

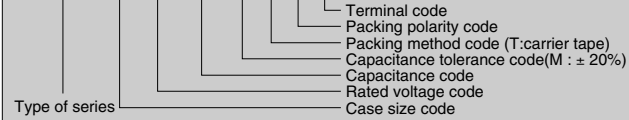
TMCS Series (Standard Tantalum Chip Capacitors)

Features

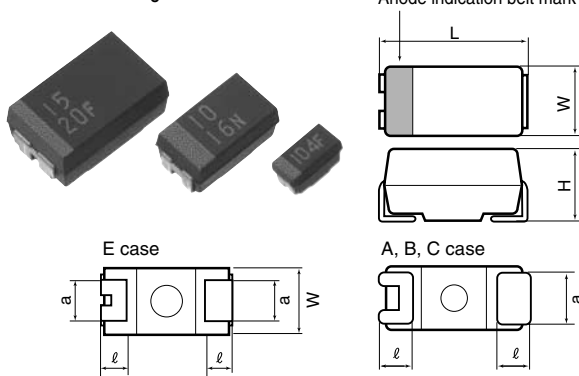
- The product is a standard type that has been most widely used among tantalum chip capacitors. The product has high solder heat resistance and is suitable for automatic mounting.
- The product is provided with both excellent frequency characteristic and excellent impedance characteristics.

Product symbol : (Example) TMCS Series A case 16V 1 μ F \pm 20%

TMCS A 1C 105 M T R F



Outline of drawings and dimensions



Dimensions

(Unit: mm)

Case code	Case size				
	L ^{+0.2}	W ^{+0.2}	H ^{+0.2}	ℓ ^{+0.3}	a ^{+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 ^{+0.3}	2.8	1.3	2.4

Standard value and case size

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

Product specifications	TMCS	Test conditions JIS C5101-1:1998																			
Operating temperature range	-55°C ~ +125°C																				
Rated voltage	DC4 ~ 35V	85°C																			
Surge voltage	DC5 ~ 45V	85°C																			
Derated voltage	DC2.5 ~ 22V	125°C																			
Capacitance	0.1 ~ 68 μ F																				
Capacitance tolerance	\pm 10% or 20%	Paragraph 4.7, 120 Hz																			
Leakage current	0.01 CV or 0.5 μ A, whichever is larger or less	Paragraph 4.9, in 5 minutes after the rated voltage is applied.																			
tan δ	0.1 ~ 1.0 0.04 or less 1.5 ~ 68 0.06 or less	Paragraph 4.8, 120Hz																			
Temperature characteristics	<table border="1"> <thead> <tr> <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>-10 ~ 0%</td> <td>0 ~ +10%</td> <td>0 ~ +12%</td> </tr> <tr> <td>tanδ</td> <td>0.04</td> <td>0.04</td> <td>0.05</td> <td>0.05</td> </tr> <tr> <td>Release rate or less</td> <td>0.06</td> <td>0.06</td> <td>0.07</td> <td>0.07</td> </tr> </tbody> </table>	Specified initial value	-55	85	125	Δ C/C	-	-10 ~ 0%	0 ~ +10%	0 ~ +12%	tan δ	0.04	0.04	0.05	0.05	Release rate or less	0.06	0.06	0.07	0.07	Paragraph 4.24
	Specified initial value	-55	85	125																	
	Δ C/C	-	-10 ~ 0%	0 ~ +10%	0 ~ +12%																
	tan δ	0.04	0.04	0.05	0.05																
Release rate or less	0.06	0.06	0.07	0.07																	
LC	0.01CV or 0.5 μ A or less	-	0.1CV or 5 μ A or less	0.125CV or 6.25 μ A 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 5% or less tan δ Specified initial value or less LC Specified initial value or less	Paragraph 4.22, 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 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 20 times running.																			
Moisture resistance load	Δ C/C \pm 10% or less tan δ 150% Specified initial value or less LC 125% 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.

Sinus Electronic GmbH
07132 9969 25
Michael.Feimer@sinus-electronic.de

Standard product tables - TMCS series

Standard product table - TMCS series

Rated voltage V.DC	Capacitance μF	tanδ	Leakage current μA	Case code	Product name	ESR 100kHz Ω
4	3.3	0.06	0.5	A	TMCSA0G335	4.0
	10	0.06	0.5	B	TMCSB0G106	1.7
	33	0.06	1.3	C	TMCSC0G336	1.1
	68	0.06	2.7	E	TMCSE0G686	0.6
7	2.2	0.06	0.5	A	TMCSA0J225	4.4
	6.8	0.06	0.5	B	TMCSB0J685	2.8
	22	0.06	1.5	C	TMCSC0J226	1.1
	47	0.06	3.3	E	TMCSE0J476	0.9
10	1.5	0.06	0.5	A	TMCSA1A155	4.4
	4.7	0.06	0.5	B	TMCSB1A475	2.8
	15	0.06	1.5	C	TMCSC1A156	2.2
	33	0.06	3.3	E	TMCSE1A336	0.9
16	1.0	0.04	0.5	A	TMCSA1C105	6.6
	3.3	0.06	0.5	B	TMCSB1C335	3.9
	10	0.06	1.6	C	TMCSC1C106	1.7
	22	0.06	3.5	E	TMCSE1C226	0.9
20	0.68	0.04	0.5	A	TMCSA1D684	9.7
	2.2	0.06	0.5	B	TMCSB1D225	3.9
	6.8	0.06	1.4	C	TMCSC1D685	1.7
	15	0.06	3.0	E	TMCSE1D156	0.9
25	0.47	0.04	0.5	A	TMCSA1E474	16.5
	1.5	0.06	0.5	B	TMCSB1E155	3.9
	4.7	0.06	1.2	C	TMCSC1E475	2.8
	10	0.06	2.5	E	TMCSE1E106	2.0
35	0.1	0.04	0.5	A	TMCSA1V104	38.5
	0.15	0.04	0.5	A	TMCSA1V154	38.5
	0.22	0.04	0.5	A	TMCSA1V224	38.5
	0.33	0.04	0.5	A	TMCSA1V334	22.0
	0.47	0.04	0.5	B	TMCSB1V474	19.8
	0.68	0.04	0.5	B	TMCSB1V684	8.8
	1.0	0.04	0.5	B	TMCSB1V105	3.9
	1.5	0.06	0.5	C	TMCSC1V155	5.0
	2.2	0.06	0.8	C	TMCSC1V225	5.0
	3.3	0.06	1.2	C	TMCSC1V335	3.9
4.7	0.06	1.6	E	TMCSE1V475	2.8	
6.8	0.06	2.4	E	TMCSE1V685	1.7	

Marking indication TMCS series

TMCS * △△□□□○○○F	
A, B case	<p>① Anode indication belt mark ② Simplified code of nominal capacitance (A7 : 10μF) ③ Marking code</p>
C, E case	<p>① Anode indication belt mark ② Nominal capacitance Value (10μF) ③ Rated voltage (16V) ④ Marking code</p>

Marking code

Month Year	1	2	3	4	5	6	7	8	9	10	11	12
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
2013	A	B	C	D	E	F	G	H	J	K	L	M
2014	N	P	Q	R	S	T	U	V	W	X	Y	Z