TMCU Series (Ultra Flat Low Profile Tantalum Chip Capacitors)

Features

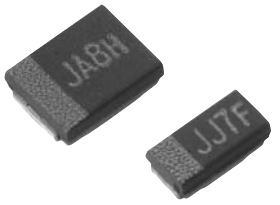
- Low profile tantalum chip capacitors developed to meet the growing needs for flat capacitors where height is critical.
- Small and low profile:
  Obtained by thinning the TMCS type.

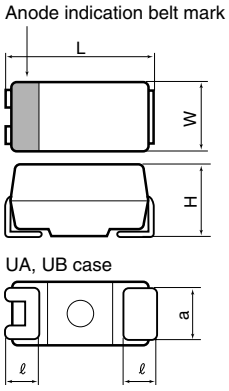
Product symbol : (Example) TMCU Series A case 4V 100µF ±20%

TMCU A 0G 107 M T R F

- TMCU — Type of series
- A — Case size code
- 0G — Rated voltage code
- 107 — Capacitance code
- M — Capacitance tolerance code (M : ± 20%)
- T — Packing method code (T : carrier tape)
- R — Packing polarity code
- F — Terminal code

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
µF	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	UA,UB
1.5	155					UA	UA,UB	UB	UB
2.2	225					UA,UB	UA,UB	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 ~ 220µF	
Capacitance tolerance	±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.
tanδ	Refer to standard product table	Paragraph 4.8, 120Hz
Surge withstanding voltage	△C/C ±5% or less tanδ Specified initial value or less LC Specified initial value or less	Paragraph 4.26
Temperature characteristics	(see table below)	Paragraph 4.24
Solder heat resistance	△C/C ±5% or less tanδ Specified initial value or less LC Specified initial value or less	Solder Dip 260±5°C 10±1 sec. Reflow–260°C 10±1 sec.
Moisture resistance no load	△C/C ±10% or less tanδ Specified initial value or less LC Specified initial value or less	Paragraph 4.22, 40°C 90 ~ 95%RH,500hrs
High-temperature load	△C/C ±10% or less tanδ 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	△C/C ±5% or less tanδ 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	△C/C ±10% or less tanδ 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).

Temperature characteristics

	Specified initial value	–55	85	125
△C/C	–	-12 ~ 0%	0 ~ +10%	0 ~ +12%
tanδ Value shown table or less	0.04	0.05	0.04	0.05
	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
LC	Refer to standard product table	–	1000% or less specified intial value or less	1250% or less specified intial value or less

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

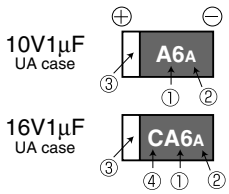
Standard product tables - TMCU series

Standard product table - TMCU series

Rated voltage V. DC	Capacitance μF	tanδ	Leakage current μA	Case code	Product name
2.5	15	0.08	0.5	UA	TMCUA0E156
	22	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
	22	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
	22	0.12	2.8	UA	TMCUA0J226
		0.10	1.4	UB	TMCUB0J226
	33	0.18	4.2	UA	TMCUA0J336
		0.10	2.3	UB	TMCUB0J336
	47	0.20	5.9	UA	TMCUA0J476
		0.12	3.3	UB	TMCUB0J476
	68	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
	15	0.12	3.0	UA	TMCUA1A156
		0.10	1.5	UB	TMCUB1A156
	22	0.18	4.4	UA	TMCUA1A226
		0.10	2.2	UB	TMCUB1A226
	33	0.12	6.6	UB	TMCUB1A336
	47	0.30	9.4	UB	TMCUB1A476
16	1.5	0.06	0.5	UA	TMCUA1C155
	2.2	0.06	0.5	UA	TMCUA1C225
		0.06	0.5	UB	TMCUB1C225
	3.3	0.06	0.5	UA	TMCUA1C335
		0.06	0.5	UB	TMCUB1C335
	4.7	0.08	0.8	UA	TMCUA1C475
		0.06	0.8	UB	TMCUB1C475
	6.8	0.12	1.1	UA	TMCUA1C685
		0.06	1.1	UB	TMCUB1C685
	10	0.18	1.6	UA	TMCUA1C106
		0.08	1.6	UB	TMCUB1C106
	15	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
	1.0	0.04	0.5	UA	TMCUA1D105
		0.04	0.5	UB	TMCUB1D105
	1.5	0.06	0.5	UA	TMCUA1D155
		0.06	0.5	UB	TMCUB1D155
	2.2	0.06	0.5	UA	TMCUA1D225
		0.06	0.5	UB	TMCUB1D225
	3.3	0.06	0.7	UA	TMCUA1D335
		0.06	0.7	UB	TMCUB1D335
	4.7	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
	0.22	0.04	0.5	UA	TMCUA1V224
	1.0	0.08	0.5	UA	TMCUA1V105
		0.06	0.4	UB	TMCUB1V105
	1.5	0.06	0.5	UB	TMCUB1V155
	2.2	0.06	0.8	UB	TMCUB1V225

Marking indication

TMCU ∗ △△□□□○○○F



① Simplified code of nominal capacitance (A6 : 1μF)

② Lot indication (A:for manufacturing in January, 2009)

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
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
2011	a	b	c	d	e	f	g	h	j	k	l	m
2012	n	p	q	r	s	t	u	v	w	x	y	z