

TANTALUM ELECTROLYTIC CAPACITORS

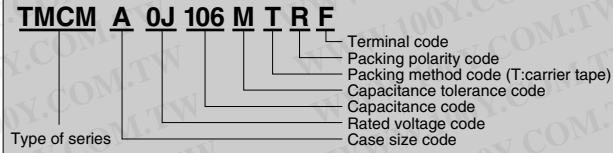
TMCM Series

(Miniaturized Tantalum Chip Capacitors with Extended Capacitance Range)

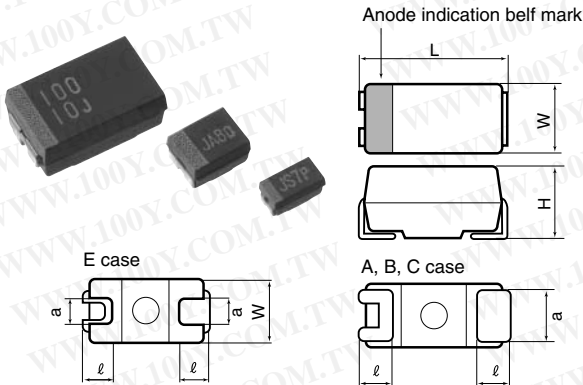
Features

- A model type miniaturized chip capacitor developed on the basis of TMCS production technology ideal for high density component mounting applied in AV equipment.
- Super compact : Reduced size 1/2 to 1/3 in comparison with TMCS.

Product symbol : (Example) TMCM Series A case 7V 10 μ F \pm 20%



Outline of drawings and dimensions



Dimensions (Unit : mm)

Case code	Case size				
	L \pm 0.2	W \pm 0.2	H \pm 0.2	ϕ \pm 0.3	a \pm 0.2
A	3.2	1.6	1.6	0.7	1.2
B	3.5	2.8	1.9	0.8	2.2
C	5.8	3.2	2.5	1.3	2.2
E	7.3	4.3 \pm 0.3	2.8	1.3	2.4

Standard value and case size

Capacitance	Code	Rated voltage (V.DC)								
		2.5	4	6.3 (7)	10	16	20	25	35	
μ F		0E	0G	0J	1A	1C	1D	1E	1V	
0.47	474								A	
0.68	684							A	A	
1.0	105						A	A	A	
1.5	155					A	A	A	A,B	
2.2	225				A	A	A	A,B	B	
3.3	335			A	A	A	A,B	A,B	B	
4.7	475		A	A	A	A,B	A,B	A,B	C	
6.8	685	A	A	A	A,B	A,B	A,B	C	C	
10	106	A	A	A,B	A,B	A,B	B	C	C,E	
15	156	A	A,B	A,B	A,B	A,B,C	B,C	C,E	E	
22	226	A,B	A,B	A,B	A,B,C	A,B,C	B,C,E	C,E	E	
33	336	A,B	A,B	A,B,C	A,B,C	B,C,E	C,E	E		
47	476	A,B	A,B,C	A,B,C	A,B,C,E	B,C,E	E			
68	686	A,B,C	A,B,C	A,B,C,E	B,C,E	E	E			
100	107	A,B,C	A,B,C,E	A,B,C,E	B,C,E	E				
150	157	A,B,C,E	A,B,C,E	B,C,E	C,E					
220	227	A,B,C,E	A,B,C,E	B,C,E	E					
330	337	B,C,E	B,C,E	C,E	E					
470	477	B,C,E	E	E						

For ratings not covered the table, consult Hitachi AIC.

Product specifications	TMCM	Test conditions JIS C5101-3-1998																																																						
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	0.47 ~ 470 μ F																																																							
Capacitance tolerance	\pm 10% or 20%	Paragraph 7.8, 120 Hz																																																						
Leakage current	Refer to table standard product table	Paragraph 7.7, in 5 minutes after the rated voltage is applied.																																																						
tan δ	Refer to table standard product table	Paragraph 7.9, 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 7.14																																																						
Temperature characteristics	<table border="1"> <thead> <tr> <th>Specimen size</th> <th>-55</th> <th>85</th> <th>125</th> </tr> </thead> <tbody> <tr> <td>ΔC/C</td> <td>-</td> <td>-10 ~ 0%</td> <td>0 ~ +10%</td> <td>0 ~ +12%</td> </tr> <tr> <td>tanδ</td> <td>0.04</td> <td>0.09</td> <td>0.07</td> <td>0.09</td> </tr> <tr> <td>Microleakage or less</td> <td>0.06</td> <td>0.10</td> <td>0.08</td> <td>0.10</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>0.16</td> <td>0.20</td> <td>0.18</td> <td>0.20</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>0.36</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>	Specimen size	-55	85	125	Δ C/C	-	-10 ~ 0%	0 ~ +10%	0 ~ +12%	tan δ	0.04	0.09	0.07	0.09	Microleakage or less	0.06	0.10	0.08	0.10		0.08	0.12	0.10	0.12		0.10	0.14	0.12	0.14		0.12	0.16	0.14	0.16		0.16	0.20	0.18	0.20		0.18	0.34	0.20	0.22		0.20	0.36	0.22	0.24		0.30	0.60	0.30	0.40	Paragraph 7.12
Specimen size	-55	85	125																																																					
Δ C/C	-	-10 ~ 0%	0 ~ +10%	0 ~ +12%																																																				
tan δ	0.04	0.09	0.07	0.09																																																				
Microleakage or less	0.06	0.10	0.08	0.10																																																				
	0.08	0.12	0.10	0.12																																																				
	0.10	0.14	0.12	0.14																																																				
	0.12	0.16	0.14	0.16																																																				
	0.16	0.20	0.18	0.20																																																				
	0.18	0.34	0.20	0.22																																																				
	0.20	0.36	0.22	0.24																																																				
	0.30	0.60	0.30	0.40																																																				
LC	Refer to standard product table	1000% or less 1250% or less Specified initial value or less Specified initial value or less																																																						
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 A, B case C, E case 10 \pm 1 sec. 5 \pm 0.5 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 9.5, 40°C 90 ~ 95%RH,500hours																																																						
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 9.10, 85°C The rated voltage is applied for 2000 hours.																																																						
Thermal shock	Δ C/C \pm 10% 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% / 1000hours	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.

勝特力材料 886-3-5753170
 勝特力电子(上海) 86-21-54151736
 勝特力电子(深圳) 86-755-83298787
[Http://www.100y.com.tw](http://www.100y.com.tw)

TANTALUM ELECTROLYTIC CAPACITORS

Standard product tables - TCMC series

Standard product table - TCMC series

Rated voltage V. DC	Capacitance μ F	$\tan\delta$	Leakage current μ A	Case code	Product name	
2.5	6.8	0.06	0.5	A	TMCMA0E685	
		0.08	0.5	A	TMCMA0E106	
		0.08	0.5	A	TMCMA0E156	
	22	0.08	0.6	A	TMCMA0E226	
		0.08	0.6	B	TMCMB0E226	
	33	0.08	0.8	A	TMCMA0E336	
		0.08	0.8	B	TMCMB0E336	
	47	0.12	1.2	A	TMCMA0E476	
		0.08	1.2	B	TMCMB0E476	
		0.18	1.7	A	TMCMA0E686	
	68	0.08	1.7	B	TMCMB0E686	
		0.08	1.7	C	TMCMC0E686	
	100	0.18	5.0	A	TMCMA0E107	
		0.12	2.5	B	TMCMB0E107	
		0.08	2.5	C	TMCMC0E107	
		0.30	7.5	A	TMCMA0E157	
	150	0.18	3.8	B	TMCMB0E157	
		0.08	3.8	C	TMCMC0E157	
		0.08	3.8	E	TMCME0E157	
	220	0.30	27.5	A	TMCMA0E227	
		0.18	5.5	B	TMCMB0E227	
		0.08	5.5	C	TMCMC0E227	
		0.08	5.5	E	TMCME0E227	
	330	0.30	41.3	B	TMCMB0E337	
		0.18	8.3	C	TMCMC0E337	
		0.10	8.3	E	TMCME0E337	
	470	0.30	58.8	B	TMCMB0E477	
		0.18	11.8	C	TMCMC0E477	
		0.10	11.8	E	TMCME0E477	
	4	4.7	0.06	0.5	A	TMCMA0G475
			0.06	0.5	A	TMCMA0G685
		10	0.08	0.5	A	TMCMA0G106
			0.08	0.6	A	TMCMA0G156
		15	0.08	0.6	B	TMCMB0G156
			0.08	0.9	A	TMCMA0G226
		22	0.08	0.9	B	TMCMB0G226
			0.08	1.3	A	TMCMA0G336
		33	0.08	1.3	B	TMCMB0G336
			0.12	1.9	A	TMCMA0G476
		47	0.08	1.9	B	TMCMB0G476
			0.08	1.9	C	TMCMC0G476
			0.12	5.4	A	TMCMA0G686
		68	0.08	2.7	B	TMCMB0G686
			0.08	2.7	C	TMCMC0G686
		100	0.30	8.0	A	TMCMA0G107
0.12			4.0	B	TMCMB0G107	
0.08			4.0	C	TMCMC0G107	
150		0.08	4.0	E	TMCME0G107	
		0.30	60.0	A	TMCMA0G157	
		0.18	6.0	B	TMCMB0G157	
		0.08	6.0	C	TMCMC0G157	
220		0.08	6.0	E	TMCME0G157	
		0.30	88.0	A	TMCMA0G227	
		0.18	17.6	B	TMCMB0G227	
330		0.12	8.8	C	TMCMC0G227	
		0.08	8.8	E	TMCME0G227	
		0.30	132.0	B	TMCMB0G337	
470		0.18	13.2	C	TMCMC0G337	
		0.10	13.2	E	TMCME0G337	
		0.10	18.8	E	TMCME0G477	
6.3 (7)		3.3	0.06	0.5	A	TMCMA0J335
			0.06	0.5	A	TMCMA0J475
		6.8	0.06	0.5	A	TMCMA0J685
			0.08	0.7	A	TMCMA0J106
		10	0.08	0.7	B	TMCMB0J106
			0.08	1.1	A	TMCMA0J156
		15	0.08	1.1	B	TMCMB0J156
			0.08	1.5	A	TMCMA0J226
		22	0.08	1.5	B	TMCMB0J226
			0.10	2.3	A	TMCMA0J336
		33	0.08	2.3	B	TMCMB0J336
			0.08	2.3	C	TMCMC0J336
		47	0.12	5.9	A	TMCMA0J476
			0.08	3.3	B	TMCMB0J476

Rated voltage V. DC	Capacitance μ F	$\tan\delta$	Leakage current μ A	Case code	Product name	
6.3 (7)	47	0.08	3.3	C	TMCMC0J476	
		0.18	8.6	A	TMCMA0J686	
	68	0.10	4.8	B	TMCMB0J686	
		0.08	4.8	C	TMCMC0J686	
		0.08	4.8	E	TMCME0J686	
		0.20	31.5	A	TMCMA0J107	
	100	0.12	7.0	B	TMCMB0J107	
		0.08	7.0	C	TMCMC0J107	
		0.08	7.0	E	TMCME0J107	
		0.18	18.9	B	TMCMB0J157	
	150	0.10	10.5	C	TMCMC0J157	
		0.08	10.5	E	TMCME0J157	
		0.30	27.7	B	TMCMB0J227	
	220	0.18	15.4	C	TMCMC0J227	
		0.10	15.4	E	TMCME0J227	
		0.30	23.1	C	TMCMC0J337	
	330	0.10	23.1	E	TMCME0J337	
		0.20	32.9	E	TMCME0J477	
	10	2.2	0.06	0.5	A	TMCMA1A225
			0.06	0.5	A	TMCMA1A335
		4.7	0.06	0.5	A	TMCMA1A475
0.06			0.7	A	TMCMA1A685	
6.8		0.06	0.7	B	TMCMB1A685	
		0.08	1.0	A	TMCMA1A106	
10		0.08	1.0	B	TMCMB1A106	
		0.08	1.5	A	TMCMA1A156	
15		0.08	1.5	B	TMCMB1A156	
		0.12	4.4	A	TMCMA1A226	
22		0.08	2.2	B	TMCMB1A226	
		0.08	2.2	C	TMCMC1A226	
		0.18	6.6	A	TMCMA1A336	
33		0.08	3.3	B	TMCMB1A336	
		0.08	3.3	C	TMCMC1A336	
		0.20	9.4	A	TMCMA1A476	
47		0.10	4.7	B	TMCMB1A476	
		0.08	4.7	C	TMCMC1A476	
		0.08	4.7	E	TMCME1A476	
		0.18	6.8	B	TMCMB1A686	
68		0.08	6.8	C	TMCMC1A686	
		0.08	6.8	E	TMCME1A686	
		0.30	20.0	B	TMCMB1A107	
100		0.10	10.0	C	TMCMC1A107	
		0.08	10.0	E	TMCME1A107	
		0.18	30.0	C	TMCMC1A157	
150		0.08	15.0	E	TMCME1A157	
		0.12	22.0	E	TMCME1A227	
330		0.20	33.0	E	TMCME1A337	
		16	1.5	0.06	0.5	A
0.06				0.5	A	TMCMA1C225
3.3			0.06	0.5	A	TMCMA1C335
			0.06	0.8	A	TMCMA1C475
4.7	0.06		0.8	B	TMCMB1C475	
	0.06		1.1	A	TMCMA1C685	
6.8	0.06		1.1	B	TMCMB1C685	
	0.08		1.6	A	TMCMA1C106	
10	0.08		1.6	B	TMCMB1C106	
	0.12		2.4	A	TMCMA1C156	
15	0.08		2.4	B	TMCMB1C156	
	0.08		2.4	C	TMCMC1C156	
22	0.16	7.0	A	TMCMA1C226		
	0.08	3.5	B	TMCMB1C226		
	0.08	3.5	C	TMCMC1C226		
33	0.12	5.3	B	TMCMB1C336		
	0.08	5.3	C	TMCMC1C336		
	0.08	5.3	E	TMCME1C336		
47	0.20	7.5	B	TMCMB1C476		
	0.08	7.5	C	TMCMC1C476		
	0.08	7.5	E	TMCME1C476		
68	0.08	10.9	E	TMCME1C686		
	0.08	16.0	E	TMCME1C107		
20	1	0.04	0.5	A	TMCMA1D105	
		0.06	0.5	A	TMCMA1D155	
	2.2	0.06	0.5	A	TMCMA1D225	
		0.06	0.7	A	TMCMA1D335	

Standard product table - TMCM series

Rated voltage V. DC	Capacitance μF	$\tan\delta$	Leakage current μA	Case code	Product name
20	3.3	0.06	0.7	B	TMCMB1D335
		0.06	0.9	A	TMCMA1D475
	4.7	0.06	0.9	B	TMCMB1D475
		0.06	1.4	B	TMCMB1D685
	10	0.08	2.0	B	TMCMB1D106
		0.08	2.0	C	TMCMC1D106
	15	0.08	3.0	B	TMCMB1D156
		0.08	3.0	C	TMCMC1D156
	22	0.08	4.4	B	TMCMB1D226
		0.08	4.4	C	TMCMC1D226
		0.08	4.4	E	TMCME1D226
	33	0.08	6.6	C	TMCMC1D336
0.08		6.6	E	TMCME1D336	
47	0.08	9.4	E	TMCME1D476	
	0.08	13.6	E	TMCME1D686	
25	0.68	0.04	0.5	A	TMCMA1E684
	1	0.04	0.5	A	TMCMA1E105
	1.5	0.06	0.5	A	TMCMA1E155
		0.06	0.6	B	TMCMB1E225
	3.3	0.06	0.8	A	TMCMA1E335
		0.06	0.8	B	TMCMB1E335
	4.7	0.08	1.2	A	TMCMA1E475
		0.06	1.2	B	TMCMB1E475
	6.8	0.06	1.7	C	TMCMC1E685
		0.08	2.5	C	TMCMC1E106
	15	0.08	3.8	C	TMCMC1E156
		0.08	3.8	E	TMCME1E156
	22	0.08	5.5	C	TMCMC1E226
0.08		5.5	E	TMCME1E226	
33	0.08	8.3	E	TMCME1E336	
35	0.47	0.04	0.5	A	TMCMA1V474
	0.68	0.04	0.5	A	TMCMA1V684
	1	0.04	0.5	A	TMCMA1V105
	1.5	0.06	0.5	A	TMCMA1V155
		0.06	0.5	B	TMCMB1V155
	2.2	0.06	0.8	B	TMCMB1V225
		0.06	1.2	B	TMCMB1V335
	4.7	0.06	1.6	C	TMCMC1V475
		0.06	2.4	C	TMCMC1V685
	10	0.08	3.5	C	TMCMC1V106
		0.08	3.5	E	TMCME1V106
	15	0.08	5.3	E	TMCME1V156
		0.08	7.7	E	TMCME1V226

Lot indication

Month Year	1	2	3	4	5	6	7	8	9	10	11	12
	2005	A	B	C	D	E	F	G	H	J	K	L
2006	N	P	Q	R	S	T	U	V	W	X	Y	Z
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

勝特力材料 886-3-5753170
勝特力电子(上海) 86-21-54151736
勝特力电子(深圳) 86-755-83298787
Http://www.100y.com.tw

Marking indication TMCM series

TMCM*△△□□○○○F	
A, B case	<p> Anode indication belt mark Simplified code of rated voltage (G : 4V) Lot indication (for manufacturing in January, 2005) Simplified code of nominal capacitance (A7 : 10μF) </p>
C, E case	<p> Anode indication belt mark Nominal capacitance Value (15μF) Lot indication (for manufacturing in January, 2005) Rated voltage (16V) </p>