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**EN:** This Datasheet is presented by the manufacturer.

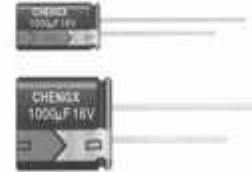
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# GR Series

+105°C, High Ripple Current(高纹波), Low Impedance(低阻抗品)

## FEATURES

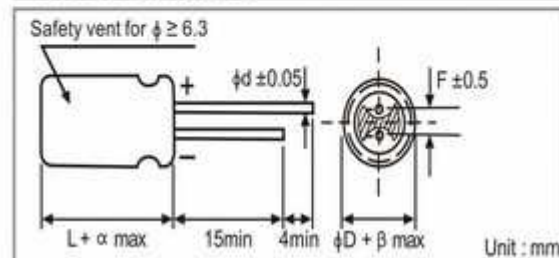
1. Low impedance for high frequency.
2. Life time: 2000~4000 hours at 105°C.



## SPECIFICATIONS

Item	Performance Characteristics									
Operating Temperature Range	-40 to +105°C									
Rated Working Voltage Range	6.3 to 100V									
Nominal Capacitance Range	2.2 to 4700μF									
Capacitance Tolerance	±20% (120Hz, +20°C)									
Leakage Current	I ≤ 0.01CV or 3(μA) whichever is greater measured after 2 minutes application of rated working voltage at 20°C									
tan δ (120Hz, +20°C)	Working 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	
	For capacitance value > 1000μF, add 0.02 per another 1000μF									
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	4	3	2	2	2	2	2	2	
	Z-40°C / Z+20°C	8	6	4	3	3	3	3	3	
High Temperature Loading	Test conditions				Post test requirements at +20°C					
	Duration :	φD	5~6.3	8~10	12.5	Leakage current : ≤ Initial specified value				
	Load life :	2000h	3000h	4000h	Cap. change : within ±25% of initial measured value					
	Ambient temp. :	+105°C				tan δ : ≤ 150% of initial specified value				
	Applied voltage :	Rated DC working voltage with rated ripple current								
Shelf Life	Test conditions				Post test requirements at +20°C					
	Duration :	1000 hours				Same limits for high temperature loading.				
	Ambient temp. :	+105°C								
	Applied voltage :	(None)								
Others	JIS C - 5101 (IEC 60384)									

## CASE SIZE TABLE



φD	5	6.3	8(L<20)	8(L≥20)	10	12.5		
F	2.0	2.5	3.5		5.0	5.0		
φd	0.5		0.6		0.6			
α	(L < 20) 1.5				(L ≥ 20) 2.0			
β	(D < 20) 0.5				(D ≥ 20) 1.0			

# GR Series

+105°C, High Ripple Current(高紋波), Low Impedance(低阻抗品)

## STANDARD RATINGS

Voltage (Code)		6.3V (0J)			10V (1A)			16V (1C)		
Cap. (μF)	Code	Case Size	Impedance	Ripple Current	Case Size	Impedance	Ripple Current	Case Size	Impedance	Ripple Current
100	107							6.3x11	0.220	340
120	127							6.3x11	0.220	340
150	157				6.3x11	0.220	340	6.3x11	0.220	340
								8x12	0.130	640
180	187	6.3x11	0.220	340	6.3x11	0.220	340	6.3x11	0.220	340
								8x12	0.130	640
220	227	6.3x11	0.220	340	6.3x11	0.220	340	6.3x11	0.220	340
								8x12	0.130	640
270	277	6.3x11	0.220	340	6.3x11	0.220	340	8x12	0.130	640
					8x12	0.130	640			
330	337	6.3x11	0.220	340	6.3x11	0.220	340	8x12	0.130	640
		8x12	0.130	640	8x12	0.130	640			
390	397	8x12	0.130	640	8x12	0.130	640	8x12	0.130	640
470	477	8x12	0.130	640	8x12	0.130	640	8x12	0.130	640
								10x12.5	0.080	865
560	567	8x12	0.130	640	8x12	0.130	640	10x12.5	0.080	865
680	687	8x12	0.130	640	8x12	0.130	640	8x16	0.087	640
								10x12.5	0.080	865
820	827	8x12	0.130	640	10x12.5	0.080	865	10x16	0.060	1210
		10x12.5	0.080	865						
1000	108	8x12	0.130	640	8x16	0.087	640	10x16	0.060	1210
		10x12.5	0.080	865	10x16	0.060	1210			
1200	128	8x16	0.087	840	10x20	0.046	1400	10x20	0.046	1400
		10x12.5	0.080	865						
1500	158	8x20	0.069	1050	10x20	0.046	1400	10x20	0.046	1400
		10x16	0.060	1210						
1800	188	10x20	0.046	1400	10x20	0.046	1400	10x25	0.042	1650
								12.5x20	0.035	1900
2200	228	10x20	0.046	1400	10x20	0.046	1400	12.5x20	0.035	1900
2700	278	10x25	0.042	1650	10x25	0.042	1650	12.5x25	0.030	2124
		12.5x20	0.035	1900	12.5x20	0.035	1900			
3300	338	10x25	0.042	1650	12.5x25	0.030	2124			
		12.5x20	0.035	1900						
3900	398	12.5x20	0.035	1900						
4700	478	12.5x25	0.030	2124						

Maximum Allowable Ripple Current (mA rms) at 105°C 100kHz

Case Size φD x L(mm)

Maximum Impedance (Ω) at 20°C 100kHz

+105°C, High Ripple Current(高紋波), Low Impedance(低阻抗品)

## STANDARD RATINGS

Voltage (Code)		25V (1E)			35V (1V)			50V (1H)		
Cap. (μF)	Code	Case Size	Impedance	Ripple Current	Case Size	Impedance	Ripple Current	Case Size	Impedance	Ripple Current
33	336							6.3x11	0.300	295
39	396							6.3x11	0.300	295
47	476				6.3x11	0.220	340	6.3x11	0.300	295
56	566				6.3x11	0.220	340	8x12	0.170	555
68	686				6.3x11	0.220	340	8x12	0.170	555
82	826	6.3x11	0.220	340	8x12	0.130	640	8x12	0.170	555
100	107	6.3x11	0.220	340	8x12	0.130	640	10x12.5	0.120	760
120	127	8x12	0.130	640	8x12	0.130	640	8x16	0.120	730
								10x12.5	0.120	760
150	157	8x12	0.130	640	8x12	0.130	640	10x16	0.084	1050
180	187	8x12	0.130	640	10x12.5	0.080	865	8x20	0.091	910
								10x16	0.084	1050
220	227	8x12	0.130	640	8x12	0.130	640	10x16	0.084	1050
					8x16	0.087	840			
					10x12.5	0.080	865			
270	277	8x12	0.130	640	10x16	0.060	1210	10x25	0.055	1440
		10x12.5	0.080	865						
330	337	8x12	0.130	640	8x20	0.069	1050	12.5x20	0.045	1660
		10x12.5	0.080	865	10x12.5	0.080	865			
					10x16	0.060	1210			
390	397	10x12.5	0.080	865	10x16	0.060	1210	12.5x20	0.045	1660
470	477	8x16	0.087	840	10x16	0.060	1210	12.5x25	0.034	1950
		10x12.5	0.080	865						
560	567	10x16	0.060	1210	10x20	0.046	1400	12.5x25	0.034	1950
680	687	10x16	0.060	1210	10x20	0.046	1400			
820	827	10x20	0.046	1400	10x25	0.042	1650			
					12.5x20	0.035	1900			
1000	108	10x20	0.046	1400	12.5x20	0.035	1900			
					12.5x25	0.030	2124			
1200	128	10x20	0.046	1400						
1500	158	10x25	0.042	1650						
		12.5x20	0.035	1900						
1800	188	12.5x25	0.030	2124						
2200	228	12.5x25	0.030	2124						

Maximum Allowable Ripple Current (mA rms) at 105°C 100kHz

Case Size φD x L(mm)

Maximum Impedance (Ω) at 20°C 100kHz

+105°C, High Ripple Current(高紋波), Low Impedance(低阻抗品)

## STANDARD RATINGS

Voltage(Code)		63V (1J)			100V(2A)					
Cap.( $\mu$ F)	Code	Case Size	Impedance	Ripple Current	Case Size	Impedance	Ripple Current			
15	156				6.3x11	0.960	115			
22	226	6.3x11	0.960	115						
27	276	6.3x11	0.960	115	8x12	0.504	232			
33	336	6.3x11	0.960	115						
39	396	8x12	0.504	232	8x16	0.360	300			
47	476	8x12	0.504	232	10x12.5	0.344	314			
56	566	8x12	0.504	232	8x20	0.264	362			
68	686	8x12	0.504	232	10x16	0.248	357			
82	826	10x12.5	0.344	314	10x20	0.168	466			
100	107	8x16	0.360	300	10x20	0.168	466			
		10x12.5	0.344	314						
120	127	10x16	0.248	357	12.5x20	0.128	690			
150	157	8x20	0.264	362						
180	187	10x20	0.168	466	12.5x25	0.096	922			
220	227	10x20	0.168	466	12.5x25	0.096	922			
270	277	12.5x20	0.128	690						
330	337	12.5x20	0.128	690						
390	397	12.5x25	0.096	922						

Maximum Allowable Ripple Current (mA rms) at 105 °C 100kHz

Case Size  $\phi$ D x L(mm)Maximum Impedance( $\Omega$ ) at 20 °C 100kHz

## RIPPLE CURRENT MULTIPLIER

Frequency Coefficient						
Cap.( $\mu$ F)	Coefficient	Freq.(Hz)	120	1k	10k	100k
~180			0.40	0.75	0.90	1.00
220 ~ 560			0.50	0.85	0.94	1.00
680 ~ 1800			0.60	0.87	0.95	1.00
2200 ~ 3900			0.75	0.90	0.95	1.00
4700			0.85	0.95	0.98	1.00