

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

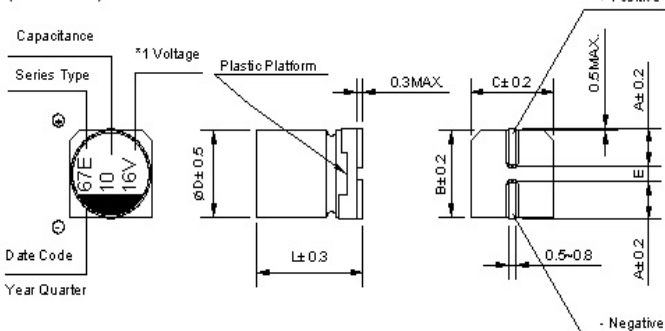


◆ Specifications

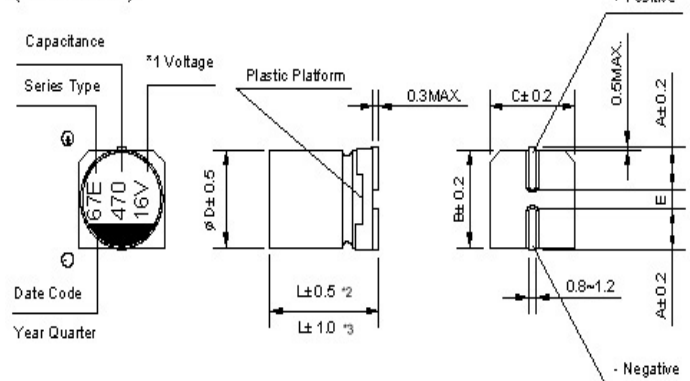
ITEMS		PERFORMANCE CHARACTERISTICS								
Operating Temperature Range		-55℃ ~ +105℃								
Voltage Range		6.3~50V								
Capacitance Range		0.1~4700 μ F								
Capacitance Tolerance		$\pm$ 20% at 120Hz, 20℃								
Leakage Current		For $\varnothing$ 4~ $\varnothing$ 10, After 2 minutes' application of rated voltage, leakage current is not more than 0.01CV or 3 μ A, whichever is greater. For $\varnothing$ 12.5~ $\varnothing$ 16, After 1 minutes' application of rated voltage, leakage current is not more than 0.03CV or 4 μ A, whichever is greater.								
Tan δ	Measurement frequency : 120Hz, Temperature : 20℃									
	Rated voltage (V)		6.3	10	16	25	35	50		
	Tan δ (MAX)	$\varnothing$ 4~ $\varnothing$ 10	0.28	0.24	0.20	0.16	0.13	0.12		
		$\varnothing$ 12.5~ $\varnothing$ 16	0.38	0.34	0.30	0.26	0.22	0.18		
Stability at Low Temperature	Measurement frequency : 120Hz									
	Rated voltage (V)				6.3	10	16	25	35	50
	Impedance ratio ZT / Z20 (MAX)	$\varnothing$ 4~ $\varnothing$ 10	Z-25℃ / Z+20℃	3	3	2	2	2	2	
			Z-40℃ / Z+20℃	8	5	4	3	3	3	
		$\varnothing$ 12.5~ $\varnothing$ 16	Z-25℃ / Z+20℃	5	4	3	2	2	2	
			Z-40℃ / Z+20℃	12	10	8	5	4	3	
Load Life	After 3000 hours' (2000 hours for $\varnothing$ 4~ $\varnothing$ 6.3 and $\varnothing$ 8*6.2) application of rated voltage at 105℃ capacitors meet the characteristics requirements listed at right		Capacitance Change		Within $\pm$ 30% of initial value					
			Leakage Current		Initial specified value or less					
			Tan δ		300% or less of initial specified value					
Self Life		After leaving capacitors under no load at 105℃ for 1000 hours, they meet the specified value for load life characteristics listed above.								
Resistance to Soldering Heat	After reflow soldering according and restored at room temperature, they meet the characteristics requirements listed at right.		Capacitance Change		Within $\pm$ 10% of initial value					
			Tan δ		Initial specified value or less					
			Leakage Current		Initial specified value or less					
Applicable Standards		JIS C-5141 and JIS C-5102								

◆ Chip type

(Φ4~Φ8×6.2)



(Φ8×10.5~Φ16)



*1 Voltage mark [6V] represents 6.3V for $\Phi 4 \sim \Phi 10$; *2 [L ± 0.5] is applicable to $\Phi 8 \times 10.5 \sim \Phi 10$; *3 [L ± 1.0] is applicable to $\Phi 12.5 \sim \Phi 16$.
 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

Frequency		50Hz	120Hz	300Hz	1kHz	10kHz~
Capacitance (μF)						
Φ4~Φ10	0.1~100	0.70	1.00	1.17	1.36	1.50
	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.