

TANTALUM ELECTROLYTIC CAPACITORS

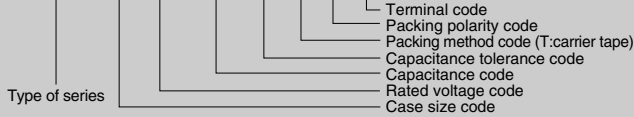
TMCU Series (Ultra Flat Low Profile Tantalum Chip Capacitors)

Features

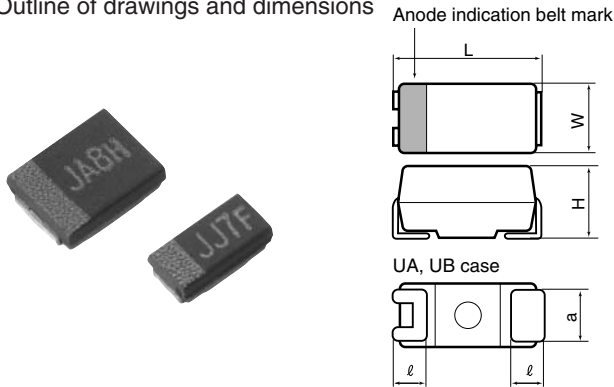
- Low profile tantalum chip capacitors developed to meet the growing needs for flat capacitors where height is critical.
- Small and low profile:
Obtained by thinning the TMCS type.

Product symbol : (Example) TMCU Series A case 4V 100 μ F \pm 20%

TMCU A 0G 107 M T R F



Outline of drawings and dimensions



Dimensions (Unit : mm)

Case code	Case size				
	L ^{+0.2}	W ^{+0.2}	H ^{MAX}	l ^{+0.3}	a ^{+0.2}
UA	3.2	1.6	1.2	0.7	1.2
UB	3.5	2.8	1.2	0.7	1.8

Standard value and case size

Capacitance		Rated voltage (V.DC)							
		2.5	4	6.3 (7)	10	16	20	25	35
μ F	Code	0E	0G	0J	1A	1C	1D	1E	1V
0.10	104								UA
0.15	154								UA
0.22	224								UA
0.33	334								UA
0.47	474								UA
0.68	684							UA	UA
1.0	105							UA,UB	UA,UB
1.5	155					UA		UA,UB	UB
2.2	225					UA,UB		UA,UB	UB
3.3	335					UA,UB		UA,UB	UB
4.7	475				UA	UA,UB		UB	UB
6.8	685				UA	UA,UB		UB	
10	106			UA	UA	UA,UB		UB	
15	156	UA	UA	UA	UA,UB	UB			
22	226	UA	UA	UA,UB	UA,UB	UB			
33	336	UA,UB	UA,UB	UA,UB	UB	UB			
47	476	UA,UB	UA,UB	UA,UB	UB				
68	686	UB	UA,UB	UB					
100	107	UB	UA,UB	UB					
150	157	UB	UB						
220	227	UB	UB						

For ratings not covered in the table, consult Hitachi AIC.

Product specifications	TMCU	Test conditions JIS C5101-1:1998																																																		
Operating temperature range	-55°C ~ +125°C																																																			
Rated voltage	DC2.5 ~ 35V	85°C																																																		
Surge voltage	DC3.2 ~ 45V	85°C																																																		
Derated voltage	DC1.6 ~ 22V	125°C																																																		
Capacitance	0.1 ~ 220 μ F																																																			
Capacitance tolerance	\pm 10% or 20%	Paragraph 4.7, 120 Hz																																																		
Leakage current	Refer to standard product table	Paragraph 4.9, in 5 minutes after the rated voltage is applied.																																																		
tan δ	Refer to standard product table	Paragraph 4.8, 120Hz																																																		
Surge withstanding voltage	Δ C/C \pm 5% or less tan δ Specified initial value or less LC Specified initial value or less	Paragraph 4.26																																																		
Temperature characteristics	<table border="1"> <thead> <tr> <th></th> <th>Specified initial value</th> <th>-55</th> <th>85</th> <th>125</th> </tr> </thead> <tbody> <tr> <td>Δ C/C</td> <td>-</td> <td>-12 ~ 0%</td> <td>0 ~ +10%</td> <td>0 ~ +12%</td> </tr> <tr> <td>tanδ</td> <td>0.04</td> <td>0.05</td> <td>0.04</td> <td>0.05</td> </tr> <tr> <td>Refer to standard product table or less</td> <td>0.06</td> <td>0.08</td> <td>0.06</td> <td>0.06</td> </tr> <tr> <td></td> <td>0.08</td> <td>0.12</td> <td>0.10</td> <td>0.12</td> </tr> <tr> <td></td> <td>0.10</td> <td>0.14</td> <td>0.12</td> <td>0.14</td> </tr> <tr> <td></td> <td>0.12</td> <td>0.16</td> <td>0.14</td> <td>0.16</td> </tr> <tr> <td></td> <td>0.18</td> <td>0.34</td> <td>0.20</td> <td>0.22</td> </tr> <tr> <td></td> <td>0.20</td> <td>0.38</td> <td>0.22</td> <td>0.24</td> </tr> <tr> <td></td> <td>0.30</td> <td>0.60</td> <td>0.30</td> <td>0.40</td> </tr> </tbody> </table> LC Refer to standard product table		Specified initial value	-55	85	125	Δ C/C	-	-12 ~ 0%	0 ~ +10%	0 ~ +12%	tan δ	0.04	0.05	0.04	0.05	Refer to standard product table or less	0.06	0.08	0.06	0.06		0.08	0.12	0.10	0.12		0.10	0.14	0.12	0.14		0.12	0.16	0.14	0.16		0.18	0.34	0.20	0.22		0.20	0.38	0.22	0.24		0.30	0.60	0.30	0.40	Paragraph 4.24
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Solder heat resistance	Δ C/C \pm 5% or less tan δ Specified initial value or less LC Specified initial value or less	Solder Dip 260 \pm 5°C 10 \pm 1 sec. Reflow-260°C 10 \pm 1 sec.																																																		
Moisture resistance no load	Δ C/C \pm 10% or less tan δ Specified initial value or less LC Specified initial value or less	Paragraph 4.22, 40°C 90 ~ 95%RH,500hrs																																																		
High-temperature load	Δ C/C \pm 10% or less tan δ Specified initial value or less LC 125% Specified initial value or less	Paragraph 4.23, 85°C The rated voltage is applied for 2000 hours.																																																		
Thermal shock	Δ C/C \pm 5% or less tan δ Specified initial value or less LC Specified initial value or less	Leave at -55°C, normal temperature, 125°C, and normal temperature for 30 min., 3 min., 30 min., and 3 min. Repeat this operation 5 times running.																																																		
Moisture resistance load	Δ C/C \pm 10% or less tan δ 150% Specified initial value or less LC 200% Specified initial value or less	40°C, humidity 90 to 95%RH The rated voltage is applied for 500 hours.																																																		
Failure rate	1% / 1000hrs	85°C. The rated voltage is applied (through a protective resistor of 1 Ω /V).																																																		

*This catalog is designed for providing general information. Please inquire of our Sales Department to confirm specifications prior to use.

TANTALUM ELECTROLYTIC CAPACITORS

Standard product tables - TMCU series

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Rated voltage V. DC	Capacitance μF	tanδ	Leakage current μA	Case code	Product name
2.5	15	0.08	0.5	UA	TMCUA0E156
		0.08	0.6	UA	TMCUA0E226
	33	0.12	1.7	UA	TMCUA0E336
		0.12	0.8	UB	TMCUB0E336
	47	0.18	2.4	UA	TMCUA0E476
		0.12	1.2	UB	TMCUB0E476
	68	0.12	1.7	UB	TMCUB0E686
	100	0.20	5.0	UB	TMCUB0E107
	150	0.30	7.5	UB	TMCUB0E157
	220	0.30	11.0	UB	TMCUB0E227
4	15	0.08	0.6	UA	TMCUA0G156
		0.08	0.9	UA	TMCUA0G226
	33	0.12	2.6	UA	TMCUA0G336
		0.12	1.3	UB	TMCUB0G336
	47	0.18	3.8	UA	TMCUA0G476
		0.12	1.9	UB	TMCUB0G476
	68	0.30	5.4	UA	TMCUA0G686
		0.15	2.7	UB	TMCUB0G686
	100	0.30	20.0	UA	TMCUA0G107
		0.20	8.0	UB	TMCUB0G107
	150	0.30	12.0	UB	TMCUB0G157
	220	0.30	17.6	UB	TMCUB0G227
6.3 (7)	10	0.08	0.7	UA	TMCUA0J106
	15	0.08	1.1	UA	TMCUA0J156
		0.12	2.8	UA	TMCUA0J226
	22	0.10	1.4	UB	TMCUB0J226
		0.18	4.2	UA	TMCUA0J336
	33	0.10	2.3	UB	TMCUB0J336
		0.20	5.9	UA	TMCUA0J476
	47	0.12	3.3	UB	TMCUB0J476
		0.20	8.6	UB	TMCUB0J686
	100	0.20	12.6	UB	TMCUB0J107
10	4.7	0.06	0.5	UA	TMCUA1A475
	6.8	0.06	0.7	UA	TMCUA1A685
	10	0.08	1.0	UA	TMCUA1A106
		0.12	3.0	UA	TMCUA1A156
	15	0.10	1.5	UB	TMCUB1A156
		0.18	4.4	UA	TMCUA1A226
	22	0.10	2.2	UB	TMCUB1A226
		0.12	6.6	UB	TMCUB1A336
47	0.30	9.4	UB	TMCUB1A476	
16	1.5	0.06	0.5	UA	TMCUA1C155
		0.06	0.5	UA	TMCUA1C225
	2.2	0.06	0.5	UB	TMCUB1C225
		0.06	0.5	UA	TMCUA1C335
	3.3	0.06	0.5	UB	TMCUB1C335
		0.08	0.8	UA	TMCUA1C475
	4.7	0.06	0.8	UB	TMCUB1C475
		0.12	1.1	UA	TMCUA1C685
	6.8	0.06	1.1	UB	TMCUB1C685
		0.18	1.6	UA	TMCUA1C106
	10	0.08	1.6	UB	TMCUB1C106
		0.12	4.8	UB	TMCUB1C156
	22	0.18	7.0	UB	TMCUB1C226
	33	0.30	10.6	UB	TMCUB1C336
20	0.68	0.04	0.5	UA	TMCUA1D684
		0.04	0.5	UA	TMCUA1D105
	1.0	0.04	0.5	UB	TMCUB1D105
		0.06	0.5	UA	TMCUA1D155
	1.5	0.06	0.5	UB	TMCUB1D155
		0.06	0.5	UA	TMCUA1D225
	2.2	0.06	0.5	UB	TMCUB1D225
		0.06	0.7	UA	TMCUA1D335
	3.3	0.06	0.7	UB	TMCUB1D335
		0.06	0.9	UB	TMCUB1D475
	6.8	0.06	1.4	UB	TMCUB1D685
	10	0.08	2.0	UB	TMCUB1D106
25	0.33	0.04	0.5	UA	TMCUA1E334
	0.47	0.04	0.5	UA	TMCUA1E474
	0.68	0.08	0.5	UA	TMCUA1E684
	1.0	0.08	0.5	UA	TMCUA1E105
	1.5	0.06	0.4	UB	TMCUB1E155
	2.2	0.06	0.6	UB	TMCUB1E225
	3.3	0.06	0.8	UB	TMCUB1E335
	4.7	0.06	1.2	UB	TMCUB1E475
35	0.1	0.04	0.5	UA	TMCUA1V104
	0.15	0.04	0.5	UA	TMCUA1V154

Rated voltage V. DC	Capacitance μF	tanδ	Leakage current μA	Case code	Product name
35	0.22	0.04	0.5	UA	TMCUA1V224
		0.08	0.5	UA	TMCUA1V105
	1.0	0.06	0.4	UB	TMCUB1V105
		0.06	0.5	UB	TMCUB1V155
	2.2	0.06	0.8	UB	TMCUB1V225

Marking indication

TMCU * △△□□□○○○F

10V1μF
UA case

16V1μF
UA case

① Simplified code of nominal capacitance (A6 : 1μF)
② Lot indication (n: for manufacturing in January, 2008)
③ Anode indication belt mark
④ Simplified code of rated voltage (C : 16V)

*When the capacitance code is the same in the same case, use the voltage code for the higher rated voltage.

Lot indication

Year	Month											
	1	2	3	4	5	6	7	8	9	10	11	12
2007	a	b	c	d	e	f	g	h	j	k	l	m
2008	n	p	q	r	s	t	u	v	w	x	y	z
2009	A	B	C	D	E	F	G	H	J	K	L	M
2010	N	P	Q	R	S	T	U	V	W	X	Y	Z