

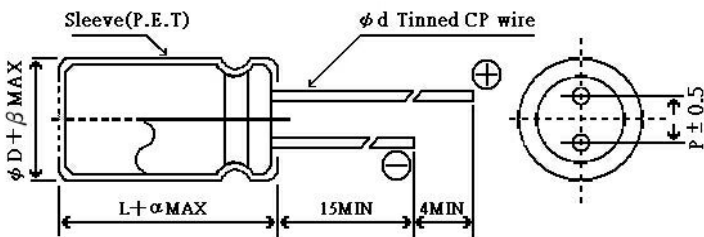
### HG series

**High Ripple Low Impedance**  
**Lower impedance at high frequency range.**  
**Smaller case size and higher ripple current.**

#### ■ SPECIFICATIONS

Item	Performance Characteristics	
Operating Temperature Range	-40~+105°C	
Voltage Range	6.3V~100V	
Capacitance Range	6.8~18000 μF	
Capacitance Tolerance	±20% at 120Hz, 20°C	
Tan δ	For capacitance of more than 1000 μF, add 0.02 for every increase of 1000 μF, 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
Leakage Current	Rated voltage (V)	6.3~100
	Leakage Current	After 2 minutes' application of rated voltage, leakage current is not more than 0.01CV or 3 μA, whichever is greater.
Stability at Low Temperature	Rated Voltage(V)	6.3    10    16    25    35~100
	Impedance Ration ZT/Z20 (MAX.)	Z-25°C/Z+20°C    —    —    —    —    — Z-40°C/Z+20°C    3    3    3    3    3
Load Life	After an application of D.C. bias voltage plus the rated ripple current for 3000 hours' (φD ≤ 6.3 and 8=2000 hours) at 105°C the peak voltage shall not exceed the rated D.C. voltage, the capacitors meet the characteristic requirement listed at below.	
	Capacitance Change	Within ±25% of initial value
	Tan δ	Not exceeding 200% of initial specified value
Shelf Life	After storing capacitors under no load at 85°C for 1000 hours. they will meet the specified value for endurance characteristics listed above.	
	Leakage Current	Not exceeding Initial specified value

#### ■ RADIAL LEAD TYPE



α	(L < 20)	1.5
	(L ≥ 20)	2.0

φD	5	6.3	8	10	12.5	16	18
P	2.0	2.5	3.5	5.0	5.0	7.5	7.5
φd	0.5	0.5	0.6	0.6	0.6	0.8	0.8
β	0.5	0.5	0.5	0.5	0.5	0.5	0.5

#### ■ Allowable Ripple Current VS. Ambient Temperature

Ambient temp. (°C)	~+70	+85	+105
Ripple coefficient	1.78	1.4	1.0

#### ■ Frequency Coefficient of Allowable Ripple Current

V	Frequency (Hz)					
	Cap. (μF)	50Hz	120Hz	300Hz	1KHz	100KHz~
6.3~100	~47	0.20	0.30	0.50	0.80	1.00
	68~330	0.55	0.65	0.75	0.85	1.00
	390~1000	0.70	0.75	0.80	0.90	1.00
	1200~18000	0.80	0.85	0.90	0.95	1.00

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#### STANDARD RATINGS

D×L (mm)

W.V. (Code)		6.3V(0J)				10V(1A)			
S. V.		8				13			
Cap(μF)	Item	Case size φD×L(mm)	Allowable Ripple (mA. rms) 105°C/100KHz	Impedance (ΩMAX.)		Case size φD×L(mm)	Allowable Ripple (mA. rms) 105°C/100KHz	Impedance (ΩMAX.)	
				20°C/100KHz	-10°C/100KHz			20°C/100KHz	-10°C/100KHz
100	101					5×11	210	0.58	1.21
150	151	5×11	210	0.58	1.21				
220	221					6.3×11	340	0.22	0.50
330	331	6.3×11	340	0.22	0.50				
470	471					8×11.5	640	0.13	0.29
680	681	8×11.5	640	0.13	0.29	8×15	840	0.087	0.19
820	821	10×12.5	865	0.080	0.16	10×12.5	865	0.080	0.16
1000	102	8×15	840	0.087	0.19	8×20	1050	0.069	0.15
1200	122	8×20	1050	0.069	0.15	10×16	1210	0.060	0.13
		10×16	1210	0.060	0.13	10×20	1400	0.046	0.10
1500	152	10×20	1400	0.046	0.10	10×25	1650	0.042	0.096
						12.5×16	1450	0.049	0.107
1800	182	12.5×16	1450	0.049	0.107				
2200	222	10×25	1650	0.042	0.096	10×31.5	1910	0.031	0.074
2700	272	10×31.5	1910	0.031	0.074	12.5×20	1900	0.035	0.080
3300	332	12.5×20	1900	0.035	0.080				
3900	392	12.5×25	2230	0.027	0.056	12.5×25	2230	0.027	0.056
						12.5×31.5	2650	0.024	0.052
4700	472	12.5×31.5	2650	0.024	0.052	16×20	2530	0.027	0.062
5600	562	16×20	2530	0.027	0.062				
6800	682	16×25	2930	0.021	0.048	16×25	2930	0.021	0.048
						16×31.5	3450	0.017	0.035
8200	822	16×31.5	3450	0.017	0.035	18×25	3140	0.019	0.043
						16×35.5	3610	0.015	0.034
10000	103	16×35.5	3610	0.015	0.034	18×31.5	4170	0.015	0.033
		18×25	3140	0.019	0.043	18×35.5	4220	0.014	0.032
12000	123	18×31.5	4170	0.015	0.033				
15000	153	18×35.5	4220	0.014	0.032	18×40	4280	0.012	0.025
18000	183	18×40	4280	0.012	0.025				

#### STANDARD RATINGS

D×L (mm)

W.V. (Code)		16V(1C)				25V(1E)			
S. V.		20				32			
Cap(μF)	Item	Case size φD×L(mm)	Allowable Ripple (mA. rms) 105°C/100KHz	Impedance (ΩMAX.)		Case size φD×L(mm)	Allowable Ripple (mA. rms) 105°C/100KHz	Impedance (ΩMAX.)	
				20°C/100KHz	-10°C/100KHz			20°C/100KHz	-10°C/100KHz
47	470					5×11	210	0.58	1.21
56	560	5×11	210	0.58	1.21				
100	101					6.3×11	340	0.22	0.50
150	151	6.3×11	340	0.22	0.50				
220	221					8×11.5	640	0.13	0.29
330	331	8×11.5	640	0.13	0.29	8×15	840	0.087	0.19
						10×12.5	865	0.080	0.16
470	471	8×15	840	0.087	0.19	8×20	1050	0.069	0.15
		10×12.5	865	0.080	0.16	10×16	1210	0.060	0.13
680	681	8×20	1050	0.069	0.15	10×20	1400	0.046	0.10
		10×16	1210	0.060	0.13	12.5×16	1450	0.049	0.107
820	821					10×25	1650	0.042	0.096
1000	102	10×20	1400	0.046	0.10	10×31.5	1910	0.031	0.074
		12.5×16	1450	0.049	0.107	12.5×20	1900	0.035	0.080
1200	122	10×25	1650	0.042	0.096				
1500	152	10×31.5	1910	0.031	0.074	12.5×25	2230	0.027	0.056
		12.5×20	1900	0.035	0.080				
1800	182					12.5×31.5	2650	0.024	0.052
						16×20	2530	0.027	0.062
2200	222	12.5×25	2230	0.027	0.056				
2700	272	12.5×31.5	2650	0.024	0.052	16×25	2930	0.021	0.048
		16×20	2530	0.027	0.062				
3300	332					16×31.5	3450	0.017	0.035
						18×25	3140	0.019	0.043
3900	392	16×25	2930	0.021	0.048	16×35.5	3610	0.015	0.034
						18×31.5	4170	0.015	0.033
4700	472	16×31.5	3450	0.017	0.035	18×35.5	4220	0.014	0.032
		18×25	3140	0.019	0.043				
5600	562	16×35.5	3610	0.015	0.034	18×40	4280	0.012	0.025
		18×31.5	4170	0.015	0.033				
8200	822	18×35.5	4220	0.014	0.032				
10000	103	18×40	4280	0.012	0.025				

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**STANDARD RATINGS**

D×L (mm)

W.V. (Code)		35V(1V)				50V(1H)			
S. V.		44				63			
Cap(μF)	Item	Case size φD×L(mm)	Allowable Ripple (mA. rms) 105°C/100KHz	Impedance (ΩMAX.)		Case size φD×L(mm)	Allowable Ripple (mA. rms) 105°C/100KHz	Impedance (ΩMAX.)	
				20°C/100KHz	-10°C/100KHz			20°C/100KHz	-10°C/100KHz
10	100					5×11	100	1.50	3.30
22	220					5×11	180	0.70	1.54
33	330	5×11	210	0.58	1.21				
56	560	6.3×11	340	0.22	0.50	6.3×11	295	0.30	0.63
100	101					8×11.5	555	0.17	0.39
120	121					8×15	730	0.12	0.28
150	151	8×11.5	640	0.13	0.29	10×12.5	760	0.12	0.26
180	181					8×20	910	0.091	0.19
220	221	8×15	840	0.087	0.19	10×16	1050	0.084	0.19
		10×12.5	865	0.080	0.16				
270	271	8×20	1050	0.069	0.15	10×20	1220	0.060	0.14
						12.5×16	1260	0.061	0.14
330	331	10×16	1210	0.060	0.13	10×25	1440	0.055	0.115
470	471	10×20	1400	0.046	0.10	10×31.5	1690	0.043	0.094
		12.5×16	1450	0.049	0.107	12.5×20	1660	0.045	0.099
560	561	10×25	1650	0.042	0.096	12.5×25	1950	0.034	0.071
680	681	10×31.5	1910	0.031	0.074	12.5×31.5	2310	0.030	0.066
		12.5×20	1900	0.035	0.080				
820	821					16×20	2210	0.034	0.081
1000	102	12.5×25	2230	0.027	0.056	16×25	2555	0.025	0.057
1200	122	12.5×31.5	2650	0.024	0.052	16×31.5	3010	0.022	0.052
		16×20	2530	0.027	0.062				
1500	152					16×35.5	3150	0.019	0.047
1800	182	16×25	2930	0.021	0.048	16×35.5	3150	0.019	0.047
						18×31.5	3635	0.021	0.048
2200	222	16×31.5	3450	0.017	0.035	18×35.5	3680	0.017	0.040
		18×25	3140	0.019	0.043				
2700	272	16×35.5	3610	0.015	0.034	18×40	3800	0.014	0.032
		18×31.5	4170	0.015	0.033				
3300	332	18×35.5	4220	0.014	0.032				
3900	392	18×40	4280	0.012	0.025				

**STANDARD RATINGS**

D×L (mm)

W.V. (Code)		63V(1J)				100V(2A)			
S. V.		79				125			
Cap(μF)	Item	Case size φD×L(mm)	Allowable Ripple (mA. rms) 105°C/100KHz	Impedance (ΩMAX.)		Case size φD×L(mm)	Allowable Ripple (mA. rms) 105°C/100KHz	Impedance (ΩMAX.)	
				20°C/100KHz	-10°C/100KHz			20°C/100KHz	-10°C/100KHz
6.8	6R8					5×11	55	2.30	4.83
15	150	5×11	55	2.30	4.83	6.3×11	115	1.20	2.76
27	270					8×11.5	232	0.63	1.512
33	330	6.3×11	115	1.20	2.76				
39	390					8×15	300	0.45	1.035
47	470					10×12.5	288	0.43	0.903
56	560	8×11.5	232	0.63	1.512	8×20	362	0.33	0.79
68	680					10×16	357	0.31	0.713
82	820	8×15	300	0.45	1.035	10×20	466	0.21	0.504
		10×12.5	288	0.43	0.903	12.5×16	466	0.23	0.575
100	101					10×25	531	0.20	0.46
120	121	8×20	362	0.33	0.79	10×31.5	663	0.15	0.36
		10×16	357	0.31	0.713	12.5×20	690	0.16	0.384
180	181	10×20	466	0.21	0.504	12.5×25	784	0.12	0.276
		12.5×16	466	0.23	0.575				
220	221	10×25	531	0.20	0.46	12.5×31.5	905	0.10	0.24
						16×20	1040	0.091	0.191
270	271	10×31.5	663	0.15	0.36	16×25	1250	0.073	0.167
		12.5×20	690	0.16	0.384				
330	331	12.5×25	784	0.12	0.276				
390	391					16×31.5	1570	0.054	0.113
						18×25	1490	0.057	0.125
470	471	12.5×31.5	905	0.10	0.24	16×35.5	1790	0.045	0.099
		16×20	1040	0.091	0.191	18×31.5	1630	0.047	0.103
560	561	16×25	1250	0.073	0.167				
680	681					18×35.5	1790	0.040	0.084
820	821	16×31.5	1570	0.054	0.113	18×40	2330	0.036	0.079
		18×25	1490	0.057	0.125				
1000	102	16×35.5	1790	0.045	0.099				
		18×31.5	1630	0.047	0.103				
1200	122	18×35.5	1790	0.040	0.084				
1500	152	18×40	2330	0.036	0.079				