

THC2 High Energy Tantalum Hybrid Capacitor (Hermetic sealed & Military standard)

❖ Characteristics and application

- All tantalum case, hermetic sealed, Cylindrical, radial leads, Polar
- This product is made up of tantalum capacitor and electrochemical capacitor
- Stable electric performance, high reliability, long life, large energy density,
- Used as battery in Energy conversion circuit and power pulse circuit, Perform Energy storage, power-off delay in circuit. Widely use in aircraft, radar, ship, tank, satellite, aerospace equipment etc.
- Meet standard: GJB733A-96, QJ/PWV20102-2004



❖ How to order: THC2-10V150000 μ F-M: 100PCS

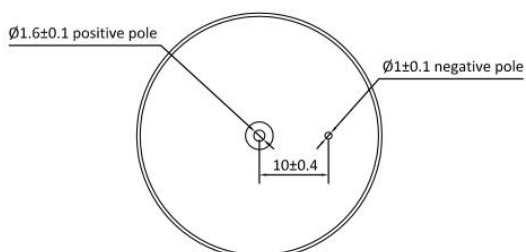
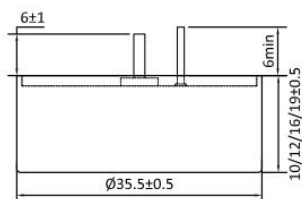
❖ Technical Performance

Temperature range: -55 $^{\circ}$ C ~ +125 $^{\circ}$ C (+125 $^{\circ}$ C use derated voltage)

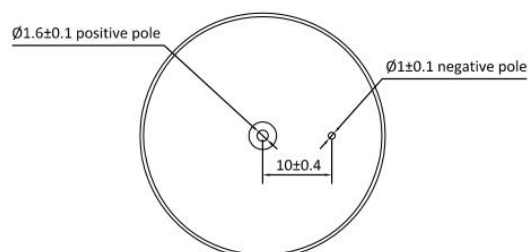
Store environment temperature: -62 $^{\circ}$ C ~ +130 $^{\circ}$ C

Capacitance tolerance: K=±10%; M=±20%; Q=-10% ~ +30%

❖ Size and installation $\phi 35.5 \times 10/12/16/19$ mm



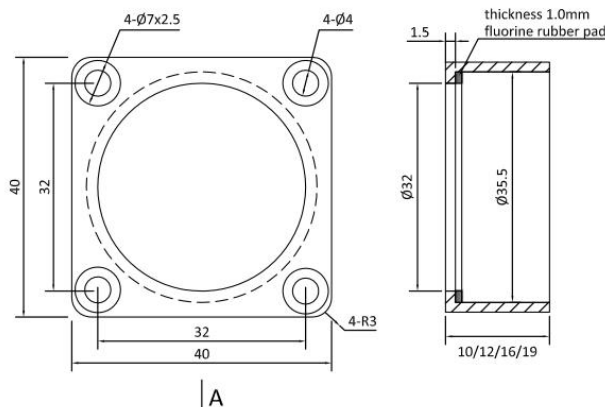
THC2 $\phi 35.5 \times 10/12/16/19$ mm Layout (type A)



THC2 $\phi 35.5 \times 10/12/16/19$ mm Layout (Type B)

A

A-A



THC2 $\phi 35.5 \times 10/12/16/19$ mm Mounting Holder Layout



❖ Electric Performance Characteristics of THC2 series Tantalum Hybrid Capacitor Table 1

Rated Voltage (V)	Derated Voltage (V)	Surge Voltage (V)	Capacitance (μF)	tgδ(%) 100Hz	Max. ESR (Ω) 1KHz	Max. DCL (μA)		IMP. (Ω)	Cap. Change Rate (%)		Size	Weight
						25℃	85℃ 125℃	-55℃ 100Hz	-55℃	+85℃	DxH (mm)	Max. (g)
10	6	11	100000 150000	180	0.035 0.025	300	1800	1	-80	+160	35.5x12 35.5x16	75 100
16	9.5	17.6	60000 90000	165	0.035 0.025	300	1800	1	-80	+160	35.5x12 35.5x16	75 100
25	15	27.5	36000 54000	130	0.04 0.035	300	1800	1	-75	+160	35.5x12 35.5x16	75 100
35	20	38.5	24000 36000	95	0.04 0.035	300	1800	1	-70	+160	35.5x12 35.5x16	75 100
50	30	55	11000	65	0.1	300	2400	1.2	-60	+120	35.5x10	58
			12000	65	0.1	300			-60	+120	35.5x12	75
			16000		0.04				-55	+135	35.5x12	75
			18000		0.04				-55	+135	35.5x12	75
			24000	70	0.035	400			-55	+135	35.5x16	100
63	38	70	8000 12000	50	0.04 0.035	400	2400	1.4	-45	+90	35.5x12 35.5x16	75 100
80	48	88	5600	40	0.06	500	3000	1.6	-40	+90	35.5x12	75
			8200		0.04						35.5x16	100
			9000		0.04						35.5x16	110
100	60	110	2400	35	0.08	500	3000	1.8	-30	+80	35.5x12	75
			3600		0.05						35.5x12	75
			3800		0.05						35.5x16	110
			5700		0.05						35.5x16	110
110	66	121	1200	35	0.08	500	3000	2	-25	+60	35.5x12	75
			1800		0.075						35.5x16	100
			3000		0.075						35.5x16	100
			4500		0.075						35.5x16	100
125	75	138	1100	30	0.08	500	3000	2.4	-25	+50	35.5x12	80
			1600		0.075				-25	+50	35.5x16	110
			2200		0.075				-25	+50	35.5x12	80
			3300		0.05				-25	+50	35.5x16	110
			3300		0.05				-20	+40	35.5x19	145



❖ Environmental and mechanical performance characteristics

Environmental Characteristics		
Item	Test and Condition	Method and Requirement
Hermeticity	GJB360B, method 112, test condition D	The capacitor surface shall have no continuous bubbles within 20s from it dipped into fluorocarbon oil, two areas are not included (a. the gaps between positive tantalum wires and sleeves b. gaps between stainless steel and tantalum shell). Test should keep on if there are bubbles from the two areas to check bubbles stop or go on after 5min. Hermeticity unqualified if it still bubbling. Take the capacitor out of fluorocarbon oil if bubbling stopped and check areas around positive wire and bubbling areas with PH paper. The capacitor hermeticity unqualified if PH paper turn red as acidic.
Moisture resistance	GJB360, method 106	6V polarity
Altitude	GJB360B, method 105, test condition E	Height: 45720m Air pressure: 0.15KPa.

Mechanical Performance Characteristics		
Item	Test and Condition	Method and Requirement
Thermal shock	GJB360B-2009, method 107, test condition A	-55℃~125℃
(Pules) Shock	GJB360B-2009, method 213, test condition G	Final peak saw-tooth shock, last 11ms, peak 50g
Vibration - high frequency	GJB360B-2009, method 204, test condition D	Accelerated speed 20g, frequency range: 10~2000Hz
Vibration - random	GJB360A-96, method 214, test condition I -D	The acceleration root mean square value as 12g, 1.5h
Resistance to solder heat	GJB360B-2009, method 210, test condition B	The capacitor must withstand solder dipping of the terminals at 260 °C for 10s. The capacitor must not be visibly damaged and the electrical characteristics must not be affected.
Solderability	GJB360B-2009, method 208	
Terminal strength	GJB360B-2009, method 208, test condition A	The capacitor terminals must withstand a 14N pull for 30s. The capacitor must not be visibly damaged and the electrical characteristics must not be affected.
Part markings		Marks should be clearly marked on the circumference of the case of capacitor.

❖ Notes:

- Tantalum capacitors can't been measured by multimeter.(Easily cause irreversible damage and lead to reject when reversed polarity);
- Capacitance, DF measure frequency: 100Hz,DC offset voltage $U_1=2.2^{0-1.0}V$,Exchange offset voltage $U_2=1.0^{0-0.5}V$ (effective value), measure method is by series equivalent circuit.
- Measure the leakage current at 125℃,please use derated voltage. DCL. value read at 5 minute.
- Special size and big capacitance products, please consult with GTCAP.