THC Series (High reliability at High temperatature (up to 150℃ Tantalum Chip Capacitors)

Features

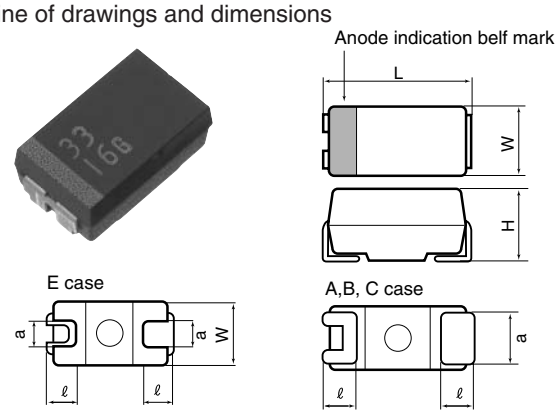
The New THC series capacitor was developed based on the existing high reliability TMCH series
(which is used in many Automobile applications) with an imploved internal element and higher temperature resistance.
The operational temperature is up to 150℃ with derating voltage.

Product symbol : (Example) THC Series E case 35V 10μF ±20%

THC E 1V 106 M T R F

- THC — Type
- E — Case size code
- 1V — Rated voltage code
- 106 — 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±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

Capacitance		Rated voltage (V.DC)				
		10	16	20	25	35
μF	Code	1A	1C	1D	1E	1V
0.33	334					A
0.47	474				A	
0.68	684			A		
1	105		A			B
1.5	155	A			B	
2.2	225			B		
3.3	335		B			C
4.7	475	B			C	C
6.8	685			C	C	
10	106		C	C	C/E	E
15	156	C	C	C/E	E	
22	226	C	C/E	E		
33	336	C/E	E			
47	476	E				

Product specifications	THC	Test conditions JIS C5101-1:1998
Operating temperature range	–55°C ~ +150°C	
Rated voltage	DC10 ~ 35V	105°C
Surge voltage	DC13 ~ 45V	85°C
Derated voltage	DC6.3 ~ 22V	150°C
Capacitance	0.33 ~ 47μF	
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 ±10% or less tanδ Specified initial value or less LC Specified initial value or less	Paragraph 4.26
Temperature characteristics	Specified initial value: –55: –10 ~ 0%; 105: 0 ~ +10%; 150: 0 ~ +20% tanδ: 0.04 / 0.04 / 0.06 / 0.08 Value shown table or less: 0.06 / 0.06 / 0.08 / 0.10 LC: 0.005CV or 0.25μA or less / – / 0.10CV or 5μA or less / 0.125CV or 6.25μA or less	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 A,B case C,E, case 10±1 sec. 5±0.5 sec. Reflow–260°C 10±1 sec.
Moisture resistance no load	△C/C ±10% or less tanδ 150% Specified initial value or less LC 200% Specified initial value or less	Paragraph 4.22, 85°C 85%RH, 1000hrs
High-temperature load	△C/C ±10% or less tanδ Specified initial value or less LC 125% Specified initial value or less	85°C The Rated voltage is applied for 2000hrs (Derated voltage in 150°C)
Thermal shock	△C/C ±10% or less tanδ Specified initial value or less LC 200% Specified initial value or less	Leave at -55°C, normal temperature, 150°C, and normal temperature for 30 min., 3 min., 30 min., and 3 min. Repeat this operation 1000 times running.
Moisture resistance load	△C/C ±10% or less tanδ 150% Specified initial value or less LC 200% Specified initial value or less	65°C, humidity 90 to 95%RH The rated voltage is applied for 500 hours.
Failure rate	0.5% / 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.

Standard product tables - THC series

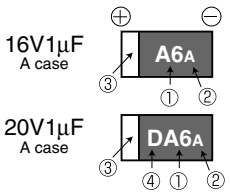
Standard product table - THC series

Rated voltage V. DC	Capacitance µF	tanδ	Leakage current µA	Case code	Product name
10	1.5	0.06	0.25	A	THCA1A155
	4.7	0.06	0.25	B	THCB1A475
	15	0.06	0.75	C	THCC1A156
	22	0.06	1.10	C	THCC1A226
	33	0.06	1.65	C	THCC1A336
		0.06	1.65	E	THCE1A336
	47	0.06	2.35	E	THCE1A476
16	1	0.04	0.25	A	THCA1C105
	3.3	0.06	0.26	B	THCB1C335
	10	0.06	0.80	C	THCC1C106
	15	0.06	1.20	C	THCC1C156
	22	0.06	1.76	C	THCC1C226
		0.06	1.76	E	THCE1C226
	33	0.06	2.64	E	THCE1C336
20	0.68	0.04	0.25	A	THCA1D684
	2.2	0.06	0.25	B	THCB1D225
	6.8	0.06	0.68	C	THCC1D685
	15	0.06	1.50	C	THCC1D156
		0.06	1.50	E	THCE1D156
	22	0.06	2.20	E	THCE1D226
25	0.47	0.04	0.25	A	THCA1E474
	1.5	0.06	0.25	B	THCB1E155
	4.7	0.06	0.58	C	THCC1E475
	6.8	0.06	0.85	C	THCC1E685
	10	0.06	1.25	C	THCC1E106
		0.06	1.25	E	THCE1E106
	15	0.06	1.87	E	THCE1E156
35	0.33	0.04	0.25	A	THCA1V334
	1	0.04	0.25	B	THCB1V105
	3.3	0.06	0.57	C	THCC1V335
	4.7	0.06	0.82	C	THCC1V475
	10	0.06	1.75	E	THCE1V106

Marking indication

THC＊△△□□□○○○F

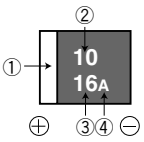
A, B case



①Simplified code of nominal capacitance (A6 : 1µF)
②Lot indication (A:for manufacturing in January, 2009)
③Anode indication belt mark
④Simplified code of rated voltage (D : 20V)

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

C, E case



①Anode indication belt mark
②Nominal capacitance Volue (10µF)
③Rated voltage (16V)
④Lot indication (A:for manufacturing in January, 2009)

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