

CHIP TYPE SERIES

TS13C6

FEATURES

- Wide temperature range -55°C ~ 105°C with load life of 2000~3000 hours.
- Lead-free reflow soldering is available subject to customers' request.

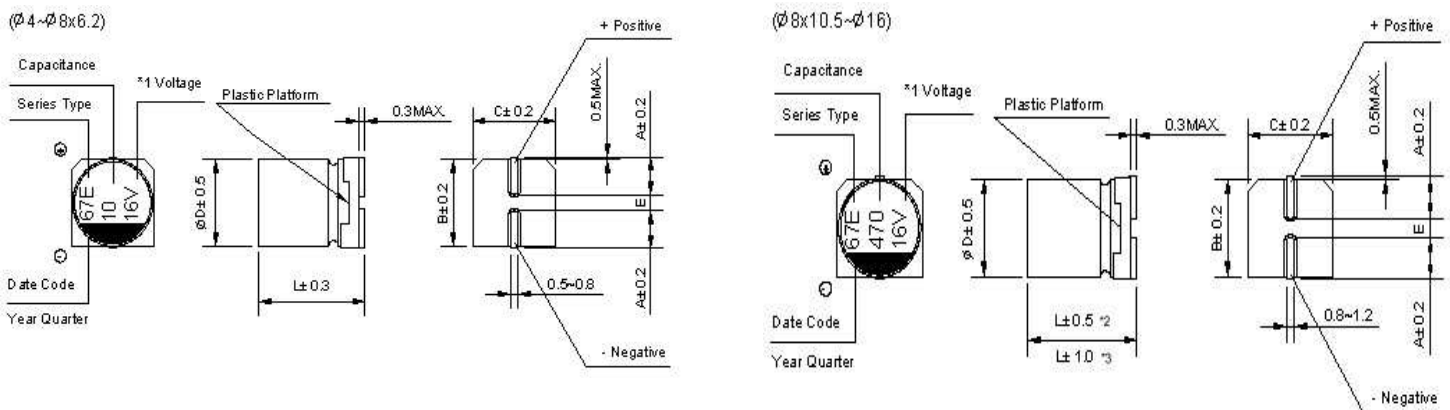
Long Life Assurance



◆ Specifications

ITEMS		PERFORMANCE CHARACTERISTICS													
Operating Temperature Range	-55°C ~ +105°C														
Voltage Range	6.3~50V														
Capacitance Range	0.1~4700 μF														
Capacitance Tolerance	±20% at 120Hz, 20°C														
Leakage Current	For Ø4~Ø10, After 2 minutes' application of rated voltage, leakage current is not more than 0.01CV or 3 μA, whichever is greater. For Ø12.5~Ø16, After 1 minutes' application of rated voltage, leakage current is not more than 0.03CV or 4 μA, whichever is greater.														
Tan δ	Measurement frequency : 120Hz, Temperature : 20°C														
	Rated voltage (V)	6.3		10		16		25		35		50			
	Tan δ (MAX)	Ø4~Ø10		0.28		0.24		0.20		0.16		0.13		0.12	
Stability at Low Temperature	Measurement frequency : 120Hz														
	Impedance ratio ZT / Z20 (MAX)	Ø4~Ø10		Z-25°C / Z+20°C		3		3		2		2		2	
		Ø12.5~Ø16		Z-40°C / Z+20°C		8		5		4		3		3	
		Ø4~Ø10		Z-25°C / Z+20°C		5		4		3		2		2	
Ø12.5~Ø16		Z-40°C / Z+20°C		12		10		8		5		4			
Load Life	After 3000 hours* (2000 hours for Ø4~Ø6.3 and Ø8*6.2) application of rated voltage at 105°C capacitors meet the characteristics requirements listed at right														
	Capacitance Change		Within ± 30% of initial value												
	Leakage Current		Initial specified value or less												
Self Life	After leaving capacitors under no load at 105°C for 1000 hours, they meet the specified value for load life characteristics listed above.														
	Capacitance Change		Within ± 10% of initial value												
	Tan δ		Initial specified value or less												
Resistance to Soldering Heat	After reflow soldering according and restored at room temperature, they meet the characteristics requirements listed at right.														
	Capacitance Change		Within ± 10% of initial value												
	Leakage Current		Initial specified value or less												
Applicable Standards	JIS C-5141 and JIS C-5102														

◆ Chip type



*1 Voltage mark [6V] represents 6.3V for Ø4~Ø10; *2 [L±0.5] is applicable to Ø8×10.5~Ø10; *3 [L±1.0] is applicable to Ø12.5~Ø16.
 Re: Date code and series type — 1st digit for Year; 2nd digit for Quarter, 4 quarter codes in one year are 1, 4, 7, 0;
 3rd character for Series; EL Series = E.

TS13C6

(mm)

D×L	Φ4×5.8	Φ5×5.8	Φ6.3×5.8	Φ6.3×7.7	Φ8×6.2	Φ8×10.5	Φ10×10.5	Φ10×13.5	Φ12.5×13.5/16	Φ16×16.5/21.5
A	1.8	2.1	2.4	2.4	3.3	2.9	3.2	3.2	4.7	5.5
B	4.3	5.3	6.6	6.6	8.3	8.3	10.3	10.3	13.0	17.0
C	4.3	5.3	6.6	6.6	8.3	8.3	10.3	10.3	13.0	17.0
E±0.2	1.0	1.3	2.2	2.2	2.2	3.1	4.4	4.4	4.4	6.7
L	5.8	5.8	5.8	7.7	6.2	10.5	10.5	13.5	13.5/16	16.5/21.5

◆ Case Size

WV/V	6.3		10		16		25		35		50		
Cap/μF	0G		0J		1A		1C		1V		1H		
0.1	0R1										4×5.8	1	
0.22	R22										4×5.8	2	
0.33	R33										4×5.8	3	
0.47	R47										4×5.8	5	
1	010										4×5.8	10	
2.2	2R2										4×5.8	16	
3.3	3R3										4×5.8	16	
4.7	4R7							4×5.8	13	4×5.8	14	5×5.8	23
10	100	--	--	--	--	4×5.8	18	5×5.8	20	5×5.8	21	6.3×5.8	35
22	220	4×5.8	22	5×5.8	25	5×5.8	27	6.3×5.8	36	6.3×5.8	38	6.3×7.7 8×6.2	70 70
33	330	5×5.8	27	5×5.8	30	6.3×5.8	40	6.3×5.8	60	6.3×7.7 8×6.2	84 84	8×10.5	90
47	470	5×5.8	33	6.3×5.8	41	6.3×5.8	48	6.3×7.7 8×6.2	90 91	8×10.5	98	8×10.5	90
100	101	6.3×5.8	50	6.3×5.8 8×6.2	53 100	6.3×5.8	60	8×10.5	130	8×10.5	130	10×10.5	100
150	151	6.3×5.8	55	6.3×7.7	105	6.3×7.7	95	8×10.5	140	10×10.5	315	10×10.5	100
220	221	6.3×7.7	100	8×10.5	210	8×10.5	210	10×10.5	190	10×10.5	315	10×13.5 10×10.5	250 100
330	331	8×10.5	210	8×10.5	210	8×10.5	210	10×10.5	315	10×10.5	315	12.5×13.5	400
470	471	8×10.5	210	10×10.5	315	10×10.5	315	10×10.5	315	12.5×13.5 10×13.5	500 360	16×16.5 12.5×16	650 500
680	681	8×10.5	210	10×10.5	315	10×10.5	315	10×13.5	380	12.5×13.5	500		
1000	102	10×10.5	315	10×13.5 10×10.5	360 315	12.5×13.5 10×13.5 10×10.5	450 350 315	12.5×13.5	550	16×16.5 12.5×16	700 550	16×21.5	900
1500	152	10×13.5 10×10.5	450 315	12.5×13.5	500	12.5×13.5	500	12.5×16	800				
2200	222	12.5×13.5	620	12.5×16 12.5×13.5	650 600	16×16.5	900	16×16.5 16×21.5	1000 1200	16×21.5	1250		
3300	332	12.5×16	750	16×16.5	950	16×21.5	1150	16×21.5	1350				
4700	472	16×21.5	1250	16×21.5	1250	16×21.5	1300	--	--			Case Size	Ripple Current

Allowable Ripple (mA rms) at 105°C 120Hz

◆ Frequency coefficient of allowable ripple current

Capacitance (μF)	Frequency	50Hz	120Hz	300Hz	1kHz	10kHz~
	Φ4~Φ10	0.1~100	0.70	1.00	1.17	1.36
150~1500		0.85	1.00	1.08	1.20	1.30
Φ12.5~Φ16	~470	0.75	1.00	1.35	1.57	2.00
	680~3300	0.85	1.00	1.23	1.34	1.50

Note: Specification are subject to change without notice. For more detail and update, please visit our website.