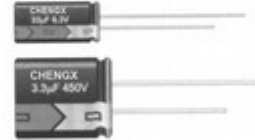


## KM Series

### +105°C, General (普通品)

#### FEATURES

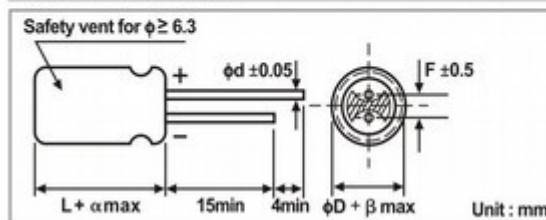
1. Rated working voltage range 6.3 to 100V DC/160 to 450V DC at operation temperature range -40 to +105°C/-25 to +105°C.
2. This series is for communication equipments, switching power supply, industrial measuring instruments, automotive electric products, etc.



#### SPECIFICATIONS

Item	Performance Characteristics	
Operating Temperature Range	-40 to +105°C	-25 to +105°C
Rated Working Voltage Range	6.3 to 100V	160 to 450V
Nominal Capacitance Range	0.1 to 33000 $\mu$ F	
Capacitance Tolerance	$\pm 20\%$ (120Hz, +20°C)	
Leakage Current	$I \leq 0.01CV$ or $3(\mu A)$ whichever is greater	$I \leq 0.03CV + 40(\mu A)$
	after 2 minutes application of rated working voltage at +20°C	
$\tan \delta$ (120Hz, +20°C)	Working Voltage (V)	6.3    10    16    25    35    50    63    100
	$\tan \delta$ (max.)	0.26   0.22   0.18   0.16   0.14   0.12   0.10   0.08
	Working Voltage (V)	160    200    250    250    350    400    420    450
	$\tan \delta$ (max.)	0.20   0.20   0.20   0.20   0.24   0.24   0.24   0.24
	For capacitance value > 1000 $\mu$ F, add 0.02 per another 1000 $\mu$ F	
Low Temperature Characteristics	Impedance ratio max. at 120Hz	
	Working Voltage (V)	6.3    10    16    25    35    50    63    100
	Z-25°C / Z+20°C	5    4    3    2    2    2    2    2
	Z-40°C / Z+20°C	10   8    6    4    3    3    3    3
	Working Voltage (V)	160    200    220    250    350    400    420    450
	Z-25°C / Z+20°C	3    3    3    4    4    6    6    15
	For capacitance value > 1000 $\mu$ F, Add 0.5 per another 1000 $\mu$ F for Z-25°C / Z+20°C Add 1.0 per another 1000 $\mu$ F for Z-40°C / Z+20°C	
High Temperature Loading	Test conditions	
	Duration : $\phi D \leq 6.3 \geq 8$ Load life 1000h 2000h	Post test requirements at +20°C Leakage current : $\leq$ Initial specified value Cap. change : within $\pm 20\%$ of initial measured value $\tan \delta$ : $\leq 200\%$ of initial specified value
	Ambient temp. : +105°C Applied voltage : DC voltage with maximum permissible ripple current specified at +105°C (Sum of the DC voltage and super-imposed peak AC voltage for maximum permissible ripple current should be equal to rated DC working voltage).	
Shelf Life	Test conditions	
	Duration : 1000 hours Ambient temp. : +105°C Applied voltage : (None)	Post test requirements at +20°C Same limits for high temperature loading.
Others	JIS C - 5101 ( IES 60384 )	

#### CASE SIZE TABLE



$\phi D$	5	6.3	8	10	12.5	16	18	22	25
F	2.0	2.5	3.5	5.0	5.0	7.5	7.5	10.0	10.0
$\phi d$	0.5		0.6			0.8			
$\alpha$	(L < 20) 1.5					(L $\geq$ 20) 2.0			
$\beta$	(D < 20) 0.5					(D $\geq$ 20) 1.0			

## KM Series

+105°C, General (普通品)

### STANDARD RATINGS

Voltage (Code)		6.3V (0J)		10V (1A)		16V (1C)		25V (1E)	
Cap.( $\mu$ F)	Code	Case Size	Ripple Current	Case Size	Ripple Current	Case Size	Ripple Current	Case Size	Ripple Current
0.1	104								
0.15	154								
0.22	224								
0.33	334								
0.47	474								
1	105								
2.2	225								
3.3	335								
4.7	475							5 x 11	26
10	106					5 x 11	35	5 x 11	38
22	226			5 x 11	49	5 x 11	54	5 x 11	57
33	336	5 x 11	54	5 x 11	60	5 x 11	65	5 x 11	75
47	476	5 x 11	65	5 x 11	70	5 x 11	80	5 x 11	84
68	686	5 x 11	70	5 x 11	75	5 x 11	90	5 x 11	92
100	107	5 x 11	95	5 x 11	105	5 x 11	125	6.3 x 11	159
220	227	5 x 11	153	5 x 11	170	6.3 x 11	213	8 x 12	285
330	337	6.3 x 11	216	6.3 x 11	239	8 x 12	315	8 x 12	340
470	477	6.3 x 11	258	6.3 x 11	285	8 x 12	366	10 x 12.5	471
680	687	8 x 12	365	8 x 12	408	10 x 12.5	480	10 x 16	620
1000	108	8 x 12	443	10 x 12.5	571	10 x 16	680	10 x 20	821
2200	228	10 x 16	740	10 x 20	886	12.5 x 20	1108	12.5 x 20	1176
3300	338	10 x 20	1032	12.5 x 20	1205	12.5 x 25	1389	16 x 25	1646
4700	478	12.5 x 20	1280	12.5 x 25	1492	16 x 25	1740	16 x 30	2012
6800	688	12.5 x 25	1554	16 x 25	1824	16 x 30	2081	16 x 35	2308
10000	109	16 x 25	1897	16 x 30	1980	16 x 35	2379	18 x 35	2500
15000	159	16 x 30	2188	16 x 40	2180	18 x 35	2600		
22000	229	18 x 35	2400	18 x 40	2407				
33000	339	18 x 40	2555						

Maximum Allowable Ripple Current (mA rms) at 105°C 120Hz

Case Size  $\phi$ D x L(mm)

Voltage (Code)		35V (1V)		50V (1H)		63V (1J)		100V (2A)	
Cap.( $\mu$ F)	Code	Case Size	Ripple Current	Case Size	Ripple Current	Case Size	Ripple Current	Case Size	Ripple Current
0.1	104			5 x 11	1				
0.15	154			5 x 11	1.5				
0.22	224			5 x 11	3				
0.33	334			5 x 11	4				
0.47	474			5 x 11	7			5 x 11	10
1	105			5 x 11	13			5 x 11	16
2.2	225			5 x 11	20			5 x 11	23
3.3	335			5 x 11	30			5 x 11	34
4.7	475	5 x 11	28	5 x 11	37	5 x 11	40	5 x 11	40
10	106	5 x 11	41	5 x 11	54	5 x 11	59	6.3 x 11	61
22	226	5 x 11	67	5 x 11	79	5 x 11	79	6.3 x 11	92
33	336	5 x 11	80	5 x 11	101	6.3 x 11	122	8 x 12	144
47	476	5 x 11	101	6.3 x 11	133	6.3 x 11	146	10 x 12.5	199
68	686					8 x 12	155	10 x 16	240
100	107	6.3 x 11	168	8 x 12	229	10 x 12.5	251	10 x 20	349
220	227	8 x 12	294	10 x 16	509	10 x 20	504	12.5 x 25	622
330	337	10 x 12.5	419	10 x 16	589	12.5 x 20	688	12.5 x 25	800
470	477	10 x 16	547	10 x 20	707	12.5 x 20	810	16 x 25	990
680	687	10 x 20	682	12.5 x 20	923	12.5 x 25	1160	16 x 30	1289
1000	108	12.5 x 20	1023	12.5 x 25	1287	16 x 25	1448	18 x 35	2020
2200	228	16 x 25	1497	16 x 35	1884	18 x 35	1781		
3300	338	16 x 30	1808	18 x 35	2167				
4700	478	18 x 35	2335						
6800	688	18 x 40	2400						

Maximum Allowable Ripple Current (mA rms) at 105°C 120Hz

Case Size  $\phi$ D x L(mm)

## KM Series

+105°C, General (普通品)

### STANDARD RATINGS

Voltage (Code)		160V (2C)		200V (2D)		220V (2N)		250V (2E)	
Cap.(μF)	Code	Case Size	Ripple Current	Case Size	Ripple Current	Case Size	Ripple Current	Case Size	Ripple Current
0.47	474							6.3 x 11	8
1	105							6.3 x 11	17
2.2	225							6.3 x 11	27
3.3	335			6.3 x 11	30	6.3 x 11	30	6.3 x 11	35
4.7	475	6.3 x 11	41	6.3 x 11	40	8 x 12	40	8 x 12	45
10	106	8 x 12	60	10 x 12.5	72	10 x 12.5	70	10 x 12.5	75
22	226	10 x 16	110	10 x 16	113	10 x 20	125	10 x 20	130
33	336	10 x 20	156	10 x 20	165	12.5 x 20	165	12.5 x 20	184
47	476	10 x 20	195	10 x 20	194	12.5 x 20	220	12.5 x 25	238
68	686	12.5 x 20	250	12.5 x 25	250	12.5 x 25	245	16 x 20	246
82	826	12.5 x 25	310	10 x 30	320	12.5 x 30	280	16 x 25	351
100	107	12.5 x 25	360	16 x 25	386	16 x 25	335	16 x 25	390
150	157	12.5 x 30	380	16 x 25	525	16 x 30	365	16 x 30	440
180	187	12.5 x 35	420	12.5 x 35	560	16 x 35	500	16 x 35	469
220	227	16 x 30	680	16 x 30	643	16 x 40	615	16 x 35	485
270	277	16 x 30	728	18 x 30	740				
330	337	18 x 35	830	18 x 30	808				
390	397	18 x 35	850	18 x 35	904				
470	477	18 x 40	880	18 x 40	1016				
560	567	18 x 45	925	18 x 45	1112				

Maximum Allowable Ripple Current (mA rms) at 105°C 120Hz

Case Size φD x L(mm)

Voltage (Code)		350V (2V)		400V (2G)		420V (2M)		450V (2W)	
Cap.(μF)	Code	Case Size	Ripple Current	Case Size	Ripple Current	Case Size	Ripple Current	Case Size	Ripple Current
0.47	474	6.3 x 11	8						
1	105	6.3 x 11	18	6.3 x 11	19	6.3 x 11	15	6.3 x 11	16
2.2	225	6.3 x 11	25	8 x 12	30	8 x 12	29	8 x 12	24
3.3	335	8 x 12	40	8 x 12	35	8 x 12	35	8 x 12	29
4.7	475	8 x 12	43	8 x 12	40	10 x 16	52	10 x 16	42
10	106	10 x 16	73	10 x 16	78	10 x 20	85	12.5 x 25	84
18	186	12.5 x 20	100	12.5 x 20	105	12.5 x 25	124	10 x 30	108
22	226	12.5 x 20	150	12.5 x 20	148	12.5 x 25	140	12.5 x 25	131
27	276	12.5 x 25	177	10 x 30	192	12.5 x 25	170	12.5 x 30	164
33	386	12.5 x 25	200	12.5 x 25	193	16 x 25	200	16 x 25	237
39	396	12.5 x 25	258	16 x 25	251	12.5 x 30	248	12.5 x 35	256
47	476	12.5 x 25	265	12.5 x 30	266	12.5 x 35	288	16 x 30	305
56	566	16 x 30	280	12.5 x 35	336	12.5 x 40	344	16 x 30	352
68	686	16 x 30	288	16 x 30	396	16 x 30	408	18 x 30	366
82	826	18 x 30	372	18 x 30	443	16 x 35	456	18 x 30	440
100	107	18 x 35	460	18 x 30	489	18 x 35	488	18 x 35	490
120	127			18 x 35	570	18 x 40	528	18 x 40	592
150	157			18 x 40	616	18 x 45	568	18 x 45	640
180	187			18 x 50	704				

Maximum Allowable Ripple Current (mA rms) at 105°C 120Hz

Case Size φD x L(mm)

### RIPPLE CURRENT MULTIPLIER

Frequency Coefficient							
Rated Voltage(V)	Cap.(μF)	Coefficient	50	120	300	1k	10k~
6.3 ~ 100	~ 47		0.75	1.00	1.35	1.57	2.00
	68 ~ 470		0.80	1.00	1.23	1.34	1.50
	≥ 560		0.85	1.00	1.10	1.13	1.15
160 ~ 450	0.47 ~ 220		0.80	1.00	1.25	1.40	1.60
	≥ 270		0.90	1.00	1.10	1.13	1.15