

Aluminum Electrolytic Capacitors

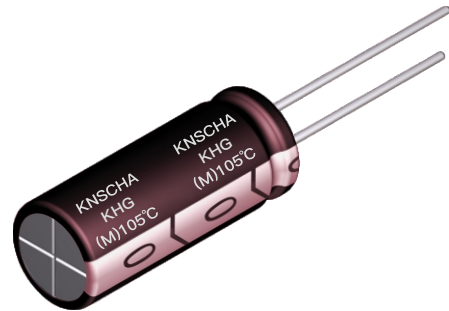
Customer :	KHG Series										
Electric Characteristics:											
KNSCHA Part Number	Cap. (120Hz) (uF)	Cap. Tol. (%)	Rate Volt. (V-DC)	Surge Volt. (V-DC)	Oper. Temp. (°C)	Nominal Case Size D*L(mm)	Leakage Current Max(uA)	D.F. Max ()	RC 120HZ (mArms)	ESR 100KHZ (Ω)	Normal servicelife (Hours)
152EC0412	100	±20	50	62	-40~105℃	8*12	50.0	0.10	560	0.160	6000
152EC0413	470	±20	35	43	-40~105℃	10*16	164.5	0.12	1278	0.060	7000
152EC0414	10	±20	50	62	-40~105℃	5*11	5.0	0.10	121	2.500	5000
152EC0415	100	±20	35	43	-40~105℃	6.3*11	35.0	0.12	428	0.210	5000
152EC0416	100	±20	35	43	-40~105℃	6.3*11	35.0	0.12	428	0.210	5000
152EC0417	1000	±20	35	43	-40~105℃	13*20	350.0	0.12	2023	0.033	10000
152EC0418	1000	±20	35	43	-40~105℃	13*20	350.0	0.12	2023	0.033	10000
152EC0419	220	±20	25	31	-40~105℃	6.3*12	55.0	0.14	504	0.210	5000
152EC0420	47	±20	50	62	-40~105℃	6.3*12	23.5	0.10	220	0.380	5000
152EC0421	100	±20	50	62	-40~105℃	8*12	50.0	0.10	560	0.160	7000
152EC0422	220	±20	35	43	-40~105℃	8*12	77.0	0.12	735	0.130	7000
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KHG Series

FEATURES

- 105 °C High Ripple Current, Low impedance
- Load life 4000~10000 hours
- Compliant to the RoHS directive

- 高纹波、低阻
- 寿命4000~10000小时
- RoHS指令对策品



SPECIFICATIONS

Items 项目	Characteristics 特性									
Capacitance Tolerance 静电容量误差	± 20%(120Hz,20°C)									
Operating Temperature Range 适用温度范围	-40 ~ +105°C									
Rated Voltage Range 额定电压范围	6.3 ~ 100VDC									
Leakage Current 泄漏电流	$I \leq 0.01CV$ or 3 (μA) which is greater. (After 2 minutes application of DC rated voltage, at 20 °C)									
Dissipation Factor 散逸因素(tan δ)	Measurement Frequency: 120Hz. Temperature: 20°C									
	Rated Voltage(V)	6.3	10	16	25	35	50	63	100	
	tan δ (Max)	0.22	0.19	0.16	0.14	0.12	0.10	0.09	0.08	
	When nominal capacitance over 1000μF, tanδ shall be added 0.02 to the listed value with increase of every 1000μF.									
Low Temperature Stability 低温特性	Measurement Frequency: 120Hz.									
	Rated Voltage(V)	6.3	10	16	25	35	50	63	100	
	Impedance Ratio(Max) 阻抗比率(最大值)	Z(-25°C)/Z(20°C)	4	3	2	2	2	2	2	2
	Z(-40°C)/Z(20°C)	8	6	4	3	3	3	3	3	
Load Life 负荷寿命	Case Size	$\phi D \leq 6.3$			$\phi D = 8, 10$			$\phi D \geq 13$		
	Rated Voltage(V)	6.3~10 V		4,000hours		6,000hours		8,000hours		
		16~100 V		5,000hours		7,000hours		10,000hours		
	Capacitance Change	Within ± 25% of Initial Value								
	tan δ	200% or less of Initial Specified Value								
Leakage Current	Initial Specified Value or less									
Shelf Life 放置寿命	The following specifications shall be satisfied when the capacitors are restored to 20°C after exposing them for 1,000 hours 105°C without voltage applied. Before the measurement, the capacitor shall be preconditioned by applying voltage according to them 4.1 of JIS C5101-4.									
	Capacitance Change	Within ± 20% of Initial Value								
	tan δ	200% or less of Initial Specified Value								
	Leakage Current	Initial Specified Value or less								
Standards 参照标准	JIS C 5101-4 (IEC 60384)									

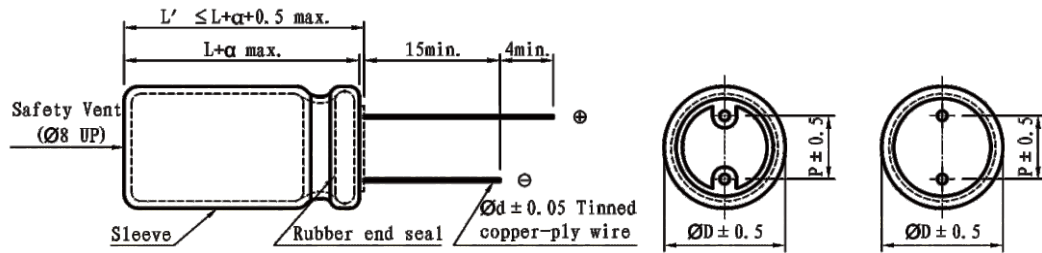
Frequency Coefficient of Permissible Ripple Current

Capacitance (μF)	Frequency (Hz)				
	50	120	300	1K	100K
≤ 33	0.50	0.55	0.70	0.90	1.00
47 ~ 330	0.60	0.70	0.85	0.95	1.00
470 ~ 1000	0.65	0.75	0.90	0.98	1.00
1200 ~ 18000	0.70	0.80	0.95	1.00	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.

KHG Series

DIMENSIONS(mm)



ϕD	5	6.3	8	10	13	16	18
P	2.0	2.5	3.5	5.0	5.0	7.5	7.5
ϕd	0.5	0.5	0.5	0.6	0.6	0.8	0.8

α	(L < 16) 1.5 (L ≥ 16) 2.0
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STANDARD RATINGS

D×L(mm) ; R.C.(mA rms) at 105°C 100KHz ; IMP (Ω max)at 20°C,-10°C 100KHz.

Cap (μF)	V	6.3				10				
		Item	D x L	IMP		R.C.	D x L	IMP		R.C.
				20°C	-10°C			20°C	-10°C	
100						5x11	0.580	2.300	215	
150		5x11		0.570	2.300	210	5x11	0.580	2.300	230
220		6.3x11		0.250	0.900	320	6.3x11	0.220	0.870	340
330		6.3x11		0.210	0.870	340	6.3x11	0.220	0.870	380
470		8x12		0.150	0.580	520	8x12	0.130	0.520	640
680		8x12		0.130	0.520	645	8x16	0.086	0.350	845
	10x13						0.080	0.310	865	
820		10x13		0.080	0.320	865	10x16	0.070	0.280	1015
1000		8x16		0.085	0.350	870	8x20	0.068	0.270	1050
	10x16						0.060	0.240	1215	
1200		8x20		0.071	0.260	1050	10x20	0.045	0.180	1410
		10x16		0.062	0.240	1215				
1500		10x20		0.045	0.180	1410	10x25	0.041	0.170	1610
1800		13x16		0.048	0.160	1460	13x16	0.049	0.160	1450
							13x21	0.039	0.150	1710
2200		10x25		0.042	0.170	1650	10x30	0.030	0.120	1920
							13x21	0.035	0.120	1910
							16x15	0.042	0.120	1900
2700		10x30		0.030	0.120	1900	18x15	0.042	0.110	2220
		16x15		0.041	0.120	1945				
3300		13x21		0.034	0.120	1900	13x25	0.026	0.089	2230
3900		13x25		0.026	0.088	2240	13x30	0.023	0.078	2660
		18x15		0.042	0.110	2210	16x22	0.026	0.078	2540
4700		13x30		0.023	0.078	2650	13x35	0.020	0.065	2890
5600		13x35		0.020	0.065	2890	13x40	0.016	0.055	3360
							16x26	0.020	0.060	2940
							18x20	0.025	0.066	2870
6800		13x40		0.016	0.055	3350	16x32	0.016	0.050	3460
		16x26		0.020	0.060	2940				
		18x20		0.025	0.066	2870				
8200		16x32		0.016	0.050	3450	16x36	0.015	0.044	3610
							18x32	0.015	0.040	4180
10000		16x36		0.014	0.044	3620	16x40	0.013	0.038	4090
		18x25		0.018	0.049	3150	18x35	0.012	0.038	4230
12000		16x40		0.012	0.038	4090	18x40	0.011	0.032	4290
		18x32		0.014	0.040	4180				
15000		18x35		0.013	0.038	4230				
18000		18x40		0.012	0.032	4290				

※ 13mm may be replaced by 12.5mm upon customer's request.

KHG Series

STANDARD RATINGS

D×L(mm) ; R.C.(mA rms) at 105°C 100KHz ; IMP (Ω max)at 20°C,-10°C 100KHz.

Cap (μF)	V (Code) Item	16 (1C)			25 (1E)				
		D x L	IMP		R.C.	D x L	IMP		R.C
			20°C	-10°C			20°C	-10°C	
47									
56	5x11	0.570	2.300	220	5x11	0.570	2.300	240	
100	6.3x11	0.210	0.820	310	6.3x11	0.210	0.870	340	
120	6.3x11	0.210	0.870	340					
220	8x12	0.190	0.850	510	8x12	0.120	0.520	650	
330	8x12	0.120	0.520	650	8x16	0.087	0.350	850	
					10x13	0.081	0.320	870	
470	8x16	0.086	0.350	840	8x20	0.070	0.270	1050	
	10x13	0.080	0.320	865	10x16	0.060	0.240	1210	
680	8x20	0.069	0.270	1060	10x20	0.045	0.180	1410	
	10x16	0.060	0.240	1210	13x16	0.049	0.160	1460	
820	10x20	0.052	0.220	1310	10x25	0.041	0.170	1660	
1000	10x20	0.045	0.180	1410	10x30	0.030	0.120	1920	
					13x21	0.034	0.120	1910	
					16x15	0.042	0.120	1940	
1200	10x25	0.043	0.170	1650	18x15	0.043	0.110	2220	
1500	10x30	0.030	0.120	1920	13x25	0.026	0.089	2240	
	13x21	0.035	0.120	1910					
	16x15	0.042	0.120	1940					
1800	13x25	0.028	0.095	2140	13x30	0.024	0.078	2660	
					16x22	0.026	0.078	2540	
2200	13x25	0.026	0.089	2240	13x35	0.020	0.065	2890	
	18x15	0.042	0.110	2220	18x20	0.025	0.066	2870	
2700	13x30	0.023	0.077	2650	13x40	0.016	0.056	3360	
	16x22	0.026	0.078	2540	16x26	0.021	0.060	2940	
3300	13x35	0.020	0.066	2890	16x32	0.016	0.050	3460	
					18x25	0.018	0.048	3150	
3900	13x40	0.016	0.056	3350	16x36	0.014	0.043	3620	
	16x26	0.021	0.060	2930					
	16x22	0.025	0.067	2860					
4700	16x32	0.016	0.050	3450	16x40	0.012	0.038	4080	
	18x25	0.018	0.049	3150	18x35	0.013	0.040	4230	
5600	16x36	0.015	0.044	3620	18x40	0.011	0.032	4290	
	18x32	0.015	0.040	4180					
6800	16x40	0.012	0.038	4080					
8200	18x35	0.014	0.038	4230					
10000	18x40	0.011	0.032	4290					

※ 13mm may be replaced by 12.5mm upon customer's request.

KHG Series

STANDARD RATINGS

D×L(mm) ; R.C.(mA rms) at 105°C 100KHz ; IMP (Ω max)at 20°C,-10°C 100KHz.

Cap (μF)	V (Code) Item	35 (1V)			50 (1H)			
		D x L	IMP		R.C.	D x L	IMP	
			20°C	-10°C			20°C	-10°C
22					5x11	0.700	2.800	180
33	5x11	0.560	2.300	220				
47	6.3x11	0.350	1.400	280	6.3x11	0.380	1.500	220
56	6.3x11	0.210	0.860	340	6.3x11	0.300	1.200	300
100	8x12	0.150	0.560	510	8x12	0.160	0.670	560
120					8x16	0.120	0.480	740
150	8x12	0.130	0.520	650	10x13	0.120	0.480	770
180	8x16	0.086	0.350	800	8x20	0.090	0.360	920
220	8x16	0.086	0.350	850	10x16	0.083	0.340	1050
	10x13	0.080	0.320	865				
270	8x20	0.070	0.260	1060	10x20	0.060	0.240	1230
					13x16	0.062	0.200	1250
330	10x16	0.060	0.240	1210	10x25	0.053	0.220	1450
470	10x20	0.045	0.180	1410	10x30	0.043	0.170	1695
					13x21	0.044	0.150	1670
					16x15	0.054	0.170	1695
560	10x25	0.041	0.160	1650	13x25	0.033	0.110	1950
					18x15	0.053	0.150	1940
680	10x30	0.030	0.120	1920	13x30	0.030	0.100	2320
	13x21	0.033	0.132	1910				
	16x15	0.041	0.143	1950				
820	13x25	0.028	0.088	2100	13x35	0.023	0.081	2520
					16x22	0.033	0.100	2220
1000	13x25	0.028	0.088	2230	13x40	0.020	0.069	2930
					16x26	0.025	0.075	2555
					18x20	0.036	0.097	2490
1200	13x30	0.023	0.078	2660	16x32	0.021	0.066	3020
	16x22	0.026	0.078	2530	18x25	0.025	0.070	2750
1500	13x35	0.020	0.065	2880	16x36	0.018	0.056	3150
1800	13x40	0.016	0.056	3350	16x40	0.016	0.048	3720
	16x26	0.020	0.060	2940				
	18x20	0.025	0.066	2870				
2200	16x32	0.016	0.050	3500	18x35	0.017	0.046	3690
	18x25	0.019	0.049	3140				
2700	16x36	0.015	0.044	3620	18x40	0.014	0.038	3810
	18x32	0.014	0.040	4180				
3300	16x40	0.013	0.038	4090				
	18x35	0.014	0.040	4230				
3900	18x40	0.012	0.033	4290				

※ 13mm may be replaced by 12.5mm upon customer's request.

KHG Series

STANDARD RATINGS

D×L(mm) ; R.C.(mA rms) at 105°C 100KHz ; IMP (Ω max)at 20°C,-10°C 100KHz.

Cap (μF)	V (Code) Item	63 (1J)			100 (2A)				
		D x L	IMP		R.C.	D x L	IMP		
			20°C	-10°C			20°C	-10°C	
6.8					5x11	2.200	9.200	56	
15		5x11	2.200	9.200	56	6.3x11	1.200	5.000	120
27					8x12	0.72	3.000	235	
33		6.3x11	1.200	5.000	120				
39					8x16	0.62	2.540	280	
47		8x12	0.680	3.100	190	10x13	0.430	1.800	290
56		8x12	0.620	2.800	235	8x20	0.320	1.600	340
68					10x16	0.300	1.500	358	
82		8x16	0.450	2.100	310	10x20	0.210	0.940	470
		10x13	0.430	1.800	300	13x16	0.230	1.100	468
100		10x16	0.350	1.800	320	10x25	0.200	0.840	536
120		8x20	0.330	1.600	362	10x30	0.150	0.710	666
		10x16	0.300	1.500	357	13x21	0.160	0.640	690
150					16x15	0.140	0.660	795	
180		10x20	0.200	0.940	470	13x25	0.120	0.450	790
		13x16	0.230	1.100	465	18x15	0.120	0.500	930
220		10x25	0.200	0.840	531	13x30	0.110	0.450	905
						16x22	0.090	0.370	1050
270		10x30	0.150	0.700	663	13x35	0.082	0.350	1060
		13x21	0.160	0.640	690				
		16x15	0.130	0.650	795	16x26	0.072	0.270	1250
330		13x25	0.120	0.450	790	13x40	0.070	0.300	1190
						18x20	0.080	0.300	1250
390		18x15	0.120	0.500	920	16x32	0.053	0.200	1570
						18x25	0.056	0.210	1490
470		13x30	0.100	0.420	910	16x36	0.045	0.170	1790
		16x22	0.090	0.380	1040	18x32	0.047	0.170	1640
560		13x35	0.082	0.350	1050	16x40	0.040	0.150	2030
		16x26	0.073	0.270	1250				
680		13x40	0.070	0.300	1190	18x35	0.040	0.150	1790
		18x20	0.080	0.300	1240				
820		16x32	0.053	0.200	1580	18x40	0.036	0.130	2340
		18x25	0.057	0.210	1490				
1000		16x36	0.045	0.170	1790				
		18x32	0.047	0.170	1640				
1200		16x40	0.039	0.150	2020				
		18x35	0.040	0.150	1790				
1500		18x40	0.035	0.130	2340				

※ 13mm may be replaced by 12.5mm upon customer's request.

Note: All design and specification are for reference only and is subject to change without prior notice. If any doubt about safety for your application, please contact KNSCHA immediately for technical assistance before purchase.
备注: 以上所提供的设计及特性参数仅供参考, 任何修改不作预先通知。如果在使用上有疑问, 请再购买前与科尼盛联系, 以便我们提供技术上的服务和协助。