

FEATURES

1. Directly mountable on printed circuit board without holders
2. Smaller low profile sizes than ordinary capacitors.
3. Terminal spacing fixed at 10mm for PC board plug in.
4. Aluminum case designed explosion –proof vent

SPECIFICATIONS

Item	Performance Characteristics									
Operating Temperature Range	-40 to +85℃									
Rated Working voltage Range	16 to 450V									
Nominal Capacitance Range	56~56000(uF)									
Capacitance Tolerance	±20% (120Hz, +20℃)									
Leakage Current	$I \leq 3 \sqrt{CV}$ after 5minutes application of rated working voltage at +20℃									
Dissipation Factor $\tan \delta$ (120Hz+20℃)	Working voltage(V)	16	25	35	50	63	80	100	160~250	400~450
	$\tan \delta$ (max.)	0.50	0.40	0.35	0.35	0.30	0.25	0.20	0.15	0.20
Low Temperature characteristics	Impedance ratio max. at 120Hz									
	Working voltage(V)	16~100			160~250			400~450		
	Z-25℃/Z+20℃	4			3			8		
	Z-40℃/Z+20℃	15			12			12		
Surge voltage	Working voltage(V)	10	16	25	35	40	50	63	100	
	Surge voltage	13	20	32	44	50	63	79	125	
	Working voltage(V)	160	200	250	350	400	450			
	Surge voltage	200	250	300	400	450	500			
High temperature Loading	Test conditions The following specifications shall be satisfied when the capacitors are restored to 20℃ after the rated voltage applied for 2000 hours at 85℃ Post test requirements at +20℃ Leakage current : $\leq$ Initial specified value Capacitance change : $\leq \pm 20\%$ of initial measured value $\tan \delta$: $\leq 200\%$ of initial specified value									
Shelf life	At 85℃ no voltage applied after 1000hours the capacitors shall meet the following limits Post test requirements at +20℃ Leakage current : $\leq 200\%$ of Initial specified value Capacitance change : $\leq \pm 15\%$ of initial measured value $\tan \delta$: $\leq 150\%$ of initial specified value									
Others	JIS C-5141 JIS C-5102									

Ripple current MULTIPLIERS

- 1) Maximum rms ripple current at 120Hz, 85°C are given in the table
- 2) Temperature multiplying factor: Where capacitors are operated at temperature other than 85 °C, the maximum ripple current must be multiplied by the figure shown in the table below.

Temperature coefficient

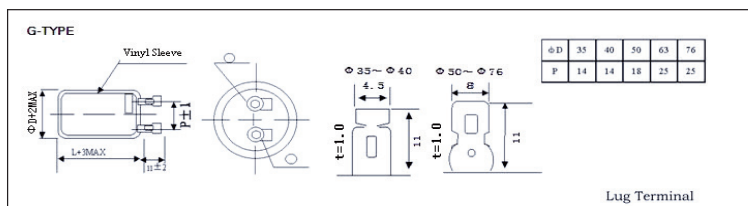
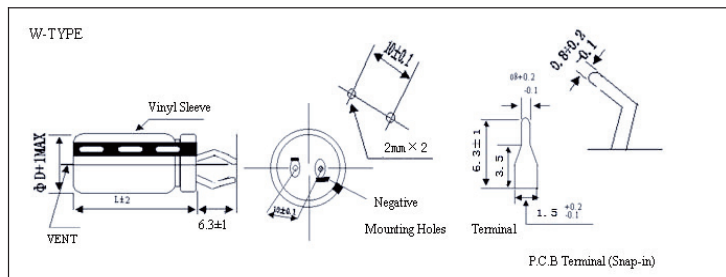
Temperature (°C)	20~45	65	75	85
Factor	1	0.91	0.86	0.73

- 3) Frequency multiplying factor:

If capacitors are used to filter circuits at a frequency other than 120Hz, the maximum ripple current must be multiplied by the figure shown in the table below.

Frequency coefficient

Frequency(Hz)	60	120	1k	10~50k
25~100V	0.9	1.0	1.	1.25
160~250V	0.8	1.0	151.	1.47
350~450V	0.8	1.0	151.	1.47



DIMENSIONS

ΦD×L(mm)

Voltage		16V(1C)				25V(1E)				35V(1V)			
Cap.(μF)	Code	22	25	30	35	22	25	30	35	22	25	30	35
3900	398									22×25			
										2.16			
4700	478									22×30	25×25		
										2.42	2.42		
5600	568					22×25				22×35			
						2.11				2.66			
6800	688					22×30	25×25			22×40	25×30	30×25	
						2.47	2.47			2.97	2.82	2.93	
8200	828	22×25				22×35				22×45	25×35		
		2.55				2.86				3.29	3.17		
10000	109	22×30				22×40	25×30	30×25		22×50	25×40	30×30	
		2.89				3.31	3.15	3.27		3.75	3.65	3.60	
12000	129	22×30	25×25			22×45	25×35	30×30			25×45	30×35	35×30
		3.01	3.01			3.77	3.63	3.80			4.15	4.14	4.27
15000	159	22×35	25×30	30×25		22×50	25×40					30×40	35×35
		3.45	3.48	3.61		4.21	4.10					4.77	4.95
18000	189	22×40	25×35				25×45	30×35	35×30			30×45	35×40
		3.84	3.91				4.53	4.52	4.66			5.30	5.52
22000	229	22×50	25×40	30×30				30×45	35×35				35×45
		4.52	4.40	4.34				5.33	5.26				6.20
27000	279		25×45	30×35				30×50	35×40				35×50
			4.96	4.95				5.96	5.93				6.89
33000	359			30×40	35×30				35×45				
				6.21	5.46				6.65				
39000	399			30×45	35×35				35×50				
				5.60	6.12				7.31				
47000	479			30×50	35×40								
				6.93	6.89								
56000	569				35×45								
					7.69								
												Case Size	
												Allowable ripple	

Allowable Ripple (mA rms)at 85°C 120Hz

ΦD×L(mm)

Voltage		50V(1H)				63V(1J)				80V(1K)			
Cap.(μF)	Code	22	25	30	35	22	25	30	35	22	25	30	35
1200	128									22×25			
										1.66			
1500	158									22×30			
										1.96			
1800	188					22×25				22×35	25×30		
						1.82				2.11	2.11		
2200	228					22×30	25×25			22×40	25×30	30×25	
						2.14	2.14			2.44	2.46	2.56	
2700	278					22×35	25×30			22×45	25×35		
						2.29	2.52			2.82	2.86		
3300	338	22×30	25×25			22×40	25×35	30×25		22×50	25×40	30×35	
		2.35	2.35			2.72	2.74	2.84		3.23	3.29	3.25	
3900	398	22×35	25×30			22×45	25×35				25×45	30×35	
		2.66	2.68			3.09	3.13				3.71	3.70	
4700	478	22×40	25×35	30×25	35×25	22×50	25×40	30×35	35×25		25×50	30×40	35×35
		3.02	3.07	2.98	3.30	3.69	3.59	3.54	3.25		4.20	4.23	4.12
5600	568	22×45	25×40	30×30			25×45	30×35				30×45	35×35
		3.40	3.47	3.42			4.01	4.00				4.70	4.64
6800	688	22×50	25×45	30×35				30×40	35×30				35×40
		3.84	3.74	3.93				4.55	4.44				5.24
8200	828		25×50	30×40	35×30			30×45	35×35				35×45
			4.44	4.47	4.36			5.12	5.05				5.89
10000	109			30×45	35×35				35×40				
				5.08	5.01				5.75				
12000	129			30×50	35×40				35×45				
				5.72	5.69				6.47				
15000	159				35×45								
					6.56								
18000	189				35×50								
					7.14								
												Case Size	
												Allowable ripple	

Allowable Ripple (mA rms)at 85°C 120Hz

DIMENSIONS

ΦD×L(mm)

Cap.(uF)	Code	Voltage ΦD	100V(2A)				160V(2C)				200V(2D)			
			22	25	30	35	22	25	30	35	22	25	30	35
270	277										22×30			
											1.25			
330	337										22×30			
											1.40			
390	397						22×30				22×35	25×30		
							1.55				1.60	1.60		
470	477						22×30	25×25			22×40	25×30		
							1.75	1.75			1.80	1.80		
560	567						22×35	25×30			22×45	25×35	30×30	
							1.90	1.90			2.00	2.00	2.00	
680	687						22×40	25×35	30×25		22×50	25×40	30×30	
							2.15	2.15	2.15		2.30	2.25	2.30	
820	827						22×45	25×40	30×30			25×45	30×35	35×30
							2.45	2.45	2.45			2.50	2.50	2.50
1000	108							25×45	30×35	35×25			30×40	35×30
								2.80	2.80	2.80			2.95	2.95
1200	128		22×35	25×30				25×50	30×40	35×30			30×45	35×35
			2.11	2.11				3.25	3.25	3.25			3.40	3.40
1500	158		22×40	25×35	30×25				30×45	35×35				35×40
			2.45	2.47	2.56				3.75	3.75				3.80
1800	188		22×45	25×35					30×50	35×40				35×45
			2.77	2.81					4.00	4.00				4.15
2200	228		22×50	25×40	30×35					35×45				
			3.15	3.21	3.17					4.50				
2700	278			25×50	30×40	35×30				35×50				
				3.66	3.65	3.77				5.15				
3300	338				30×45									
					4.18									
3900	398				30×50	35×35								
					4.67	4.61								
4700	478				30×50	35×40								
					5.26	5.23								
5600	568					35×50								
					5.88									

Case Size

Allowable ripple

Allowable Ripple (mA rms)at 85℃ 120Hz

ΦD×L(mm)

Voltage Cap.(uF) Code ΦD	250V(2E)				400V(2G)				450V(2W)			
	22	25	30	35	22	25	30	35	22	25	30	35
56 566									22×25 0.59			
68 686									22×30 0.63			
82 826					22×25 0.72				22×30 0.78	25×25 0.78		
100 107					22×30 0.77				22×35 1.02	25×30 0.92		
120 127					22×35 0.94	25×30 0.94			22×40 1.06	25×35 1.08	30×25 1.05	
150 157					22×40 1.13	25×30 0.92			22×50 1.28	25×40 1.25	30×30 1.25	
180 187					22×45 1.27	25×35 1.06	30×30 1.26			25×45 1.41	30×40 1.48	
220 227	22×30 1.15				22×50 1.45	25×40 1.22	30×35 1.46	35×25 1.50		25×50 1.59	30×40 1.60	35×30 1.57
270 277	22×35 1.25	25×30 1.25				25×45 1.69	30×35 1.68	35×30 1.46			30×45 1.83	35×35 1.80
330 337	22×40 1.45	25×35 1.45				25×50 1.92	30×40 1.93	35×30 1.88			30×50 2.08	35×40 2.06
390 397	22×45 1.70	25×35 1.70	30×30 1.70				30×45 2.16	35×35 2.13				35×45 2.31
470 477	22×50 1.90	25×40 1.90	30×35 1.90				30×50 2.43	35×40 2.42				35×50 2.47
560 567		25×45 2.15	30×35 2.15	35×30 2.15				35×45 2.72				
680 687		25×50 2.35	30×40 2.35	35×30 2.35				35×50 3.08				
820 827			30×45 2.75	35×35 2.75								
1000 108			30×50 3.00	35×40 3.00								
1200 128				35×45 3.50								

Case Size
Allowable ripple

Allowable Ripple (mA rms)at 85°C 120Hz