

YKT series aluminum electrolytic capacitors  
Aluminum Electrolytic Capacitors YKT SERIES  
Capacitance specifications list of acknowledgments

Product specification content

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Case Size and Ripple Current,

Application guideline for V-CHIP aluminum electrolytic capacitors

YKT series aluminum electrolytic capacitors  
Aluminum Electrolytic Capacitors YKT SERIES

NO.20130201

Date: February 01, 2013

client  
MESSRS

Specifications

**SPECIFICATIONS  
FOR APPROVAL**

Product name      SMD aluminum electrolytic capacitors  
PRODUCT NAME: V-chip Aluminum Electrolytic Capacitors  
series                YKT  
SERIES:              YKT Series, 105 ° C, ± 20%, Standard  
specification  
DESCRIPTION        See inside page

G-CODE              Customer number      YOKOSUKA item number

Customer acknowledgment bar      Issue confirmation column  
APPROVAL COLUMN                      APPROVED BY

Approved                      Proposed  
APPROVED BY                **Prepare**

After signing, please return a favor, thank you!  
Please chop, sign and return to us a copy after approval. Thank you!

YKT series aluminum electrolytic capacitors  
Aluminum Electrolytic Capacitors YKT SERIES

BOM:

NO Series	Part No:	WV (V)	Cap. (uF)	Cap. tol. (%) 120Hz 20 ° C	DF (%) 120Hz 20 ° C	LC (uA) (2mi n)	DΦ * L	E ± 0.5	Allowable ripple current (mA rms) at 105 ° C 120Hz	ESR 100KHz (Ω) 20 ° C
1 YKT	YKT1HR47M0405 50	0.47 ±20			14	3	4 * 5.4	1.0	4.0	
2 YKT	YKT1JR47M0405 63	0.47 ±20			14	3	4 * 5.4	1.0	3.7	
3 YKT	YKT1H1R0M0405 50		1	± 20	14	3	4 * 5.4	1.0	8.0	
4 YKT	YKT1J1R0M0405 63		1	± 20	14	3	4 * 5.4	1.0	7.2	
5 YKT	YKT2A1R0M0405 100		1	± 20	14	3	4 * 5.4	1.0	7.2	
6 YKT	YKT1V3R3M0405 35		3.3	± 20	16	3	4 * 5.4	1.0	14	
7 YKT	YKT1H3R3M0405 50		3.3	± 20	14	3	4 * 5.4	1.0	14	
8 YKT	YKT1J3R3M0505 63		3.3	± 20	14	3	5 * 5.4	1.3	14	
9 YKT	YKT2A3R3M0605 100		3.3	± 20	14	3.3	6.3 * 5.4 2.1		twenty two	
10 YKT	YKT1H2R2M0405 50		2.2	± 20	14	3	4 * 5.4	1.0	12	
11 YKT	YKT1J2R2M0405 63		2.2	± 20	14	3	4 * 5.4	1.0	12	
12 YKT	YKT2A2R2M0605 100		2.2	± 20	14	3	6.3 * 5.4 2.1		15	
13 YKT	YKT1E4R7M0405 25		4.7	± 20	18	3	4 * 5.4	1.0	14	
14 YKT	YKT1V4R7M0405 35		4.7	± 20	16	3	4 * 5.4	1.0	15	
15 YKT	YKT1H4R7M0405 50		4.7	± 20	14	3	4 * 5.4	1.0	14	
16 YKT	YKT1H4R7M0505 50		4.7	± 20	14	3	5 * 5.4	1.3	17	
17 YKT	YKT1J4R7M0505 63		4.7	± 20	14	3	5 * 5.4	1.3	17	
18 YKT	YKT1J4R7M0605 63		4.7	± 20	14	3	6.3 * 5.4 2.1		twenty two	
19 YKT	YKT2A4R7M0605 100		4.7	± 20	14	4.7	6.3 * 5.4 2.1		twenty three	
20 YKT	YKT2A4R7M0607 100		4.7	± 20	14	4.7	6.3 * 7.7 2.1		38	
21 YKT	YKT1C100M0405 16		10	± 20	20	3	4 * 5.4	1.0	17	
22 YKT	YKT1E100M0405 25		10	± 20	18	3	4 * 5.4	1.0	15	
23 YKT	YKT1E100M0505 25		10	± 20	18	3	5 * 5.4	1.3	twenty one	
24 YKT	YKT1V100M0405 35		10	± 20	16	3.5	4 * 5.4	1.0	15	
25 YKT	YKT1V100M0505 35		10	± 20	16	3.5	5 * 5.4	1.3	twenty two	
26 YKT	YKT1H100M0605 50		10	± 20	14	5	6.3 * 5.4 2.1		25	
27 YKT	YKT1J100M0607 63		10	± 20	14	6.3	6.3 * 7.7 2.1		41	
28 YKT	YKT1J100M0605 63		10	± 20	14	6.3	6.3 * 5.4 2.1		26	
29 YKT	YKT2A100M0810 100		10	± 20	14	10	8 * 10.2	3.1	80	
30 YKT	YKT2A100M0607 100		10	± 20	14	10	6.3 * 7.7 2.1		38	
31 YKT	YKT0J220M0405 6.3		twenty two	± 20	30	3	4 * 5.4	1.0	twenty two	

## YKT series aluminum electrolytic capacitors

## Aluminum Electrolytic Capacitors YKT SERIES

NO Series	Part No:	WV (V)	Cap. (uF)	Cap. Tol. (%) 120Hz 20 ° C	DF (%) 120Hz 20 ° C	LC (uA) (2mi n)	DΦ * L	E ± 0.5	Allowable ripple current (mA rms) at 105 ° C 120Hz	ESR 100KHz (Ω) 20 ° C
32 YKT	YKT1A220M0405 10		22	± 20	twenty four	four	4 * 5.4	1.0	twenty one	
33 YKT	YKT1A220M0505 10		22	± 20	twenty four	four	5 * 5.4	1.0	26	
34 YKT	YKT1C220M0405 16		22	± 20	24	3.52	4 * 5.4	1.0	twenty one	
35 YKT	YKT1C220M0505 16		22	± 20	24	3.52	5 * 5.4	1.0	28	
36 YKT	YKT1E220M0505 25		22	± 20	18	5.5	5 * 5.4	1.3	30	

37 YKT YKT1E220M0605 25 22	± 20	18	5.5	6.3 * 5.4	2.1	37
38 YKT YKT1V220M0605 35 22	± 20	16	7.7	6.3 * 5.4	2.1	40
39 YKT YKT1H220M0605 50 22	± 20	14	11	6.3 * 5.4	2.1	43
40 YKT YKT1H220M0607 50 22	± 20	14	11	6.3 * 7.7	2.1	52
41 YKT YKT1J220M0810 63 22	± 20	14	13.8	8 * 10.2	3.1	100
42 YKT YKT1J220M0607 63 22	± 20	14	13.8 <sup>6</sup>	6.3 * 7.7	2.1	53
43 YKT YKT2A220M1010 100 22	± 20	14	twenty two <sup>6</sup>	10 * 10.2	4.2	129
44 YKT YKT2A220M0810 100 22	± 20	14	twenty two <sup>6</sup>	8 * 10.2	3.1	90
45 YKT YKT0J330M0405 6.3 33	± 20	30	3	4 * 5.4	1.0	twenty three
46 YKT YKT0J330M0505 6.3 33	± 20	30	3	5 * 5.4	1.3	28
47 YKT YKT1A330M0405 10 33	± 20	twenty four	four	4 * 5.4	1.0	twenty three
48 YKT YKT1A330M0505 10 33	± 20	twenty four	four	5 * 5.4	1.3	34
49 YKT YKT1V330M0505 16 33	± 20	20	5.28	5 * 5.4	1.3	29
50 YKT YKT1V330M0605 16 33	± 20	20	5.28	6.3 * 5.4	2.1	45
51 YKT YKT1E330M0505 25 33	± 20	18	8.28	5 * 5.4	1.3	30
52 YKT YKT1E330M0605 25 33	± 20	18	8.28	6.3 * 5.4	2.1	45
53 YKT YKT1V330M0605 35 33	± 20	16	11.5	6.3 * 5.4	2.1	45
54 YKT YKT1V330M0806 35 33	± 20	16	11.5 <sup>5</sup>	8 * 6.5	3.1	86
55 YKT YKT1H330M0607 50 33	± 20	14	16.5	6.3 * 7.7	2.1	63
56 YKT YKT1J330M0810 63 33	± 20	14	20.7	8 * 10.2	3.1	116
57 YKT YKT2A330M1010 100 33	± 20	14	33 <sup>9</sup>	10 * 10.2	4.2	136
58 YKT YKT0J470M0405 6.3 47	± 20	30	3	4 * 5.4	1.0	26
59 YKT YKT0J470M0505 6.3 47	± 20	30	3	5 * 5.4	1.3	34
60 YKT YKT1A100M0405 10 47	± 20	twenty four	four	4 * 5.4	1.0	31
61 YKT YKT1A100M0505 10 47	± 20	twenty four	four	5 * 5.4	1.3	42
62 YKT YKT1C470M0505 16 47	± 20	20	7.52	5 * 5.4	1.3	33
63 YKT YKT1C470M0605 16 47	± 20	20	7.52	6.3 * 5.4	2.1	48

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## YKT series aluminum electrolytic capacitors

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NO Series	Part No:	WV (V)	Cap. (uF)	Cap. tol. (%) 120Hz 20 ° C	DF (%) 120Hz 20 ° C	LC (UA) (2min)	DΦ * L	E ± 0.5	Allowable ripple current (mA rms) at 105 ° C, 120Hz	ESR
										100KHz 20 ° C
64 YKT YKT1E470M0605 25 47 ± 20					18	11.75	6.3 * 5.4	2.1		49
65 YKT YKT1E470M0806 25 47 ± 20					18	11.75	8 * 6.5	3.1		93
66 YKT YKT1V470M0605 35 47 ± 20					16	16.45	6.3 * 5.4	2.1		54
67 YKT YKT1V470M0607 35 47 ± 20					16	16.45	6.3 * 7.7	2.1		75
68 YKT YKT1H470M0810 50 47 ± 20					14	23.5	8 * 10.2	3.1		125
69 YKT YKT1H470M0607 50 47 ± 20					14	23.5	6.3 * 7.7	2.1		66
70 YKT YKT1J470M1010 63 47 ± 20					14	29.61	10 * 10.2	4.2		168
71 YKT YKT1J470M0810 63 47 ± 20					14	29.61	8 * 10.2	3.1		125
72 YKT YKT2A470M1010 100 47 ± 20					14	47	10 * 10.2	4.2		148
73 YKT YKT0J101M0505 6.3 100 ± 20					30	6.3	5 * 5.4	1.3		40
74 YKT YKT0J101M0605 6.3 100 ± 20					30	6.3	6.3 * 5.4	2.1		52
75 YKT YKT1A101M0505 10 100 ± 20					twenty four	four	5 * 5.4	1.3		40
76 YKT YKT1A101M0605 10 100 ± 20					twenty four	four	6.3 * 5.4	2.1		55

77 YKT YKTIC101M0605 16 100 ±20	20	16	6.3 * 5.4 2.1	63
78 YKT YKTIC101M0806 16 100 ±20	20	16	8 * 6.5 3.1	125
79 YKT YKTIE101M0607 25 100 ±20	18	25	6.3 * 7.7 2.1	93
80 YKT YKTIV101M0607 35 100 ±20	16	35	6.3 * 7.7 2.1	87
81 YKT YKTIV101M0810 35 100 ±20	16	35	8 * 10.2 3.1	125
82 YKT YKTIH101M0810 50 100 ±20	14	50	8 * 10.2 3.1	146
83 YKT YKTIH101M1010 50 100 ±20	14	50	10 * 10.2 4.2	178
84 YKT YKTIJ101M1010 63 100 ±20	14	63	10 * 10.2 4.2	200
85 YKT YKT0J151M0605 6.3 150 ±20	30	9.45	6.3 * 5.4 2.1	56
86 YKT YKTIA151M0605 10 150 ±20	twenty four	15	6.3 * 5.4 2.1	65
87 YKT YKTIC151M0607 16 150 ±20	20	twenty four	6.3 * 7.7 2.1	100
88 YKT YKTIE151M0810 25 150 ±20	18	37.5	8 * 10.2 3.1	148
89 YKT YKTIV151M0810 35 150 ±20	16	52.5	8 * 10.2 3.1	158
90 YKT YKTIH151M1010 50 150 ±20	14	75	10 * 10.2 4.2	178
91 YKT YKT0J221M0605 6.3 220 ±20	30	13.86	6.3 * 5.4 2.1	69
92 YKT YKT0J221M0607 6.3 220 ±20	30	13.86	6.3 * 7.7 2.1	108
93 YKT YKTI A221M0607 10 220 ±20	twenty four	twenty two	6.3 * 7.7 2.1	110
94 YKT YKTI A221M0806 10 220 ±20	twenty four	twenty two	8 * 6.5 3.1	110
95 YKT YKTIC221M0607 16 220 ±20	20	35.2	6.3 * 7.7 2.1	110

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NO	Series	Part No:	WV (V)	Cap. (uF)	Cap. tol. (%) 120Hz 20 ° C	DF (%) 120Hz 20 ° C	LC (uA) (2min)	DΦ * L	E ± 0.5	Allowable ripple current (mA rms) at 105 ° C, 120Hz	ESR 100KHz at 20 ° C
96	YKT	YKTIC221M0806 16 220 ±20				20	35.2	8 * 6.5 3.1		110	
97	YKT	YKTIE221M0810 25 220 ±20				18	55	8 * 10.2 3.1		183	
98	YKT	YKTIV221M0810 35 220 ±20				16	77	8 * 10.2 3.1		195	
99	YKT	YKTIV221M1010 35 220 ±20				16	77	10 * 10.2 4.2		230	
100	YKT	YKTIH221M1010 50 220 ±20				14	110	10 * 10.2 4.2		230	
101	YKT	YKT0J331M0607 6.3 330 ±20				30	20.79	6.3 * 7.7 2.1		108	
102	YKT	YKTI A331M0810 10 330 ±20				twenty four	15	8 * 10.2 3.1		108	
103	YKT	YKTIC331M0810 16 330 ±20				20	52.8	8 * 10.2 3.1		201	
104	YKT	YKTIE331M0810 25 330 ±20				18	82.5	8 * 10.2 3.1		228	
105	YKT	YKTIE331M1010 25 330 ±20				18	82.5	10 * 10.2 4.2		248	
106	YKT	YKTIV331M1010 35 330 ±20				16	115.5	10 * 10.2 4.2		247	
107	YKT	YKTIC471M0607 6.3 470 ±20				30	29.61	6.3 * 7.7 2.1		125	
108	YKT	YKTIC471M0810 6.3 470 ±20				30	29.61	8 * 10.2 3.1		214	
109	YKT	YKTI A471M0810 10 470 ±20				twenty four	15	8 * 10.2 3.1		214	
110	YKT	YKTI A471M1010 10 470 ±20				twenty four	15	10 * 10.2 4.2		266	
111	YKT	YKTIC471M0810 16 470 ±20				20	75.2	8 * 10.2 3.1		240	
112	YKT	YKTIC471M1010 16 470 ±20				20	75.2	10 * 10.2 4.2		300	
113	YKT	YKTIE471M1010 25 470 ±20				18	117.5	10 * 10.2 4.2		286	
114	YKT	YKT0J681M0810 6.3 680 ±20				30	42.84	8 * 10.2 3.1		214	
115	YKT	YKTI A681M1010 10 680 ±20				twenty four	15	10 * 10.2 4.2		277	
116	YKT	YKTIC681M1010 16 680 ±20				20	108.8	10 * 10.2 4.2		322	

117 YKT YKT0J102M0810 6.3 1000 ±20	30	63	8 * 10.2 3.1	235
118 YKT YKT0J102M1010 6.3 1000 ±20	30	63	10 * 10.2 4.2	310
119 YKT YKT1A102M1010 10 1000 ±20	twenty	100	10 * 10.2 4.2	320
120 YKT YKT1C102M1010 16 1000 ±20	20	160	10 * 10.2 4.2	347

## YKT series aluminum electrolytic capacitors

## Aluminum Electrolytic Capacitors YKT SERIES

## YKT environmental standards SMD aluminum electrolytic capacitors

YKT Series Environmental protection standard product V-chip aluminum electrolytic capacitors.

## Scope

For "YKT series" vertical chip electrolytic capacitors

This specification covers "YKT Series" V-chip aluminum electrolytic capacitors.

## 2. Reference Standard Reference Standard

Japanese Industrial Standard JIS C-5141 JIS C-5101

Japanese industrial Standard JIS C-5141 characteristics W and JIS C-5101 except as specified

## 3. Environmental protection standard

R0HS Directive 2002/95 / EC. REACH 552/2009

## 4. The main technical performance SPECIFICATION

NO	project Item	performance Performance Characteristics	Test method ( JIS C 5101-1 )
1	Operating temperature range Operating temperature range	- 55 ~ +105	
2	rated operating voltage range Voltage Range	6.3 ~ 100 (VDC)	
3	Leakage current Leakage Current	$I \leq 0.01 CV$ or 3 (uA, take a big value in 2 minutes)	whichever is greater (after 2 minutes)
4	Capacitance tolerance Capacitance Tolerance	± 20 (%)	(120 Hz, + 20 ° C)
5	loss angle tangent value Tan δ (120 Hz, + 20 ° C)	Rated Voltage (VDC) rated voltage Tan δ (max.)	6.3 10 16 25 35 50 63 100 ∅ 4 ~ ∅ 10 0.30 0.24 0.20 0.18 0.16 0.14 0.14 0.14
6	temperature characteristics	Temperature test phase	temperature test
	Temperature Characteristics	Step T (° C)	H (min) Measurement (120 Hz)
		1 20 ± 2	3 C, ESR
		2 -40 ± 3	30 ESR
		3 20 ± 2	3
		4 105 ± 2	30 LC, C, Tan δ
		5 20 ± 2	3
		Step2, Impedance Ratio:	
		Rated Voltage (V)	6.3 10 16 25 35 50 63 100
		Impedance Ratio	Z-25 ° C / Z + 20 ° C 4 3 2 2 2 2 2 3
		ZT / Z20 (max.)	Z-40 ° C / Z + 20 ° C 10 8 6 4 3 3 3 4

Step4, Impedance Ratio:

Leakage current LC	$T_{max} 105^{\circ}C$	Less than 800% of the initial specified value
Capacitance Change		$\pm 25\%$ of the value in Step1
Loss tangent Tan		initial specified value

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YKT series aluminum electrolytic capacitors

Aluminum Electrolytic Capacitors YKT SERIES

NO	project Item	performance Performance Characteristics	Test method ( JIS C 5101-1 )
		Rated Voltage (VDC) 6.3 10 16 25 35 50 63 100	
		Rated voltage	
		Surge Voltage (VDC) 8 13 20 32 44 63 79 125	
		Surge voltage	
7	Surge test Surge Voltage Test	After Surge voltage applied at a cycling rate of 30 seconds charge and 5.5 minutes discharge 1000 successive test cycle. Test temperature: 15 ~ 35 °C judgment : a. $\Delta C / C \leq \pm 15\%$ b. Specification value of DF $\leq 100\%$ c. LC should be $\leq 100\%$ of the specification value d. Appearance may not have damage phenomenon	
8	Solderability Solderability	A minimum of 95% of the surface being immersed	The capacitor shall be tested under the following conditions: Soldering temperature: $245 \pm 3^{\circ}C$ Dipping depth: 2mm Dipping speed: $25 \pm 2.5mm / s$ Dipping time: $3 \pm 0.5s$ The following conditions shall be applied for 2 hours in each (X, Y, Z) 3 mutually perpendicular directions, with a total of 6 hours. Vibration frequency range: 10Hz ~ 55Hz Peak to peak amplitude: 1.5mm Fix the capacitor body to the tension test stand and slowly apply the weight on the terminals Tensile force to 5N, to maintain $10 \pm 1$ seconds. After fixing the capacitors, the terminals are pulled in vertical direction Load is gradually increased until it reached 5N and held for 10sec
9	Vibration resistance Vibration test	Capacitance Change: Within $\pm 5\%$ of initial value. Appearance: There shall be no leakage of electrolyte.	
10	Terminal tensile strength Tensile test	Terminals shall not be loose, broken and bad contact feeling. No Broken and undamaged	
11	Marked solvent resistance Solvent Resistance of the Marking	The mark should be legible There shall be no damage end legibly marked can be deciphered easily	After immersing the capacitor body in isopropanol at $20-25^{\circ}C$ for $30 \pm 5S$ , Visual inspection Class of Reagent: Isopropyl Alcohol; Test Temperature: $20 \sim 25^{\circ}C$ ; Immersing Time: $30 \pm 5S$
12	Resistance to welding heat Solder Heat Resistance Test	Determine: a change in capacity $\leq \pm 10\%$ $\Delta C / C \leq \pm 10\%$ ; b. The appearance of no damage Appearance: No significant change can be observe	After reflow (see page 8) After recovery at room temperature, the capacitor Meet the left as required After reflow soldering under Reflow Soldering Condition (see page 8) and restored at room temperature, they meet the characteristics listed.
13	High temperature load High Temperature Load Life Test	Capacity change $\leq 30\%$ of initial value $\Delta C / C$ Loss tangent $\leq 300\%$ initial rating Value Tan $\delta$ initial specified value $\leq$ initial specified value	After applying the rated voltage of 1000 °C ( $\geq 8$ specification, 2000 hours) at $105^{\circ}C$ , Allow it to cool down at room temperature and check for a rated voltage of 1000 at $105^{\circ}C$ After hours, the capacitor should meet the left requirements After 1000 hours ( $\varnothing 8 \sim \varnothing 10, 2000H$ ) application of rated voltage at $105^{\circ}C$ , capacitors meet the characteristics requirements listed.
14	Moisture resistance Humidity Test	Leakage current LC initial specified value a. $\Delta C / C \leq \pm 15\%$ b. DF $\leq 100\%$ initial specified value c. LC $\leq 100\%$ initial specified value d. Appearance: No significant change can be observe	Capacitors shall be exposed for $240 \pm 8$ hrs in an atmosphere of 90 - 95% RH at $40^{\circ}C$ And then the Capacitor shall be subjected to standard atmospheric Conditions for 1-2hours, after which measurements Shall be made.

YKT series aluminum electrolytic capacitors  
Aluminum Electrolytic Capacitors YKT SERIES

5. Logo

Marking

A) Capacitor identification as follows:

Capacitors shall be legibly marked with the following:

- 1) product line  
Manufacture's mark
- 2) Rated voltage and rated capacitance  
Rated voltage and nominal capacitance
- 3) negative mark  
Negative polarity

B) Capacitor Tape The following contents are printed on the packing tray

Following items should be marked on the taping reel

- 1) Rated voltage & capacity  
Rated Voltage and Capacitance
- 2) customer item number (customer request)  
Customer's Part Number (if request)
- 3) series name  
Series Mark
- 4) Make batch number  
Lot Number
- 5) the number of braids  
Packing quantity

Tape braiding test

Adhesion Test

On average with the peel strength: 40 ~ 90g; test speed: 200 ~ 300mm / min

Reasonable pulling strength: 40 ~ 90g; Pulling speed: 200 ~ 300mm / min

With the average peel force:

40 ~ 90

Cassette on the belt

~ 15 °

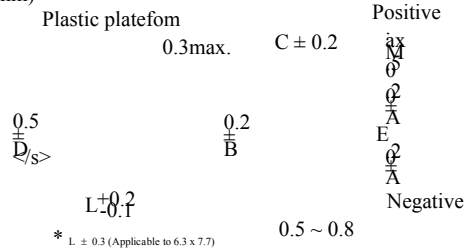
Scroll down the first 15 spaces

Volume left 15 spaces

7. Pattern

Drawing (Unit: mm)

( $\varnothing 4 \sim \varnothing 6.3$ )



YKT series aluminum electrolytic capacitors  
Aluminum Electrolytic Capacitors YKT SERIES

( $\varnothing 8, \varnothing 10$ )

Plastic platform  
0.3max.

Positive  
 $C \pm 0.2$   
x.



8. Size		$\frac{0.5}{D_{s>}}$		$\frac{0.2}{B}$		$\frac{0.2}{A}$		E		$\frac{0.2}{A}$		Negative	
Dimensions (Unit: mm)		L ± 0.5		0.8 ~ 1.1									
$\varnothing D \times L$ 4 × 5.4 5 × 5.4 6.3 × 5.4 6.3 × 7.7 8 × 6.5 8 × 10.2 10 × 10.2													
A	1.8	2.1	2.4	2.4	2.9	2.9	3.2						
B	4.3	5.3	6.6	6.6	8.3	8.3	10.3						
C	4.3	5.3	6.6	6.6	8.3	8.3	10.3						
E	1.0	1.3	2.1	2.1	3.1	3.1	4.6						
L	5.4	5.4	5.4	7.7	6.5	10.5	10.5						

9. Tape instructions

Taping Specifications

Meet the standard JIS C0806

Applicable standard JIS C0806

(YKT, YKS, YKE, YKW, YKK, YKH, YKNseries)

Cartridge

Carrier Tape

9.1. Pattern

Drawing 1 (for  $\varnothing 4 \sim \varnothing 10$ )

4.0 ± 0.1	$\varnothing 1.5 + 0.1 \sim -0$	2.0 ± 0.1	0.4
		1.75 ± 0.1	
		F ± 0.1	$\frac{0.3}{W}$
size	P ± 0.1	A ± 0.2	$\frac{0.2}{B}$ T <sub>1</sub> ± 0.2

Dimension

Series	RVT							
$\varnothing D \times L$	4 · 5.4	5 · 5.4	6.3 · 5.4	6.3 · 7.7	8 · 6.5	8 · 10.2	10 · 10.2	
W	12.0	12.0	16.0	16.0	16.0	24.0	24.0	
P	8.0	12.0	12.0	12.0	12.0	16.0	16.0	
F	5.5	5.5	7.5	7.5	7.5	11.5	11.5	
A	4.7	6.0	7.0	7.0	8.7	8.7	10.7	
B	4.7	6.0	7.0	7.0	8.7	8.7	10.7	
T <sub>1</sub>	5.8	5.8	5.8	8.3	7.0	11.0	11.0	

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9.2. Reels

Reel	$\varnothing D$	4	5	6.3	8 * 6.5	8 * 10.2	10 * 10.2
A		12.5	12.5	14.5	14.5	24.5	24.5

3

13 ± 0.5

2.0

twenty three

$\frac{50}{M}$  in.  $\frac{3}{82}$  M ax.

seal tape

## Package quantity

∅ D × L	Outer box size (L · W · H) mm	The number of packages	
		Qty./Reel	Qty./Bag
4 · 5.5	550 · 410 · 420	2000 pcs.	56000 pcs.
5 · 5.4	550 · 410 · 420	1000 pcs.	28000 pcs.
6.3 · 5.4	550 · 410 · 420	1000 pcs.	24000 pcs.
6.3 · 7.7	550 · 410 · 420	1000 pcs.	24000 pcs.
8 · 6.5	550 · 410 · 420	1000 pcs.	24000 pcs.
8 · 10.2	550 · 410 · 420	500 pcs.	8000 pcs.
10 · 10.2	550 · 410 · 420	500 pcs.	8000 pcs.

## 10. Lead-free reflow soldering

## Lead-free Reflow Soldering Condition

## A. Reflow conditions recommended

## Recommended Conditions for Reflow Soldering

- (1) Infrared and hot air reflow soldering should be adopted and vapor phase reflow soldering should not be used.  
A thermal condition system such as infrared radiation (IR) or hot blast should be adopted, and vapor heat transfer systems (VPS) are not recommended.
- (2) Reflow soldering is recommended only once. Reflow soldering times must be longer than 30 minutes if required.  
Reflow soldering should be performed one time. If the capacitor has to be reflowed twice, 30 minutes must be layout between each time.
- (3) lead-free reflow, please meet the following conditions:  
For lead-free type reflow soldering, please observe proper conditions below:
  - a) preheating time from 150 ° C to 200 ° C within 180 seconds;  
The time of preheating from 150 ° C to 200 ° C shall be within maximum 180 seconds;
  - b) the welding time of the capacitor top temperature exceeding 217 ° C does not exceed tL seconds;  
The time of soldering temperature at 217 ° C measured on capacitors' top shall not exceed tL (second);

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- c) The peak spike temperature at the top of the capacitor does not exceed  $T_p$  ° C and the actual spike temperature in the range of 5 ° C does not exceed  $t_p$   
The peak temperature on capacitors' top shall not exceed  $T_p$  (° C), and the time within 5 ° C of actual peak temperature shall not exceed  $t_p$  (second).

## B. Reflow profile

## Classification Reflow Profile

## C. peak temperature allowable range

- \* 1. Average ramp-up rate is 3 ° C / second max.
- \* 2. Ramp-down rate is 6 ° C / second max.
- \* 3. Time from 25 ° C to peak temperature is 8 minutes max.

Allowable Range of Peak Temperature Size	Peak Temperature Thickness (mm)	Tp (° C)	Dwell time above 200 ° C above the residence time 230 ° C above the residence time	
∅ 4 ~ ∅ 6.3	≥ 2.5	250 ± 0	60S or less	40S or less
</s> 8	≥ 2.5	240 ± 0	60S or less	Within 30S
∅ 10 × 10.5L	≥ 2.5	235 ± 0	50S or less	20S or less

D. Surface mount recommended size

Recommended Land Size (Unit: mm)

	Size	X.	Y.	a
Y.	∅ 4	1.6	2.6	1.0
	∅ 5	1.6	3.0	1.4
a	∅ 6.3	1.6	3.5	2.1
Y.	</s> 8	2.5	3.5	3.0
	∅ 10	2.5	4.0	4.0

X.

Lead materials

The Raw Materials of Lead Wire

Name	Material	Percentage
TPCS	Fe	71.35%
	Cu	20%
	Sn	8.65%

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12. Capacitor code mark

Explanation of Part Number

Series (YKT) Capacitance (100µF) Capacitance Tolerance (± 20%) Case Diameter

(∅ 5 \* 5.4mm)

1 2 3 4 5 6 7 8 9 10 11

12 13

-

example: Series Voltage (WV) Capacitance (µF) Tol. (%) Case Size

**Example: YKT 1A 101 M 0505**

Shell size

Case Size (∅ 5 \* 5.4mm)

Capacitance tolerance

Capacitance Tolerance (± 20%)  
capacitance

Capacitance (100 µ F)

Voltage

Voltage (10V)

Series Series (YKT)

13. Construction

NO	Material name material	Texture. Processing Textures
1	Coating aluminum case	Polyurethane film coated aluminum shell (AL purity purity of more than 98%, PU purity purity 1.5%)
2	Base plate	Thermoplastic resin ( Polyphthalamide purity 40 ~ 70%)
3	+ Lead Wire	Aluminum (AL), CP (Fe, Sn) flat ( flat )
4	- Lead Wire	Aluminum (AL), CP (Fe, Sn) flat ( flat )
5	Sealing plastic cover	Butyl rubber IIR
6	Vegetarian cores.	Aluminum foil , Electrolytic Paper, Electrolyte (GBL, electrolyte) Lead

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14. Rated ripple current frequency coefficient

Frequency Coefficient of Allowable Ripple Current

Frequency	50Hz	120Hz	300Hz	1kHz	10kHz
Coefficient	0.7	1.0	1.17	1.36	1.5

15. Size and ripple current (the company YKT standard)

Case Size and Ripple Current (Our company's standard)

YKT series rated capacitance, voltage, size (φ D × L)

16. Chip electrolytic capacitors general use precautions

Application guideline for V-CHIP aluminum electrolytic capacitors

A) circuit design

Circuit Design

1) Give full consideration to the use of capacitor and installation conditions within the provisions of the catalog

Please make sure the environmental and mounting conditions to which the capacitor will be exposed are within the conditions specified in YK's catalog.

2) Operating temperature and applied ripple current shall be within the specified limits of the catalog

Operating temperature and applied ripple shall be within YK specification.

3) When designing the circuit, you should choose the product that meets the life expectancy

Appropriate capacitors which comply with the life requirement of the products should be selected when designing the circuit.

4) Aluminum electrolytic capacitors are polar, should not be added reverse voltage or AC voltage.

For circuits that may exhibit reverse voltage, choose bipolar power container. Note: Even bipolar capacitors can not be used directly on pure AC circuits

Aluminum electrolytic capacitors are polar. Make sure that no reverse voltage or AC voltage is applied to the capacitors. Please use bi-polar capacitors for a circuit that can possibly find

Note: Even bi-polar capacitors can not be used for AC voltage application.

5) For circuits that require fast and frequent charge and discharge, aluminum electrolytic capacitors should not be used, but specially designed capacitors with

Do not use aluminum electrolytic capacitors in a circuit that requires rapid and very frequent charge / discharge.

In this type of circuit, it is necessary to use a special design capacitor with extended life characteristics.

6) should not use overload voltage

Do not apply excess voltage.

- ① DC voltage and ripple voltage superimposed peak voltage should not exceed the rated operating voltage  
Please pay attention to that the peak voltage, which is DC voltage overlapped by ripple current, will not exceed the rated voltage.
- ② If more than 2 capacitors are connected in series, make sure that the applied voltage is lower than the rated value, and connect a balanced resistor in parallel with the capacitor.  
The applied voltage is equal.

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In the case where more than 2 aluminum electrolytic capacitors are used in series, please make sure that applied voltage will be lower than rated voltage and the voltage will be applied to each capacitor equally by using a balancing resistor in parallel with the capacitor

7) Capacitors can not be used under the following environmental conditions:

Aluminum electrolytic capacitors shall not be used under the following environmental conditions:

- ① (a) The capacitor is exposed to water (including concentrate), salt water or oil.  
Capacitors will be exposed to water (including condensation), brine or oil.
- (b) There are hydrogen sulfide, sulfurous acid, nitrous acid, chlorine gas, bromine gas, methane bromide, ammonia gas and other toxic gases in the surrounding environment.  
Ambient conditions that include toxic gases such as hydrogen sulfide, sulfurous acid, nitrous acid, chlorine, bromine, methyl bromide, ammonium, etc.
- (c) Ozone, ultraviolet light and radiation in the surrounding environment.  
Ambient conditions that expose the capacitor to ozone, ultraviolet ray and radiation.
- ② Serious vibration and mechanical shock exceed the specified range of the catalog.  
Severe vibration and physical shock conditions that exceed YK specification.

The vibration test conditions are as follows

Vibration test condition:

Vibration frequency range: 10-55-10Hz

vibration frequency range: 10 ~ 55 ~ 10Hz

Scanning frequency: 10-55-10Hz / min

sweep rate: 10 ~ 55 ~ 10Hz / minute

Scanning method: logarithm

sweep method: logarithmic

Amplitude or acceleration: 1.5mm (maximum acceleration of 10G)

amplitude or acceleration: 1.5mm (max. acceleration is 10G)

Vibration direction: X, Y, Z direction

direction of vibration: X, Y, Z direction

Test time: 2 hours in each direction

testing time: 2 hours per each direction

Impact generally not applicable.

Shock is not applicable normally.

For special requirements, please contact our sales department.

If a particular condition is required, please contact our sales office.

8) Electrolyte The main chemical solvents and electrolytic paper are flammable, and the electrolyte is conductive.

When the electrolyte is in contact with the PC board, it may corrode the PC board. There should be no line at the bottom of the capacitor seal.

The main chemical solution of the electrolyte and the separator paper used in the capacitors are combustible. The electrolyte is conductive. When it comes in contact with the PC board, there is a possibility of pattern corrosion or short circuit between the circuit pattern, which could result in smoking or catching fire. Do not locate any circuit pattern beneath the capacitor end seal.

9) When designing the circuit board, make sure that the heating element is not close to the other side of the aluminum electrolytic capacitor or PC board and do not design a circuit board that the heat generating components are placed near the aluminum electrolytic capacitor or on the reverse side of PC board, if that just under the capacitor.

10) The circuit board design should take into account the electrical properties of the capacitor may vary with temperature and frequency changes.

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Electrical characteristics may vary depending on changes in temperature and frequency consider this variation when you design circuits.

- 11) When more than 2 capacitors are connected in parallel, the current balance through these capacitors should be considered.  
When you install more than 2 capacitors in parallel, please consider the balance of current flowing into the capacitors.
  - 12) When mounting a capacitor on a double-sided circuit board, the capacitor should be located so as to avoid excess substrate holes and vias.  
While mounting capacitors on double-side PC board, the capacitors should be away from those Unbounded base plate holes and connection holes.
- B) Installation
- Mounting
- 1) Once the capacitor has been installed and loaded, do not attempt to use it for other circuit boards or for other purposes.  
Once a capacitor has been assembled in the set and power applied, do not attempt to re-use the capacitor in other circuits or application.
  - 2) Capacitors stored for more than 2 years may have increased leakage current. If the leakage current increases, use a 1K  $\Omega$  resistor for charging.  
Leakage current of the capacitors that have been stored for more than 2 years may increase.  
When leakage current has increased, please perform a voltage treatment using a 1k $\Omega$  resistor.
  - 3) Before mounting the capacitor on the PC board, check the specifications and polarity.  
Please confirm specifications and polarity before installing capacitors on the PC board.
  - 4) Do not drop the capacitor on the ground, or do not use the capacitor dropped on the ground.  
Do not drop capacitors on the floor, nor use a capacitor that was dropped.
  - 5) Do not damage the capacitor during installation.  
Do not deform the capacitor during installation.
  - 6) Pay attention to the mechanical impact of the tip of the placement machine, the product inspection fixture or the centering device on the capacitor.  
Please pay attention to the mechanical shock to the capacitor by suction nozzle of the automatic insertion machine or automatic mounter, or by product checker, or by centering mechanism.
- 7) reflow
- Reflow soldering
- ① Observe the reflow soldering conditions in the catalog.  
Please follow "Reflow Soldering Conditions" in YK's catalog.
  - ② When using infrared heating, please pay attention to the degree of heating, because the infrared absorption rate will vary with the capacitor color and size.  
When an infrared heater is used, please pay attention to the extent of of heating since the absorption rate of infrared will vary vary to difference in the color and size of the capacitor.
- 8) Do not tilt or twist the capacitor after soldering the capacitor to the PC board.  
Do not tilt lay down or twist the capacitor body after the capacitor are soldered to the PC board.
  - 9) Do not grasp the soldered capacitor to move the PC board.  
Do not carry the PC board by grasping the soldered capacitor.
  - 10) Do not allow anything to touch the capacitor after soldering.  
If the PC board is stacked and stored, make sure that the PC board or other components do not touch the capacitor.  
Please do not allow anything to touch the capacitor after soldering. If PC boards are stored in stack, please make sure the PC board or other components away from the capacitor.
  - 11) The soldered capacitor shall not be affected by the thermal radiation of any soldered PC board or other components.  
The capacitors shall not be effected by any radiated heat from the soldered PC board or other components after soldering.
  - 12) Cleaning:  
Cleaning
    - ① can not be halogenated cleaning agent cleaning capacitor. If you must use halogenated cleaning agent, please contact our sales department.  
Do not clean capacitors with halogenated cleaning agent. However, if it is necessary to clean with halogenated cleaning agent, please contact our sales office.

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- ② recommended cleaning method:

Recommended cleaning method

Use: Any type and specification

Applicable: Any type, any ratings

Cleaning method: immersion, ultrasonic or other methods of total cleaning time should be within 2 minutes.

Clean the capacitor should be used together with cleaning PC board blowing hot air for at least 10 minutes.

Hot air temperature should be below 40°C. If not after washing

Cleaning conditions: Total cleaning time shall be within 2 minutes by immersion,

ultrasonic or other methods. Temperature of the cleaning agents shall be 40 °C or below.

After cleaning, capacitors should be dried by using hot air for the minimum 10 minutes

along with the PC board mounted. Hot air temperature should be within the maximum operating

temperature of the capacitor. Insufficient dryness rinse may cause appearance

problems, such as bottom-plate bulge and etc.

- ③ Avoid using ozone depleting detergents to protect the environment.

Avoid using ozone destructive substances as cleaning agents for protecting global environment.

C) after installation

In the Equipment

- 1) Do not touch the positive and negative electrodes of the capacitor directly.  
Do not directly touch terminal by hand.
- 2) Do not use the conductor between the positive and negative connections, and do not splash conductive liquid near the capacitor and its vicinity, such as .  
Do not link positive terminal and negative terminal by conductor, nor spill conductible liquid such as alkaline or acidic solution on or near the capacitor.
- 3) In the environment should avoid splashing water or oil, to avoid direct sunlight, ultraviolet radiation, radiation, toxic gases, vibration or mechanical shock.  
Please make sure that the ambient conditions where the set is is installed is free from spilling water or oil, direct sunlight, ultraviolet rays, radiation, poisonous gases, vibration or mechanical shock.

D) Maintenance and inspection

Maintenance and Inspection

Please regularly test capacitors installed in industrial equipment. Test items are as follows:

Please aware inspect the aluminum capacitors that are installed in industrial equipment. The following items should be checked:

Appearance: Obvious defects, such as explosion-proof valve open, electrolyte leakage and so on.

Appearance: excessive abnormality such as pressure relief vent opening, electrolyte leaking, etc.

Electrical properties: capacitance, loss tangent, leakage current, the specific data, see YOKOSUKA catalog and related product specifications.

Electrical characteristics: capacitance, dielectric loss tangent, leakage current and etc.,

which are specified in YK's catalog or alternate product specification.

E) Emergency situation

In an Emergency

- 1) If you see the flue gas generated by the explosion-proof valve action, turn off the main switch or disconnect the clutch.  
If you see smoke due to operation of safety vent, please turn off the main switch or pull out the plug from the outlet
- 2) If breathing gas or swallowing electrolyte, rinse mouth and throat immediately with water.

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If you breathe the gas or ingest the electrolyte, please wash out your mouth and throat with water immediately.

- 3) If the skin is stained with electrolyte, please wash it with soap and water.  
If your skin is exposed to the electrolyte, please wash it away using soap and water.

F) Storage

Storage

- 1) Do not store capacitors in places with high temperature and humidity.

Storage environment should be temperature: 5 °C -35 °C, relative humidity: <75%, storage location: indoors.

Do not keep capacitor in high temperature and high humidity atmosphere.

Storage conditions should be:

Temperature: 5 °C ~ 35 °C Humidity: lower than 75% Place: Indoor

2) Avoid storing water, salt water or oil in the capacitor's storage environment.

Avoid ambient conditions where capacitors are covered with water, brine or oil.

3) Avoid capacitors exposed to ozone, ultraviolet light or radiation.

Avoid ambient conditions where capacitors are exposed to ozone, ultraviolet ray or radiation.

#### G) Disposal

##### Disposal

Please use any of the following methods to dispose of the capacitor:

Please take either of the following methods in disposing capacitors.

1) Open a hole in the capacitor case or crush the capacitor and burn it.

Incinerate them after crushing capacitors or making a hole on the capacitor body.

2) If incineration is not possible, please dispose of it in a waste disposal facility.

If incineration is not applicable, hand them over to a waste disposal agent and have them buried in landfills.