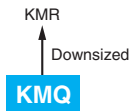


KMQ Series

- Endurance with ripple current : 2,000 hours at 105°C
- Non solvent resistant type
- RoHS2 Compliant

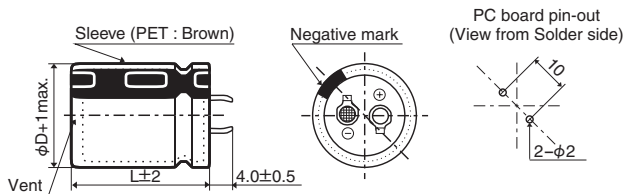


SPECIFICATIONS

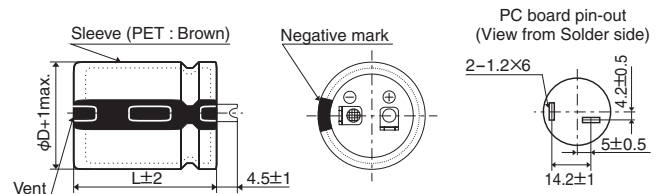
Items	Characteristics								
Category	-40 to +105°C (35&50V _{dc}), -25 to +105°C (160 to 450V _{dc})								
Temperature Range									
Rated Voltage Range	35&50V _{dc} , 160 to 450V _{dc}								
Capacitance Tolerance	± 20% (M) (at 20°C, 120Hz)								
Leakage Current	I ≤ 3/√CV Where, I : Max. leakage current (μA), C : Nominal capacitance (μF), V : Rated voltage (V) (at 20°C after 5 minutes)								
Dissipation Factor (tan δ)	Rated voltage (V _{ac})	35V		50V		160 to 250V	315 to 400V	420 & 450V	(at 20°C, 120Hz)
	Nominal capacitance (μF)	10,000>C C ≥ 10,000		10,000>C C ≥ 10,000		—	—	—	
	tan δ (Max.)	0.30 0.35		0.25 0.30		0.15 0.15		0.20	
Low Temperature Characteristics (Max. Impedance Ratio)	Rated voltage (V _{ac})	35&50V		160 to 250V		315 to 450V		(at 120Hz)	
	Z(-25°C)/Z(+20°C)	4		4		8			
	Z(-40°C)/Z(+20°C)	10		—		—			
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 (the peak voltage shall not exceed the rated voltage) for 2,000 hours at 105°C.								
	Capacitance change	≤ ± 20% of the initial value							
	D.F. (tan δ)	≤ 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. (tan δ)	≤ 150% of the initial specified value							
	Leakage current	≤ The initial specified value							

DIMENSIONS [mm]

- Terminal Code : VS (φ22 to φ35) : Standard

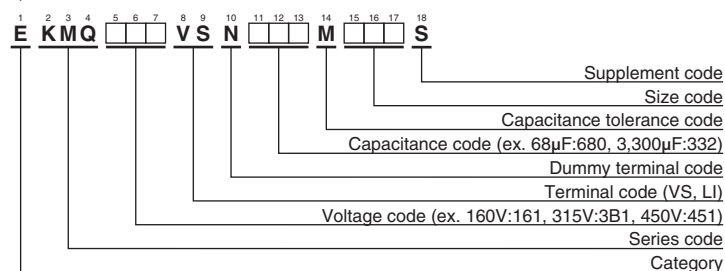


- Terminal Code : LI (φ35)



The standard design has no plastic disc.

PART NUMBERING SYSTEM



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

◆STANDARD RATINGS

WV (V _{dc})	Cap (μF)	Case size φD×L(mm)	tan δ	Rated ripple current (Arms/ 105°C, 120Hz)	Part No.	WV (V _{dc})	Cap (μF)	Case size φD×L(mm)	tan δ	Rated ripple current (Arms/ 105°C, 120Hz)	Part No.
35	4,700	22 × 25	0.30	1.87	EKMQ350VSN472MP25S	160	1,800	30 × 40	0.15	2.70	EKMQ161VSN182MR40S
	5,600	22 × 25	0.30	2.04	EKMQ350VSN562MP25S		1,800	35 × 30	0.15	2.70	EKMQ161VSN182MA30S
	5,600	25.4 × 25	0.30	2.00	EKMQ350VSN562MQ25S		2,200	30 × 45	0.15	2.90	EKMQ161VSN222MR45S
	6,800	22 × 30	0.30	2.36	EKMQ350VSN682MP30S		2,200	35 × 35	0.15	2.90	EKMQ161VSN222MA35S
	6,800	25.4 × 25	0.30	2.21	EKMQ350VSN682MQ25S		2,700	30 × 50	0.15	3.10	EKMQ161VSN272MR50S
	8,200	22 × 35	0.30	2.65	EKMQ350VSN822MP35S		2,700	35 × 40	0.15	3.10	EKMQ161VSN272MA40S
	8,200	25.4 × 30	0.30	2.49	EKMQ350VSN822MQ30S		3,300	35 × 50	0.15	3.30	EKMQ161VSN332MA50S
	8,200	30 × 25	0.30	2.62	EKMQ350VSN822MR25S		390	22 × 25	0.15	1.30	EKMQ181VSN391MP25S
	10,000	22 × 40	0.35	3.00	EKMQ350VSN103MP40S		470	22 × 30	0.15	1.40	EKMQ181VSN471MP30S
	10,000	25.4 × 35	0.35	2.88	EKMQ350VSN103MQ35S	180	560	22 × 30	0.15	1.50	EKMQ181VSN561MP30S
	10,000	30 × 25	0.35	2.90	EKMQ350VSN103MR25S		560	25.4 × 25	0.15	1.50	EKMQ181VSN561MQ25S
	12,000	22 × 50	0.35	3.47	EKMQ350VSN123MP50S		680	22 × 35	0.15	1.70	EKMQ181VSN681MP35S
	12,000	25.4 × 35	0.35	3.15	EKMQ350VSN123MQ35S		680	25.4 × 30	0.15	1.70	EKMQ181VSN681MQ30S
	12,000	30 × 30	0.35	3.25	EKMQ350VSN123MR30S		820	22 × 40	0.15	2.00	EKMQ181VSN821MP40S
	12,000	35 × 25	0.35	3.20	EKMQ350VSN123MA25S		820	25.4 × 30	0.15	2.00	EKMQ181VSN102MR30S
	15,000	25.4 × 40	0.35	3.61	EKMQ350VSN153MQ40S		820	30 × 25	0.15	2.00	EKMQ181VSN821MR25S
	15,000	30 × 35	0.35	3.78	EKMQ350VSN153MR35S		1,000	22 × 45	0.15	2.20	EKMQ181VSN102MP45S
	15,000	35 × 25	0.35	3.60	EKMQ350VSN153MA25S		1,000	25.4 × 40	0.15	2.20	EKMQ181VSN102MQ40S
	18,000	25.4 × 50	0.35	4.14	EKMQ350VSN183MQ50S		1,000	30 × 30	0.15	2.20	EKMQ181VSN102MR30S
	18,000	30 × 40	0.35	4.30	EKMQ350VSN183MR40S		1,000	35 × 25	0.15	2.20	EKMQ181VSN102MA25S
	18,000	35 × 30	0.35	4.10	EKMQ350VSN183MA30S		1,200	25.4 × 45	0.15	2.30	EKMQ181VSN122MQ45S
	22,000	30 × 50	0.35	5.00	EKMQ350VSN223MR50S		1,200	30 × 35	0.15	2.30	EKMQ181VSN122MR35S
	22,000	35 × 35	0.35	4.64	EKMQ350VSN223MA35S		1,200	35 × 30	0.15	2.30	EKMQ181VSN122MA30S
	27,000	35 × 40	0.35	5.37	EKMQ350VSN273MA40S		1,500	25.4 × 50	0.15	2.50	EKMQ181VSN152MQ50S
	33,000	35 × 50	0.35	6.00	EKMQ350VSN333MA50S		1,500	30 × 40	0.15	2.50	EKMQ181VSN152MR40S
50	2,700	22 × 25	0.25	1.65	EKMQ500VSN272MP25S		1,500	35 × 30	0.15	2.50	EKMQ181VSN152MA30S
	3,300	22 × 30	0.25	1.92	EKMQ500VSN332MP30S	200	1,800	30 × 45	0.15	2.70	EKMQ181VSN182MR45S
	3,300	25.4 × 25	0.25	1.76	EKMQ500VSN332MQ25S		1,800	35 × 35	0.15	2.70	EKMQ181VSN182MA35S
	3,900	22 × 30	0.25	2.08	EKMQ500VSN392MP30S		2,200	30 × 50	0.15	2.90	EKMQ181VSN222MR50S
	3,900	25.4 × 25	0.25	2.04	EKMQ500VSN392MQ25S		2,200	35 × 40	0.15	2.90	EKMQ181VSN222MA40S
	4,700	22 × 35	0.25	2.43	EKMQ500VSN472MP35S		2,700	35 × 50	0.15	3.10	EKMQ181VSN272MA50S
	4,700	25.4 × 30	0.25	2.50	EKMQ500VSN472MQ30S	250	390	22 × 25	0.15	1.31	EKMQ201VSN391MP25S
	4,700	30 × 25	0.25	2.29	EKMQ500VSN472MR25S		470	22 × 30	0.15	1.45	EKMQ201VSN471MP30S
	5,600	22 × 40	0.25	2.63	EKMQ500VSN562MP40S		560	22 × 30	0.15	1.67	EKMQ201VSN561MP30S
	5,600	25.4 × 35	0.25	2.61	EKMQ500VSN562MQ35S		560	25.4 × 25	0.15	1.67	EKMQ201VSN561MQ25S
	5,600	30 × 25	0.25	2.80	EKMQ500VSN562MR25S		680	22 × 40	0.15	1.75	EKMQ201VSN681MP40S
	6,800	22 × 50	0.25	3.05	EKMQ500VSN682MP50S		680	25.4 × 30	0.15	1.75	EKMQ201VSN681MQ30S
	6,800	25.4 × 40	0.25	2.94	EKMQ500VSN682MQ40S		820	22 × 45	0.15	2.04	EKMQ201VSN821MP45S
	6,800	30 × 30	0.25	3.30	EKMQ500VSN682MR30S		820	25.4 × 35	0.15	2.04	EKMQ201VSN821MQ35S
	6,800	35 × 25	0.25	2.77	EKMQ500VSN682MA25S		820	30 × 25	0.15	2.04	EKMQ201VSN821MR25S
	8,200	25.4 × 45	0.25	3.60	EKMQ500VSN822MQ45S		1,000	22 × 50	0.15	2.30	EKMQ201VSN102MP50S
	8,200	30 × 35	0.25	3.60	EKMQ500VSN822MR35S		1,000	25.4 × 45	0.15	2.30	EKMQ201VSN102MQ45S
	8,200	35 × 30	0.25	3.60	EKMQ500VSN822MA30S		1,000	30 × 30	0.15	2.30	EKMQ201VSN102MR30S
	10,000	25.4 × 50	0.30	4.00	EKMQ500VSN103MQ50S		1,000	35 × 25	0.15	2.30	EKMQ201VSN102MA25S
	10,000	30 × 40	0.30	4.00	EKMQ500VSN103MR40S		1,200	25.4 × 50	0.15	2.65	EKMQ201VSN122MQ50S
	10,000	35 × 30	0.30	4.00	EKMQ500VSN103MA30S		1,200	30 × 35	0.15	2.65	EKMQ201VSN122MR35S
	12,000	30 × 50	0.30	4.29	EKMQ500VSN123MR50S		1,200	35 × 30	0.15	2.65	EKMQ201VSN122MA30S
	12,000	35 × 35	0.30	4.37	EKMQ500VSN123MA35S		1,500	30 × 40	0.15	2.80	EKMQ201VSN152MR40S
	15,000	35 × 40	0.30	4.50	EKMQ500VSN153MA40S		1,500	35 × 30	0.15	2.80	EKMQ201VSN152MA30S
	18,000	35 × 50	0.30	5.30	EKMQ500VSN183MA50S		1,800	30 × 45	0.15	3.08	EKMQ201VSN182MR45S
160	470	22 × 25	0.15	1.40	EKMQ161VSN471MP25S		1,800	35 × 40	0.15	3.08	EKMQ201VSN182MA40S
	560	22 × 30	0.15	1.50	EKMQ161VSN561MP30S	250	2,200	35 × 45	0.15	3.48	EKMQ201VSN222MA45S
	680	22 × 30	0.15	1.70	EKMQ161VSN681MP30S		220	22 × 25	0.15	1.00	EKMQ251VSN221MP25S
	680	25.4 × 25	0.15	1.70	EKMQ161VSN681MQ25S		270	22 × 25	0.15	1.10	EKMQ251VSN271MP25S
	820	22 × 35	0.15	2.00	EKMQ161VSN821MP35S		330	22 × 30	0.15	1.20	EKMQ251VSN331MP30S
	820	25.4 × 30	0.15	2.00	EKMQ161VSN821MQ30S		330	25.4 × 25	0.15	1.20	EKMQ251VSN331MQ25S
	820	30 × 25	0.15	2.00	EKMQ161VSN821MR25S		390	22 × 35	0.15	1.30	EKMQ251VSN391MP35S
	1,000	22 × 40	0.15	2.20	EKMQ161VSN102MP40S		390	25.4 × 25	0.15	1.30	EKMQ251VSN391MQ25S
	1,000	25.4 × 35	0.15	2.20	EKMQ161VSN102MQ35S		470	22 × 40	0.15	1.40	EKMQ251VSN471MP40S
	1,000	30 × 25	0.15	2.20	EKMQ161VSN102MR25S		470	25.4 × 30	0.15	1.40	EKMQ251VSN471MQ30S
	1,200	25.4 × 40	0.15	2.30	EKMQ161VSN122MQ40S		470	30 × 25	0.15	1.40	EKMQ251VSN471MR25S
	1,200	30 × 30	0.15	2.30	EKMQ161VSN122MR30S		560	22 × 45	0.15	1.50	EKMQ251VSN561MP45S
	1,200	35 × 25	0.15	2.30	EKMQ161VSN122MA25S		560	25.4 × 35	0.15	1.50	EKMQ251VSN561MQ35S
	1,500	25.4 × 45	0.15	2.50	EKMQ161VSN152MQ45S		560	30 × 25	0.15	1.50	EKMQ251VSN561MR25S
	1,500	30 × 35	0.15	2.50	EKMQ161VSN152MR35S		680	22 × 50	0.15	1.70	EKMQ251VSN681MP50S
	1,500	35 × 30	0.15	2.50	EKMQ161VSN152MA30S		680	25.4 × 40	0.15	1.70	EKMQ251VSN681MQ40S
	1,800	25.4 × 50	0.15	2.70	EKMQ161VSN182MQ50S		680	30 × 30	0.15	1.70	EKMQ251VSN681MR30S

◆STANDARD RATINGS

WV (V _{dc})	Cap (μF)	Case size φD×L(mm)	tan δ	Rated ripple current (Arms/ 105°C, 120Hz)	Part No.	WV (V _{dc})	Cap (μF)	Case size φD×L(mm)	tan δ	Rated ripple current (Arms/ 105°C, 120Hz)	Part No.
250	680	35 × 25	0.15	1.70	EKM251VSN681MA25S	400	270	25.4 × 40	0.15	1.22	EKM401VSN271MQ40S
	820	25.4 × 45	0.15	2.00	EKM251VSN821MQ45S		270	30 × 30	0.15	1.22	EKM401VSN271MR30S
	820	30 × 35	0.15	2.00	EKM251VSN821MR35S		270	35 × 25	0.15	1.22	EKM401VSN271MA25S
	820	35 × 30	0.15	2.00	EKM251VSN821MA30S		330	25.4 × 45	0.15	1.44	EKM401VSN331MQ45S
	1,000	30 × 40	0.15	2.20	EKM251VSN102MR40S		330	30 × 35	0.15	1.44	EKM401VSN331MR35S
	1,000	35 × 30	0.15	2.20	EKM251VSN102MA30S		330	35 × 30	0.15	1.44	EKM401VSN331MA30S
	1,200	30 × 45	0.15	2.30	EKM251VSN122MR45S		390	25.4 × 50	0.15	1.55	EKM401VSN391MQ50S
	1,200	35 × 35	0.15	2.30	EKM251VSN122MA35S		390	30 × 40	0.15	1.55	EKM401VSN391MR40S
	1,500	35 × 45	0.15	2.50	EKM251VSN152MA45S		390	35 × 30	0.15	1.55	EKM401VSN391MA30S
	1,800	35 × 50	0.15	2.70	EKM251VSN182MA50S		470	30 × 45	0.15	1.68	EKM401VSN471MR45S
315	150	22 × 25	0.15	0.82	EKM315VSN151MP25S	420	470	35 × 35	0.15	1.68	EKM401VSN471MR35S
	180	22 × 30	0.15	0.90	EKM315VSN181MP30S		560	30 × 50	0.15	1.90	EKM401VSN561MR50S
	220	22 × 30	0.15	1.00	EKM315VSN221MP30S		560	35 × 40	0.15	1.90	EKM401VSN561MA40S
	220	25.4 × 25	0.15	1.00	EKM315VSN221MQ25S		680	35 × 45	0.15	2.12	EKM401VSN681MA45S
	270	22 × 35	0.15	1.10	EKM315VSN271MP35S		82	22 × 25	0.20	0.64	EKM421VSN820MP25S
	270	25.4 × 30	0.15	1.10	EKM315VSN271MQ30S		100	22 × 25	0.20	0.66	EKM421VSN101MP25S
	330	22 × 45	0.15	1.20	EKM315VSN331MP45S		100	25.4 × 25	0.20	0.66	EKM421VSN101MQ25S
	330	25.4 × 35	0.15	1.20	EKM315VSN331MQ35S		120	22 × 30	0.20	0.81	EKM421VSN121MP30S
	330	30 × 25	0.15	1.20	EKM315VSN331MR25S		120	25.4 × 25	0.20	0.81	EKM421VSN121MQ25S
	390	22 × 45	0.15	1.30	EKM315VSN391MP45S		150	22 × 35	0.20	0.84	EKM421VSN151MP35S
	390	25.4 × 40	0.15	1.30	EKM315VSN391MQ40S		150	25.4 × 30	0.20	0.84	EKM421VSN151MQ30S
	390	30 × 30	0.15	1.30	EKM315VSN391MR30S		150	30 × 25	0.20	0.84	EKM421VSN151MR25S
	390	35 × 25	0.15	1.30	EKM315VSN391MA25S		180	22 × 40	0.20	0.91	EKM421VSN181MP40S
	470	25.4 × 45	0.15	1.40	EKM315VSN471MQ45S		180	25.4 × 30	0.20	0.91	EKM421VSN181MQ30S
	470	30 × 35	0.15	1.40	EKM315VSN471MR35S		180	30 × 25	0.20	0.91	EKM421VSN181MR25S
	470	35 × 25	0.15	1.40	EKM315VSN471MA25S		220	22 × 45	0.20	1.05	EKM421VSN221MP45S
	560	25.4 × 50	0.15	1.50	EKM315VSN561MQ50S		220	25.4 × 35	0.20	1.05	EKM421VSN221MQ35S
	560	30 × 40	0.15	1.50	EKM315VSN561MR40S		220	30 × 30	0.20	1.05	EKM421VSN221MR30S
	560	35 × 30	0.15	1.50	EKM315VSN561MA30S		220	35 × 25	0.20	1.05	EKM421VSN221MA25S
	680	30 × 45	0.15	1.70	EKM315VSN681MR45S	450	270	25.4 × 40	0.20	1.25	EKM421VSN271MQ40S
	680	35 × 35	0.15	1.70	EKM315VSN681MA35S		270	30 × 30	0.20	1.25	EKM421VSN271MR30S
350	820	30 × 50	0.15	2.00	EKM351VSN821MR50S		270	35 × 25	0.20	1.25	EKM421VSN271MA25S
	820	35 × 40	0.15	2.00	EKM351VSN821MA40S		330	25.4 × 50	0.20	1.42	EKM421VSN331MQ50S
	1,000	35 × 45	0.15	2.30	EKM351VSN102MA45S		330	30 × 35	0.20	1.42	EKM421VSN331MR35S
	120	22 × 25	0.15	0.75	EKM351VSN121MP25S		330	35 × 30	0.20	1.42	EKM421VSN331MA30S
	150	22 × 30	0.15	0.82	EKM351VSN151MP30S		390	30 × 40	0.20	1.61	EKM421VSN391MR40S
	180	22 × 30	0.15	0.90	EKM351VSN181MP30S		390	35 × 35	0.20	1.61	EKM421VSN391MA35S
	180	25.4 × 25	0.15	0.90	EKM351VSN181MQ25S		470	30 × 45	0.20	1.86	EKM421VSN471MR45S
	220	22 × 35	0.15	1.00	EKM351VSN221MP35S		470	35 × 40	0.20	1.86	EKM421VSN471MA40S
	220	25.4 × 30	0.15	1.00	EKM351VSN221MQ30S		560	35 × 45	0.20	2.10	EKM421VSN561MA45S
	270	22 × 40	0.15	1.10	EKM351VSN271MP40S		680	35 × 50	0.20	2.20	EKM421VSN681MA50S
	270	25.4 × 30	0.15	1.10	EKM351VSN271MQ30S		68	22 × 25	0.20	0.50	EKM451VSN680MP25S
	270	30 × 25	0.15	1.10	EKM351VSN271MR25S		82	22 × 30	0.20	0.56	EKM451VSN820MP30S
	330	22 × 45	0.15	1.20	EKM351VSN331MP45S		100	22 × 30	0.20	0.64	EKM451VSN101MP30S
	330	25.4 × 40	0.15	1.20	EKM351VSN331MQ40S		100	25.4 × 25	0.20	0.64	EKM451VSN101MQ25S
	330	30 × 30	0.15	1.20	EKM351VSN331MR30S		120	22 × 35	0.20	0.72	EKM451VSN121MP35S
	390	25.4 × 45	0.15	1.30	EKM351VSN391MQ45S		120	25.4 × 30	0.20	0.72	EKM451VSN121MQ30S
	390	30 × 35	0.15	1.30	EKM351VSN391MR35S		150	22 × 40	0.20	0.79	EKM451VSN151MP40S
400	470	25.4 × 50	0.15	1.40	EKM351VSN471MQ50S		150	25.4 × 30	0.20	0.79	EKM451VSN151MQ30S
	470	30 × 35	0.15	1.40	EKM351VSN471MR35S		150	30 × 25	0.20	0.79	EKM451VSN151MR25S
	470	35 × 30	0.15	1.40	EKM351VSN471MA30S		180	22 × 45	0.20	0.87	EKM451VSN181MP45S
	560	30 × 45	0.15	1.50	EKM351VSN561MR45S		180	25.4 × 40	0.20	0.87	EKM451VSN181MQ40S
	560	35 × 35	0.15	1.50	EKM351VSN561MA35S		180	30 × 30	0.20	0.87	EKM451VSN181MR30S
	680	30 × 50	0.15	1.70	EKM351VSN681MR50S		220	25.4 × 45	0.20	1.00	EKM451VSN221MQ45S
	680	35 × 40	0.15	1.70	EKM351VSN681MA40S		220	30 × 30	0.20	1.00	EKM451VSN221MR30S
	820	35 × 45	0.15	1.90	EKM351VSN821MA45S		220	35 × 25	0.20	1.00	EKM451VSN221MA25S
	100	22 × 25	0.15	0.70	EKM401VSN101MP25S		270	25.4 × 50	0.20	1.19	EKM451VSN271MQ50S
	120	22 × 30	0.15	0.75	EKM401VSN121MP30S		270	30 × 40	0.20	1.19	EKM451VSN271MR40S
	150	22 × 30	0.15	0.88	EKM401VSN151MP30S		270	35 × 30	0.20	1.19	EKM451VSN271MA30S
	150	25.4 × 25	0.15	0.88	EKM401VSN151MQ25S		330	30 × 45	0.20	1.38	EKM451VSN331MR45S
	180	22 × 35	0.15	0.95	EKM401VSN181MP35S		330	35 × 35	0.20	1.38	EKM451VSN331MA35S
	180	25.4 × 30	0.15	0.95	EKM401VSN181MQ30S		390	30 × 50	0.20	1.55	EKM451VSN391MR50S
	220	22 × 45	0.15	1.10	EKM401VSN221MP45S		390	35 × 40	0.20	1.55	EKM451VSN391MA40S
	220	25.4 × 35	0.15	1.10	EKM401VSN221MQ35S		470	35 × 45	0.20	1.74	EKM451VSN471MA45S
	220	30 × 25	0.15	1.10	EKM401VSN221MR25S		560	35 × 50	0.20	1.90	EKM451VSN561MA50S
	270	22 × 50	0.15	1.22	EKM401VSN271MP50S						



KMQ Series

◆ RATED RIPPLE CURRENT MULTIPLIERS

● Frequency Multipliers

Frequency(Hz)	50	120	300	1k	10k	50k
35, 50V _{dc}	0.95	1.00	1.03	1.05	1.08	1.08
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

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.