

FEATURES

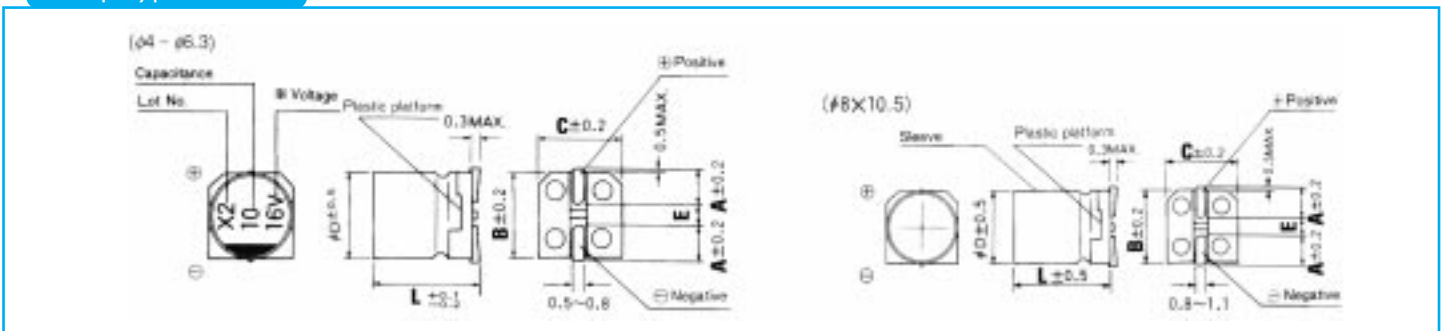


1. Designed for surface mounting on high density circuit board.
2. Emboss carrier tape packing system is available for automatic insertion.

SPECIFICATIONS

Items	Performance Characteristics							
Operating Temperature Range	-40 to +85°C							
Voltage Range	4 to 50V							
Capacitance Range	0.1 to 1000μF							
Capacitance Tolerance	± 20% (120Hz, +20°C)							
Leakage Current	After 2 minutes application of rated voltage, leakage current is not more than 0.01CV or 3μA, whichever is greater.							
Dissipation Factor tan δ	Measurement frequency : 120Hz, Temperature : 20°C							
	Working voltage [V]	4 6.3 10 16 25 35 50						
	tan δ (max.)	0.35 0.26 0.20 0.16 0.14 0.12 0.12						
Stability at Low Temperature	Measurement frequency : 120Hz							
	Working voltage (V)	4 6.3 10 16 25 35 50						
	Impedance ratio Z-25°C/ Z+20°C	7 4 3 2 2 2 2						
	ZT / Z20 (max.) Z-40°C/ Z+20°C	15 8 6 4 4 3 3						
Load Life	After 2000hours' application of rated voltage at 85°C, capacitors meets the characteristics requirements listed at right.	<table border="1"> <tr> <td>Leakage Current</td> <td>Initial specified value or less</td> </tr> <tr> <td>Capacitance change</td> <td>Within ±20% of initial value for capacitors of 25v or more Within ±25% of initial value for capacitors of 16v or less</td> </tr> <tr> <td>tan δ</td> <td>200% or less of initial specified value</td> </tr> </table>	Leakage Current	Initial specified value or less	Capacitance change	Within ±20% of initial value for capacitors of 25v or more Within ±25% of initial value for capacitors of 16v or less	tan δ	200% or less of initial specified value
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Capacitance change	Within ±20% of initial value for capacitors of 25v or more Within ±25% of initial value for capacitors of 16v or less							
tan δ	200% or less of initial specified value							
Shelf Life	After leaving capacitors under no load at 85°C for 1000 hours, they meet the specified value for load life characteristics listed above.							
Resistance to soldering heat	The capacitors shall be kept on the hot plate maintained at 250°C for 30 seconds. After removing from the pot plate and restored at room temperature, they meet the characteristics requirements listed at right.	<table border="1"> <tr> <td>Leakage Current</td> <td>Initial specified value or less</td> </tr> <tr> <td>Capacitance change</td> <td>Within ±10% of initial value</td> </tr> <tr> <td>tan δ</td> <td>Initial specified value or less</td> </tr> </table>	Leakage Current	Initial specified value or less	Capacitance change	Within ±10% of initial value	tan δ	Initial specified value or less
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tan δ	Initial specified value or less							
Applicable Standards	JIS C-5141 and JIS C-5102							

Chip Type



φD x L	4x5.4	5x5.4	6.3x5.4	6.3x7.7	8x10.5	10x10.5
A	1.8	2.1	2.4	2.4	2.9	3.2
B	4.3	5.3	6.6	6.6	8.3	10.3
C	4.3	5.3	6.6	6.6	8.3	10.3
E	1.0	1.3	2.2	2.2	3.1	4.5
L	5.4	5.4	5.4	7.7	10.5	10.5

Unit : mm

DIMENSIONS

Voltage		4V		6.3V		10V		16V		25V		ø D x L (mm)	
Cap. (μF)	Code	0G		0J		1A		1C		1E			
4.7	4R7										4x5.4	19	
10	100							4x5.4	25	5x5.4 (4x5.4)	28 (24)		
15	150							4x5.4	28	5x5.4	34		
22	220			4x5.4	31	5x5.4 (4x5.4)	35 (30)	5x5.4	39	6.3x5.4 (5x5.4)	52 (46)		
33	330	4x5.4	28	5x5.4 (4x5.4)	39 (34)	5x5.4 (4x5.4)	43 (35)	6.3x5.4 (5x5.4)	57 (45)	6.3x5.4	63		
47	470	4x5.4	33	5x5.4	47	6.3x5.4 (5x5.4)	52 (47)	6.3x5.4	68	6.3x5.4	68		
56	560	4x5.4	39	5x5.4	54	6.3x5.4	68	6.3x5.4	74	6.3x5.4	82		
68	680	5x5.4	45	6.3x5.4	62	6.3x5.4	72	6.3x5.4	80	6.3x5.4	94		
100	101	5x5.4	56	6.3x5.4	71	6.3x5.4	76	6.3x5.4	86	6.3x7.7	145		
150	151	6.3x5.4	74	6.3x5.4	78	6.3x5.4	88	6.3x7.7	150	8x10.5	190		
220	221	6.3x5.4	96	6.3x5.4	95	6.3x7.7	170	6.3x7.7	160	8x10.5	230		
330	331	6.3x7.7	150	6.3x7.7	190	8x10.5	250	8x10.5	280	10x10.5	305		
470	471	6.3x7.7	200	8x10.5	270	8x10.5	300	10x10.5	330				
680	681	8x10.5	285	8x10.5	320	10x10.5	380	10x10.5	390				
1000	102	8x10.5	340	10x10.5	400	10x10.5	450						
1500	152	10x10.5	390									Case Size	Allowable ripple

Voltage		35V		50V		63V		100V		ø D x L (mm)	
Cap. (μF)	Code	1V		1H		1J		2A			
0.1	OR1			4x5.4	1.0	4x5.4	1.0				
0.22	R2			4x5.4	2.3	4x5.4	2.3				
0.33	R33			4x5.4	3.5	4x5.4	3.5				
0.47	R47			4x5.4	5.0	4x5.4	5.0				
1	O10			4x5.4	10	4x5.4	10	4x5.4	10		
1.5	1R5			4x5.4	12	4x5.4	12	6.3x5.4	15		
2.2	2R2			4x5.4	15	4x5.4	15	6.3x5.4	20		
3.3	3R3	4x5.4	18	4x5.4	18	4x5.4	20	6.3x5.4	28		
4.7	4R7	4x5.4	20	5x5.4 (4x5.4)	23 (19)	5x5.4	23	6.3x5.4	35		
10	100	5x5.4 (4x5.4)	30 (25)	6.3x5.4	34	6.3x5.4	34	6.3x7.7	50		
22	220	6.3x5.4	54	6.3x5.4	45	6.3x7.7	70	8x10.5	120		
33	330	6.3x5.4	60	6.3x7.7	85	6.3x7.7	85	10x10.5	190		
47	470	6.3x5.4	70	6.3x7.7	90	8x10.5	170				
56	560	6.3x7.7	80	6.3x7.7	110	8x10.5	230				
68	680	6.3x7.7	110	8x10.5	170	10x10.5	280				
100	101	6.3x7.7	130	8x10.5	200						
150	151	8x10.5	215	10x10.5	240						
220	221	10x10.5	270					Case Size	Allowable ripple		

() Smaller can size is available

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

Frequency coefficient of allowable ripple current

Frequency (Hz)	50	120	300	1k	10k~
Coefficient	0.70	1.00	1.17	1.36	1.50