

GCK 105°C Standard Series

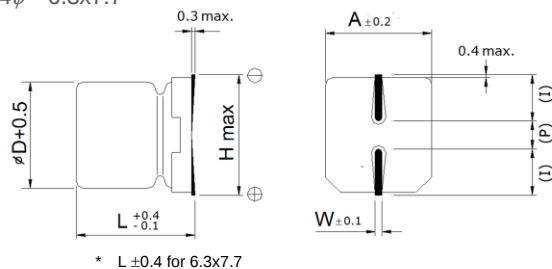
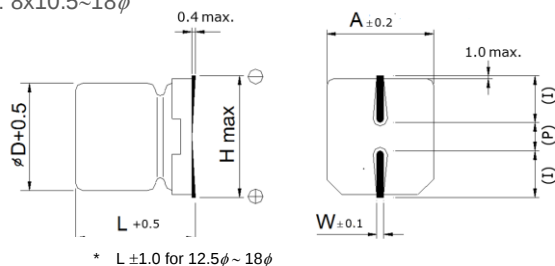
- For surface mounted and general-purpose use.
- Life guaranteed 2,000 hours/105°C.
- RoHS & REACH compliant, Halogen-Free.



Specifications

Item	Performance Characteristics												
Operating Temperature range	-40 + 105°C												
Rated Voltage	4V ~ 450V												
Capacitance Range	1 ~ 8,200 μF												
Capacitance Tolerance	±20% (120 Hz, 20°C)												
Leakage Current	6.3~100V	4ϕ ~ 10ϕ	I ≤ 0.01CV or 3 μA			whichever is greater after 2 minutes application of rated voltage.							
		12.5ϕ~18ϕ	I ≤ 0.03CV or 4 μA										
	160~450V	10ϕ ~ 18ϕ	I ≤ 0.04CV+100 μA										
Dissipation Factor (120 Hz, 20°C)	Rated voltage (V)		4	6.3	10	16	25	35	50	63	100	160~250	350~450
	Tan δ (max.)	4ϕ ~ 10ϕ	0.42	0.30	0.26	0.22	0.16	0.14	0.12	0.10	0.10	0.20	0.25
		12.5ϕ ~18ϕ	0.45	0.38	0.34	0.30	0.26	0.22	0.18	0.14	0.10	0.20	0.25
Temperature Characteristics (120 Hz)	Impedance Ratio / Stability at Low Temperature												
	Rated voltage (V)		4	6.3	10	16	25	35	50	63	100	160~250	350~450
	4ϕ ~ 10ϕ	Z(-25°C)/Z(20°C)	7	4	3	2	2	2	2	2	3	2	3
		Z(-40°C)/Z(20°C)	15	8	6	4	4	3	3	3	4	3	6
	12.5ϕ~18ϕ	Z(-25°C)/Z(20°C)	7	5	4	3	2	2	2	2	2	2	4
		Z(-40°C)/Z(20°C)	17	12	10	8	5	4	3	3	3	6	10
Load Life	After 2,000 hours application of WV at 105°C, capacitor shall meet the characteristics mentioned below.												
	Capacitance change		Within ±20% of initial value (Except 4V : ± 30%)										
	Tan δ		200% or less of initial specified value										
	Leakage current		Initial specified value or less										
Shelf Life	At 105°C, no voltage applied for 1,000 hours, the capacitor shall meet the limits as in load life. (With voltage treatment)												
Resistance to Soldering Heat	Capacitor placed on a 250°C hot plate for 30 seconds with their electrode terminals facing downward will fulfill the following conditions after being cooled to room temperature.												
	Capacitance change		Within ±10% of initial value										
	Tan δ		≤ initial specified value										
	Leakage current		≤ initial specified value										

Dimension (mm)

Fig. 1: 4 ϕ ~ 6.3x7.7Fig. 2: 8x10.5~18 ϕ 

D ϕ	L	A	H	I	W	P	Fig
4	5.4	4.3	4.4	2.0	0.5~0.8	1.0	1
5	5.4	5.3	5.4	2.2	0.5~0.8	1.4	1
6.3	5.4	6.6	6.7	2.6	0.5~0.8	1.9	1
6.3	7.7	6.6	6.7	2.6	0.5~0.8	1.9	1
8	10.5	8.4	8.5	3.0	0.8~1.2	3.1	2
10	10.5	10.4	10.5	3.3	0.8~1.2	4.7	2
10	13.5	10.4	10.5	3.3	0.8~1.2	4.7	2
12.5	13.5	13.0	13.1	4.9	1.1~1.4	4.7	2
12.5	16	13.0	13.1	4.9	1.1~1.4	4.7	2
16	16.5	17.0	17.1	5.8	1.1~1.4	6.4	2
18	16.5	19.0	19.1	6.2	1.1~1.4	6.4	2
18	18.5	19.0	19.1	6.2	1.1~1.4	6.4	2

• Standard Products Table

D ϕ x L (mm)

WV(SV) Cap (μ F)	4 (5)		6.3 (8)		10 (13)		16 (20)		25 (32)	
4.7							4 x 5.4	13	4 x 5.4	17
10							4 x 5.4	20	5 x 5.4	23
									4 x 5.4	20
22	4 x 5.4	20	4 x 5.4	23	5 x 5.4	29	5 x 5.4	32	6.3 x 5.4	39
					4 x 5.4	22	4 x 5.4	25	5 x 5.4	32
33	5 x 5.4	30	5 x 5.4	34	5 x 5.4	35	6.3 x 5.4	45	6.3 x 5.4	48
	4 x 5.4	25	4 x 5.4	30	4 x 5.4	30	5 x 5.4	35	5 x 5.4	35
47	5 x 5.4	36	5 x 5.4	38	5 x 5.4	38	6.3 x 5.4	55	6.3 x 5.4	60
			4 x 5.4	35			5 x 5.4	40		
100	6.3 x 5.4	64	6.3 x 5.4	69	6.3 x 5.4	80	6.3 x 5.4	80	6.3 x 7.7	100
	5 x 5.4	54	5 x 5.4	59	5 x 5.4	60			6.3 x 5.4	80
150	6.3 x 5.4	80	6.3 x 5.4	85	6.3 x 5.4	85	6.3 x 7.7	105	8 x 10.5	240
									6.3 x 7.7	120
220	6.3 x 5.4	90	6.3 x 7.7	120	6.3 x 7.7	120	8 x 10.5	270	8 x 10.5	270
			6.3 x 5.4	95	6.3 x 5.4	95	6.3 x 7.7	120		
330	6.3 x 7.7	120	6.3 x 7.7	120	8 x 10.5	290	8 x 10.5	290	10 x 10.5	380
					6.3 x 7.7	135			8 x 10.5	290
470	6.3 x 7.7	120	8 x 10.5	320	10 x 10.5	380	10 x 10.5	380	10 x 10.5	380
			6.3 x 7.7	120	8 x 10.5	320	8 x 10.5	290		
680	8 x 10.5	320	8 x 10.5	350	10 x 10.5	380			10 x 13.5	400
					8 x 10.5	350	10 x 10.5	380		
1000	8 x 10.5	320	10 x 10.5	410	10 x 10.5	410	12.5 x 13.5	550	12.5 x 13.5	580
			8 x 10.5	350			10 x 13.5	460		
							10 x 10.5	410		
1500	10 x 10.5	410	10 x 13.5	450	10 x 13.5	460	12.5 x 13.5	550	12.5 x 16	850
			10 x 10.5	410						
2200	10 x 13.5	440	12.5 x 13.5	680	12.5 x 13.5	680	16 x 16.5	900	16 x 16.5	1050
	10 x 10.5	410	10 x 13.5	560			12.5 x 13.5	750		
3300	10 x 13.5	600	12.5 x 16	850	16 x 16.5	1000	16 x 16.5	1000	18 x 16.5	1150
			12.5 x 13.5	810						
4700	12.5 x 13.5	600	16 x 16.5	1000	16 x 16.5	1000	18 x 16.5	1225	18 x 18.5	1300
6800	16 x 16.5	950	18 x 16.5	1290	18 x 16.5	1290				
	12.5 x 16	650								
8200			18 x 18.5	1450	18 x 18.5	1450			Case size	R.C.

Ripple current (mA) at 105°C 120 Hz

WV(SV) Cap (μF)	35 (44)		50 (63)		63 (75)		100 (125)		160 (200)	
1			4 x 5.4	8	4 x 5.4	8	4 x 5.4	8		
2.2					4 x 5.4	12	6.3 x 5.4	14		
3.3			4 x 5.4	14	5 x 5.4	17	6.3 x 7.7	25		
	4 x 5.4	13					6.3 x 5.4	20		
4.7			5 x 5.4	20	5 x 5.4	20	6.3 x 7.7	27		
	4 x 5.4	17	4 x 5.4	14			6.3 x 5.4	22		
10	5 x 5.4	27	6.3 x 5.4	32	6.3 x 7.7	58	8 x 10.5	77		
	4 x 5.4	18	5 x 5.4	27	6.3 x 5.4	32	6.3 x 7.7	58		
22	6.3 x 5.4	44	6.3 x 7.7	58	8 x 10.5	100	10 x 10.5	126	10 x 13.5	50
	5 x 5.4	36	6.3 x 5.4	44	6.3 x 7.7	58	8 x 10.5	100		
33	6.3 x 5.4	50	6.3 x 7.7	65	8 x 10.5	140	10 x 10.5	150	12.5 x 13.5	95
47	6.3 x 7.7	80	8 x 10.5	170	10 x 10.5	200	12.5 x 13.5	250	16 x 16.5	240
	6.3 x 5.4	58	6.3 x 7.7	70	8 x 10.5	140	10 x 13.5	180	12.5 x 13.5	205
68							10 x 10.5	160		
							12.5 x 13.5	300		
100	8 x 10.5	240	10 x 10.5	250	12.5 x 13.5	400	16 x 16.5	450	16 x 16.5	250
	6.3 x 7.7	92	8 x 10.5	210	10 x 13.5	350	12.5 x 13.5	380		
150					10 x 10.5	310				
220	8 x 10.5	240	10 x 10.5	300	10 x 13.5	350				
	10 x 10.5	260	10 x 13.5	380	16 x 16.5	560	16 x 16.5	550		
330	8 x 10.5	240	10 x 10.5	330	12.5 x 13.5	470				
	10 x 10.5	370	16 x 16.5	600	16 x 16.5	700	18 x 16.5	590		
470			12.5 x 13.5	490	12.5 x 16	510				
			10 x 13.5	295						
680	12.5 x 13.5	520	16 x 16.5	700	16 x 16.5	750	18 x 18.5	980		
	10 x 13.5	400	12.5 x 16	550						
1000	10 x 10.5	370	12.5 x 13.5	470						
	12.5 x 13.5	530	16 x 16.5	750	18 x 16.5	790				
1500	16 x 16.5	800	18 x 16.5	990						
	12.5 x 16	600								
2200	16 x 16.5	750							Case size	R.C.
	18 x 16.5	1050								

Ripple current (mA) at 105°C 120 Hz

WV(SV) Cap (μF)	200 (250)		250 (300)		350 (400)		400 (450)		450 (500)	
3.3							10 x 13.5	40	10 x 13.5	40
4.7							8 x 10.5	35	8 x 10.5	38
			10 x 13.5	65	10 x 13.5	45	12.5 x 13.5	48	12.5 x 13.5	45
10	10 x 13.5	75	10 x 13.5	70	12.5 x 13.5	50	10 x 13.5	45	10 x 13.5	42
22	12.5 x 13.5	105	12.5 x 13.5	105	16 x 16.5	55	12.5 x 13.5	50	12.5 x 13.5	70
33	12.5 x 13.5	120	16 x 16.5	180	18 x 16.5	100	16 x 16.5	85	16 x 16.5	85
47	16 x 16.5	220	16 x 16.5	220			18 x 16.5	100	18 x 16.5	100
100	18 x 16.5	280	18 x 16.5	260						
									Case size	R.C.

Ripple current (mA) at 105°C 120 Hz

• Frequency coefficient of allowable ripple current

	Diameter	Cap(μF) / Frequency	50 Hz	120 Hz	300 Hz	1KHz	10 KHz~
Coefficient	4φ ~ 10φ	1 ~ 68	0.70	1	1.17	1.36	1.50
		100 ~ 3300	0.85	1	1.08	1.20	1.30
	12.5φ~18φ	~ 68	0.75	1	1.35	1.57	2.00
		100 ~ 680	0.80	1	1.23	1.34	1.50
		1000 ~ 6,800	0.85	1	1.10	1.13	1.15