

TS13C7

FEATURES

- Load life of 3000~5000 hours with temperature up to 105°C
- Lead-free reflow soldering is available subject to customers' request.

3000~5000 Hours Load Life

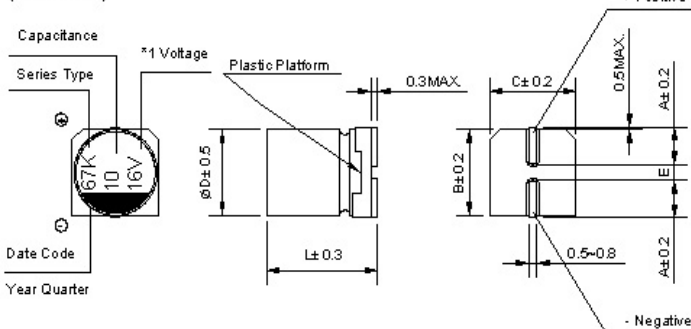


◆ Specifications

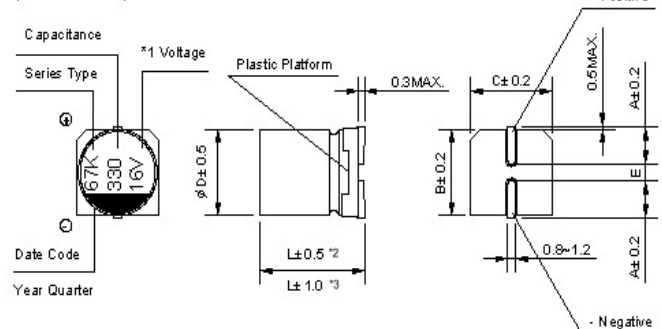
I T E M S		P E R F O R M A N C E C H A R A C T E R I S T I C S										
Operating Temperature Range		-55℃ ~ +105℃										
Voltage Range		6.3~100V										
Capacitance Range		0.1~4700 μ F										
Capacitance Tolerance		$\pm$ 20% at 120Hz, 20℃										
Leakage Current		For $\varnothing$ 4~ $\varnothing$ 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	63	100		
	Tan δ (MAX)	$\varnothing$ 4~ $\varnothing$ 10	0.28	0.24	0.20	0.16	0.13	0.12	0.12	0.12		
$\varnothing$ 12.5~ $\varnothing$ 16		0.38	0.34	0.30	0.26	0.22	0.18	0.18	0.18			
Stability at Low Temperature	Measurement frequency : 120Hz											
	Rated voltage (V)			6.3	10	16	25	35	50	63	100	
	Impedance ratio ZT / Z20 (MAX)	$\varnothing$ 4~ $\varnothing$ 10	Z-25℃ / Z+20℃	4	3	2	2	2	2	2	2	
			Z-40℃ / Z+20℃	10	7	5	3	3	3	3	3	
		$\varnothing$ 12.5~ $\varnothing$ 16	Z-25℃ / Z+20℃	5	4	3	2	2	2	2	2	
			Z-40℃ / Z+20℃	12	10	8	5	4	3	3	3	
Load Life	After 5000 hours' (3000 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

($\Phi 4 \sim \Phi 8 \times 6.2$)



($\Phi 8 \times 10.5 \sim \Phi 16$)



*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; KL Series = K.

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(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 Cap. (μF)		6.3		10		16		25	
		0J		1A		1C		1E	
10	100					4×5.8	18	5×5.8	27
22	220	4×5.8	22	5×5.8	30	5×5.8	30	6.3×5.8	44
33	330	5×5.8	35	5×5.8	36	6.3×5.8	48	6.3×5.8	50
47	470	5×5.8	38	6.3×5.8	50	6.3×5.8	50	6.3×7.7	63
								(8×6.2)	63
100	101	6.3×5.8	69	6.3×7.7	81	6.3×7.7	81	8×10.5	116
				(8×6.2)	-81	(8×6.2)	81		
150	151	6.3×7.7	85	8×10.5	125	8×10.5	125	10×10.5	320
		(8×6.2)	85						
220	221	6.3×7.7	120	8×10.5	141	10×10.5	216	10×10.5	320
		(8×6.2)	120						
330	331	8×10.5	290	10×10.5	290	10×10.5	290	10×10.5	320
470	471	10×10.5	320	10×10.5	320	10×10.5	320	12.5×13.5	400
								(10×13.5)	-350
680	681	10×10.5	320	10×10.5	320	10×13.5	420	12.5×13.5	415
1000	102	10×10.5	410	10×13.5	390	12.5×13.5	550	12.5×13.5	460
1500	152	10×13.5	450	12.5×13.5	480	12.5×13.5	650	12.5×16	700
2200	222	12.5×13.5	680	12.5×16	750	16×16.5	800		
				(12.5×13.5)	-510				
3300	332	12.5×16	850	16×16.5	800				
		(12.5×13.5)	800						
4700	472	16×21.5	1500	16×21.5	1100			Case Size	Ripple Current

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

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Cap. (μF) \ WV		35		50		63		100	
		1V		1H		1J		2A	
0.1	0R1			4×5.8	1				
0.22	R22			4×5.8	2.6				
0.33	R33			4×5.8	3.2				
0.47	R47			4×5.8	5				
1	10			4×5.8	8				
2.2	2R2			4×5.8	12				
3.3	3R3			4×5.8	17			6.3×7.7	30
								(8×6.2)	30
4.7	4R7	4×5.8	16	5×5.8	22			8×10.5	50
10	100	5×5.8	27	6.3×5.8	32	6.3×7.7	45	8×10.5	55
						(8×6.2)	-45		
22	220	6.3×5.8	44	6.3×7.7	58	8×10.5	65	10×10.5	70
				(8×6.2)	58				
33	330	6.3×7.7	57	8×10.5	140	10×10.5	80	10×10.5	80
		(8×6.2)	-57						
47	470	8×10.5	92	10×10.5	310	10×10.5	90	12.5×13.5	250
								(10×13.5)	150
68	680							12.5×13.5	300
100	101	10×10.5	151	10×10.5	310	10×13.5	150	16×16.5	600
								(12.5×16)	420
								(12.5×13.5)	380
150	151	10×10.5	290	10×10.5	310				
220	221	10×10.5	375	12.5×13.5	340	12.5×13.5	470		
				(10×13.5)	320				
330	331	12.5×13.5	380	12.5×16	600	16×16.5	650		
		(10×13.5)	-375	(12.5×13.5)	-500	(12.5×16)	550		
470	471	12.5×13.5	520	16×16.5	700	16×21.5	850		
680	681	12.5×13.5	550						
1000	102	16×16.5	750	16×21.5	950				
		(12.5×16)	600						
2200	222	16×21.5	1350					Case Size	Ripple Current

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

◆ Frequency coefficient of allowable ripple current

Frequency		50Hz	120Hz	300Hz	1kHz	10kHz~
Capacitance (μF)						
Φ4~Φ10		0.70	1.00	1.17	1.36	1.50
Φ12.5~Φ16	~68	0.75	1.00	1.35	1.57	2.00
	100~470	0.80	1.00	1.23	1.34	1.50
	680~3300	0.85	1.00	1.10	1.13	1.15

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