

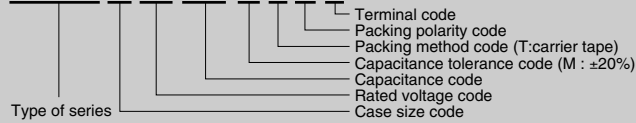
TMCTX Series (Tantalum Chip Capacitors with Internal Fuse)

Features

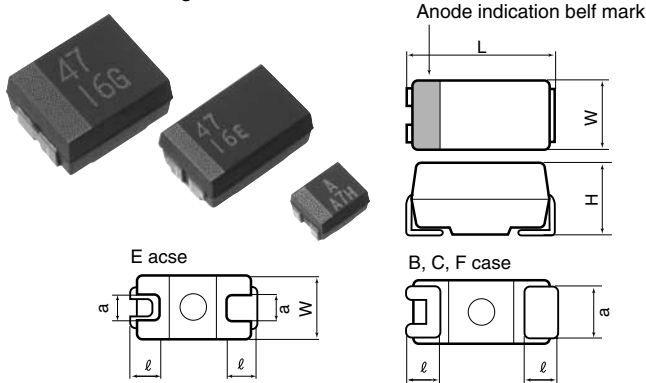
- Protective-device-incorporated chip tantalum capacitor which is obtained by adding a thermal fuse to the TMC type.
 - High heat resistance: Withstands infra-red-reflow and solder dip and high reliability.
 - Prevention of fire or smoke with the work of internal fuse.
- Fusing characteristics:
- B, C cases: Open in less than 100 sec at 1.5 A or in less than 5 sec at 5 A.
 - E, F cases: Open in less than 5 sec at 5 A.

Product symbol : (Example) TMCTX Series C case 16V 10 μ F \pm 20%

TMCTX C 1C 106 M T R F



Outline of drawings and dimensions



Dimensions (Unit : mm)

Case code	Case size				
	L \pm 0.2	W \pm 0.2	H \pm 0.2	l \pm 0.3	a \pm 0.2
B	3.5	2.8	1.9	0.8	2.0
C	5.8	3.2	2.5	1.3	2.4
E	7.3	4.3 \pm 0.3	2.8	1.3	2.4
F	7.3	5.8 \pm 0.3	3.5	1.3	3.5

Standard value and case size

Capacitance	Rated voltage (V.DC)	Case size				
		10	16	20	25	35
μ F	Code	1A	1C	1D	1E	1V
1.0	105					B
1.5	155				B	C
2.2	225			B	B	C
3.3	335		B	B	B	C
4.7	475	B	B	B	C	E
6.8	685	B	B	C	C	E
10	106	B	C	C	E	F
15	156	C	C	E	F	
22	226	C	E	E,F		
33	336	E	E,F	E,F		
47	476	E,F	E,F			
68	686	E,F				

Product specifications	TMCTX	Test conditions JIS C5101-1:1998	
Operating temperature range	-55°C ~ +125°C		
Rated voltage	DC10 ~ 35V	85°C	
Surge voltage	DC13 ~ 45V	85°C	
Derated voltage	DC6.3 ~ 22V	125°C	
Capacitance	1 ~ 68 μ F		
Capacitance tolerance	\pm 10% or 20%	Paragraph 4.7, 120 Hz	
Leakage current	0.01CV or 0.5 μ A, whichever is larger or less	Paragraph 4.9, in 5 minutes after the rated voltage is applied.	
tan δ	1.0 or less 0.04 or less 1.5 ~ 22 0.05 or less 33 or more 0.06 or less	Paragraph 4.8, 120Hz	
Temperature characteristics	Δ C/C	Specified initial value -55 85 125 - -12 ~ 0% 0 ~ +10% 0 ~ +12%	Paragraph 4.24
	tan δ	0.04 0.09 0.07 0.09	
	Electromotive force or less	0.05 0.10 0.08 0.10	
	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 B case C,E,F 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 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 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 20 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.

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

Standard product tables - TMCTX series

Standard product table - TMCTX series

Rated voltage V. DC	Capacitance μF	tanδ	Leakage current μA	Case code	Product name	
10	4.7	0.05	0.5	B	TMCTXB1A475	
	6.8	0.05	0.7	B	TMCTXB1A685	
	10	0.05	1.0	B	TMCTXB1A106	
	15	0.05	1.5	C	TMCTXC1A156	
	22	0.05	2.2	C	TMCTXC1A226	
	47	0.06	3.3	3.3	E	TMCTXE1A336
			4.7	4.7	E	TMCTXE1A476
		0.06	4.7	F	TMCTXF1A476	
	68	0.06	6.8	6.8	E	TMCTXE1A686
		0.06	6.8	6.8	F	TMCTXF1A686
16	3.3	0.05	0.5	B	TMCTXB1C335	
	4.7	0.05	0.8	B	TMCTXB1C475	
	6.8	0.05	1.1	B	TMCTXB1C685	
	10	0.05	1.6	C	TMCTXC1C106	
	15	0.05	2.4	C	TMCTXC1C156	
	22	0.05	3.5	3.5	E	TMCTXE1C226
			5.3	5.3	E	TMCTXE1C336
		0.06	5.3	F	TMCTXF1C336	
	47	0.06	7.5	7.5	E	TMCTXE1C476
		0.06	7.5	7.5	F	TMCTXF1C476
20	2.2	0.05	0.5	B	TMCTXB1D225	
	3.3	0.05	0.7	B	TMCTXB1D335	
	4.7	0.05	0.9	B	TMCTXB1D475	
	6.8	0.05	1.4	C	TMCTXC1D685	
	10	0.05	2.0	C	TMCTXC1D106	
	15	0.05	3.0	3.0	E	TMCTXE1D156
			4.4	4.4	E	TMCTXE1D226
		0.05	4.4	F	TMCTXF1D226	
	33	0.06	6.6	6.6	E	TMCTXE1D336
		0.06	6.6	6.6	F	TMCTXF1D336
25	1.5	0.05	0.5	B	TMCTXB1E155	
	2.2	0.05	0.6	B	TMCTXB1E225	
	3.3	0.05	0.8	B	TMCTXB1E335	
	4.7	0.05	1.2	C	TMCTXC1E475	
	6.8	0.05	1.7	C	TMCTXC1E685	
	10	0.05	2.5	E	TMCTXE1E106	
	15	0.05	3.8	F	TMCTXF1E156	
35	1.0	0.04	0.5	B	TMCTXB1V105	
	1.5	0.05	0.5	C	TMCTXC1V155	
	2.2	0.05	0.8	C	TMCTXC1V225	
	3.3	0.05	1.2	C	TMCTXC1V335	
	4.7	0.05	1.6	E	TMCTXE1V475	
	6.8	0.05	2.4	E	TMCTXE1V685	
	10	0.05	3.5	F	TMCTXF1V106	

Marking indication

	TMCTX * △△□□□○○○F
B case	<p>① Anode indication belt mark ② Simplified code of rated voltage (16V) ③ Simplified code of nominal capacitance (N6 : 3.3μF) ④ Marking code</p>
C, E, F 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