF (tanδ)	≤150% of the initial specified value												
	Leakage current	≤The initial specified value												

◆DIMENSIONS [mm]

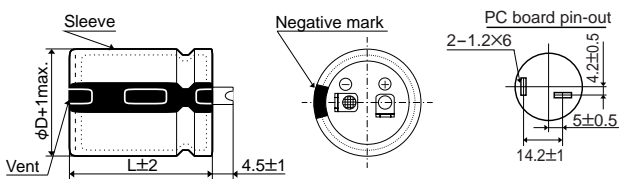
●Standard Terminal Type : VSSN (φ22 to φ35)



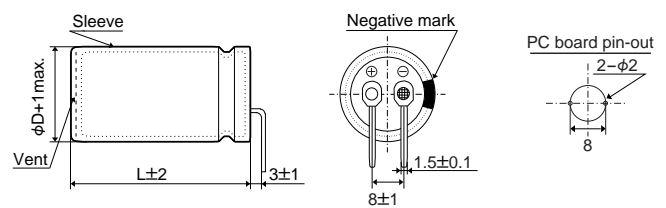
●Terminal Type : VNSN (φ22 to φ35)



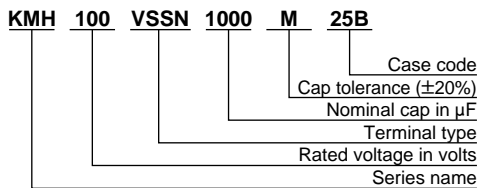
●Terminal Type : LISN (φ35)



●Terminal Type : LCSN (φ22×30 to 500)



◆PART NUMBERING SYSTEM





◆STANDARD RATINGS

μF	V _{dc}		6.3				10				16			
	φD		22	25.4	30	35	22	25.4	30	35	22	25.4	30	35
6,800											22×25 1.57			
10,000							22×25 1.55				22×30 1.97	25.4×25 1.97		
12,000			22×25 1.54				22×30 1.77				22×35 2.22	25.4×30 2.24	30×25 2.45	
15,000			22×25 1.72				22×30 1.97	25.4×25 1.96			22×40 2.55	25.4×35 2.58	30×25 2.52	
18,000			22×30 1.95	25.4×25 1.96			22×35 2.21	25.4×30 2.23			22×45 2.87	25.4×40 2.92	30×30 2.88	35×25 2.92
22,000			22×35 2.23	25.4×30 2.25	30×25 2.28		22×40 2.51	25.4×35 2.54	30×25 2.40			25.4×45 3.32	30×35 3.29	35×25 3.23
27,000			22×40 2.54	25.4×35 2.57	30×25 2.52		22×50 2.93	25.4×40 2.90	30×30 2.87	35×25 2.73		25.4×50 3.78	30×40 3.77	35×30 3.45
33,000			22×45 2.88	25.4×40 2.93	30×30 2.89	35×25 2.93		25.4×45 3.30	30×35 3.28	35×30 3.16			30×45 4.30	35×35 4.26
39,000				25.4×40 3.18	30×35 3.26	35×30 3.40		25.4×50 3.68	30×40 3.69	35×30 3.43			30×50 4.81	35×40 4.79
47,000				25.4×50 3.69	30×40 3.69	35×30 3.73			30×45 4.17	35×35 3.76				35×45 5.43
56,000					30×45 4.16	35×35 4.12			30×50 4.68	35×40 4.67				
68,000					30×50 4.71	35×40 4.69				35×50 5.46				
82,000						35×45 5.32	← Upper : Case size φD×L (mm) ← Lower : Rated ripple current (Arms) at 105°C, 120Hz							

μF	V _{dc}		25				35				50			
	φD		22	25.4	30	35	22	25.4	30	35	22	25.4	30	35
1,800											22×25 1.33			
2,700											22×30 1.69	25.4×25 1.70		
3,300							22×25 1.40				22×35 1.93	25.4×30 1.85		
3,900							22×30 1.57				22×40 2.16	25.4×35 2.18	30×25 1.95	
4,700			22×25 1.50				22×30 1.72	25.4×25 1.80			22×45 2.43	25.4×35 2.39	30×30 2.25	35×25 2.48
5,600			22×25 1.63				22×35 1.95	25.4×30 1.96	30×25 1.99		22×50 2.75	25.4×40 2.70	30×35 2.76	35×25 2.70
6,800			22×30 1.86	25.4×25 1.87			22×40 2.20	25.4×35 2.23	30×25 2.19			25.4×50 3.30	30×40 3.30	35×30 3.25
8,200			22×35 2.11	25.4×30 2.12	30×25 2.15		22×50 2.55	25.4×40 2.53	30×30 2.75	35×25 2.75			30×45 3.60	35×35 3.55
10,000			22×40 2.39	25.4×35 2.42	30×25 2.37			25.4×45 2.87	30×35 2.90	35×30 2.91			30×50 4.04	35×40 4.03
12,000			22×45 2.69	25.4×40 2.74	30×30 2.70	35×25 2.74		25.4×50 3.24	30×40 3.23	35×30 2.99				35×45 4.55
15,000				25.4×45 3.15	30×35 3.13	35×30 3.27			30×45 3.72	35×35 3.67				
18,000				25.4×50 3.54	30×40 3.54	35×30 3.58				35×40 4.37				
22,000					30×45 4.04	35×35 3.64				35×50 4.92				
27,000						35×45 4.73	← Upper : Case size φD×L (mm) ← Lower : Rated ripple current (Arms) at 105°C, 120Hz							
33,000						35×50 5.39								

◆CASE CODE [mm]

Case code	Case size φD×L	Case code	Case size φD×L	Case code	Case size φD×L	Case code	Case size φD×L
22S	22×20	25S	25.4×20	30S	30×20	35S	35×20
22A	22×25	25A	25.4×25	30A	30×25	35A	35×25
22B	22×30	25B	25.4×30	30B	30×30	35B	35×30
22C	22×35	25C	25.4×35	30C	30×35	35C	35×35
22D	22×40	25D	25.4×40	30D	30×40	35D	35×40
22E	22×45	25E	25.4×45	30E	30×45	35E	35×45
22F	22×50	25F	25.4×50	30F	30×50	35F	35×50

◆RATED RIPPLE CURRENT MULTIPLIERS

●Frequency Multipliers

Frequency (Hz)	50	120	300	1k	10k	50k
6.3 to 50V _{dc}	0.95	1.00	1.03	1.05	1.08	1.08
63 to 100V _{dc}	0.92	1.00	1.07	1.13	1.19	1.20
160 to 250V _{dc}	0.81	1.00	1.17	1.32	1.45	1.50
315 to 450V _{dc}	0.77	1.00	1.16	1.30	1.41	1.43



◆STANDARD RATINGS

μF	V _{dc} φD	63				80				100			
		22	25.4	30	35	22	25.4	30	35	22	25.4	30	35
560										22×25 1.05			
820					22×25 1.11					22×30 1.32	25.4×25 1.33		
1,000					22×25 1.22					22×35 1.50	25.4×30 1.51		
1,200		22×25 1.19			22×30 1.38	25.4×25 1.39				22×40 1.69	25.4×35 1.71	30×25 1.68	
1,500		22×25 1.33			22×35 1.59	25.4×30 1.61				22×45 1.94	25.4×40 1.98	30×30 1.95	35×25 1.98
1,800		22×30 1.51	25.4×25 1.52		22×40 1.80	25.4×30 1.76	30×25 1.65				25.4×45 2.23	30×35 2.50	35×25 2.17
2,200		22×35 1.73	25.4×30 1.74		22×45 2.04	25.4×35 2.05	30×30 2.05	35×25 2.07			25.4×50 2.53	30×40 2.70	35×30 2.50
2,700		22×40 1.97	25.4×35 1.99	30×25 1.76		25.4×45 2.36	30×35 2.35	35×25 2.29				30×45 2.88	35×35 2.86
3,300		22×50 2.29	25.4×40 2.27	30×30 2.24	35×25 2.06	25.4×50 2.68	30×40 2.68	35×30 2.45				30×50 3.28	35×40 3.27
3,900			25.4×45 2.54	30×35 2.55	35×25 2.24		30×45 3.00	35×35 2.98					35×45 3.67
4,700			25.4×50 2.86	30×40 2.86	35×30 2.79		30×50 3.39	35×40 3.38					35×50 3.80
5,600				30×45 3.22	35×35 3.19			35×45 3.80					
6,800				30×50 3.65	35×40 3.64			35×50 3.90					
8,200					35×45 3.90	← Upper : Case size φDXL (mm) ← Lower : Rated ripple current (Arms) at 105°C, 120Hz							
10,000					35×50 4.40								

μF	V _{dc} φD	160				180				200			
		22	25.4	30	35	22	25.4	30	35	22	25.4	30	35
150										22×20 0.66			
180					22×20 0.73					22×20 0.72			
220		22×20 0.80			22×20 0.80					22×25 0.79	25.4×20 0.83		
270		22×25 1.09			22×25 0.96	25.4×20 0.92				22×25 0.87	25.4×25 1.09		
330		22×25 1.20	25.4×20 1.02		22×25 1.06	25.4×25 1.20				22×30 1.20	25.4×25 1.21	30×20 1.08	
390		22×30 1.30	25.4×25 1.28	30×20 1.17	22×30 1.30	25.4×25 1.30	30×20 1.17			22×35 1.31	25.4×25 1.31	30×25 1.37	
470		22×35 1.40	25.4×25 1.41	30×20 1.28	22×35 1.35	25.4×30 1.40	30×25 1.38	35×20 1.41	22×40 1.40	25.4×30 1.41	30×25 1.50	35×20 1.41	
560		22×40 1.50	25.4×30 1.51	30×25 1.56	35×20 1.54	22×40 1.51	25.4×35 1.53	30×25 1.51	35×20 1.53	22×45 1.56	25.4×35 1.53	30×25 1.63	35×25 1.56
680		22×45 1.71	25.4×35 1.70	30×25 1.72	35×20 1.70	22×45 1.71	25.4×40 1.74	30×30 1.72	35×25 1.74	22×50 1.74	25.4×40 1.74	30×30 1.74	35×25 1.72
820		22×50 1.93	25.4×40 2.01	30×30 2.00	35×25 1.91	22×50 1.97	25.4×45 1.97	30×35 2.00	35×25 1.91		25.4×50 2.04	30×35 2.00	35×30 2.04
1,000			25.4×45 2.20	30×35 2.22	35×25 2.11		25.4×50 2.23	30×40 2.24	35×30 2.26			30×45 2.30	35×35 2.30
1,200			25.4×50 2.45	30×40 2.44	35×30 2.44			30×45 2.52	35×35 2.50			30×50 2.60	35×40 2.65
1,500				30×45 2.82	35×35 2.50			30×50 2.89	35×40 2.89				35×45 3.08
1,800				30×50 3.31	35×45 3.31				35×40 3.17				35×50 3.47
2,200					35×50 3.77				35×50 3.60	← Upper : Case size φDXL (mm) ← Lower : Rated ripple current (Arms) at 105°C, 120Hz			

◆STANDARD RATINGS

μF	V _{dc} φD	250				315				350			
		22	25.4	30	35	22	25.4	30	35	22	25.4	30	35
56										22×20 0.40			
68						22×20 0.44				22×25 0.51			
82						22×25 0.64				22×25 0.56	25.4×20 0.51		
100						22×30 0.68	25.4×20 0.56			22×30 0.69	25.4×25 0.69	30×20 0.59	
120		22×20 0.59				22×30 0.75	25.4×25 0.76	30×20 0.65		22×35 0.75	25.4×25 0.75	30×20 0.64	
150		22×25 0.71				22×35 0.82	25.4×30 0.80	30×25 0.82		22×40 0.82	25.4×30 0.83	30×25 0.83	35×20 0.76
180		22×25 0.78	25.4×20 0.75			22×40 0.91	25.4×30 0.88	30×25 0.90	35×20 0.83	22×45 0.92	25.4×35 0.92	30×25 0.91	35×25 0.94
220		22×30 0.95	25.4×25 0.95	30×20 0.88		22×45 1.02	25.4×35 1.02	30×30 1.02	35×25 1.03	22×50 1.05	25.4×40 1.04	30×30 1.02	35×25 1.04
270		22×35 1.14	25.4×25 1.05	30×20 0.97		22×50 1.16	25.4×40 1.15	30×35 1.17	35×25 1.15		25.4×45 1.18	30×35 1.17	35×30 1.20
330		22×40 1.26	25.4×30 1.20	30×25 1.26	35×20 1.18		25.4×50 1.33	30×35 1.30	35×30 1.32			30×40 1.34	35×30 1.33
390		22×45 1.49	25.4×35 1.49	30×25 1.37	35×25 1.43			30×40 1.46	35×35 1.47			30×45 1.51	35×35 1.47
470		22×50 1.57	25.4×40 1.57	30×30 1.57	35×25 1.57			30×50 1.70	35×40 1.69				35×40 1.69
560			25.4×45 1.79	30×35 1.79	35×30 1.79				35×45 1.90				35×45 1.90
680			25.4×50 1.84	30×40 2.00	35×30 1.97				35×50 2.15				
820				30×45 2.16	35×35 1.98								
1,000					35×40 2.30	← Upper : Case size φD×L (mm) ← Lower : Rated ripple current (Arms) at 105°C, 120Hz							
1,200					35×45 2.43								

μF	V _{dc} φD	400				450			
		22	25.4	30	35	22	25.4	30	35
47		22×20 0.37							
56		22×20 0.40				22×25 0.40			
68		22×25 0.51	25.4×20 0.46			22×30 0.50	25.4×25 0.50		
82		22×30 0.58	25.4×25 0.64			22×35 0.56	25.4×25 0.55		
100		22×30 0.64	25.4×25 0.67	30×20 0.59		22×40 0.64	25.4×30 0.57	30×25 0.64	
120		22×35 0.72	25.4×30 0.72	30×25 0.76		22×45 0.72	25.4×35 0.71	30×25 0.70	
150		22×40 0.82	25.4×35 0.84	30×25 0.84	35×20 0.76	22×50 0.79	25.4×40 0.75	30×30 0.74	35×25 0.75
180		22×50 0.95	25.4×40 0.94	30×30 0.92	35×25 0.94		25.4×45 0.84	30×35 0.87	35×30 0.90
220			25.4×45 1.07	30×35 1.06	35×30 1.08		25.4×50 0.98	30×40 0.98	35×30 1.00
270			25.4×50 1.21	30×40 1.21	35×30 1.20			30×45 1.15	35×35 1.17
330				30×45 1.39	35×35 1.35			30×50 1.38	35×40 1.38
390				30×50 1.55	35×40 1.54				35×45 1.55
470					35×45 1.74				35×50 1.72