



### 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: THC2-10V150000µF-M: 100PCS**

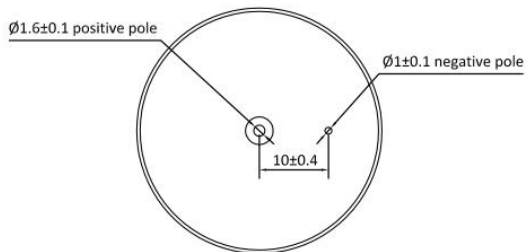
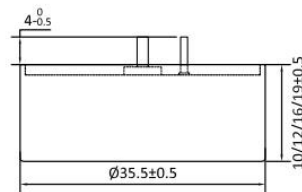
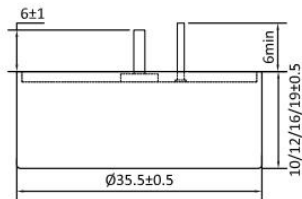
❖ **Technical Performance**

Temperature range: -55°C~+125°C (+125°C use derated voltage)

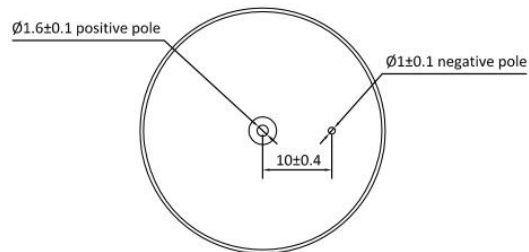
Store environment temperature: -62°C~+130°C

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

❖ **Size and installation φ 35.5x10/12/16/19mm**



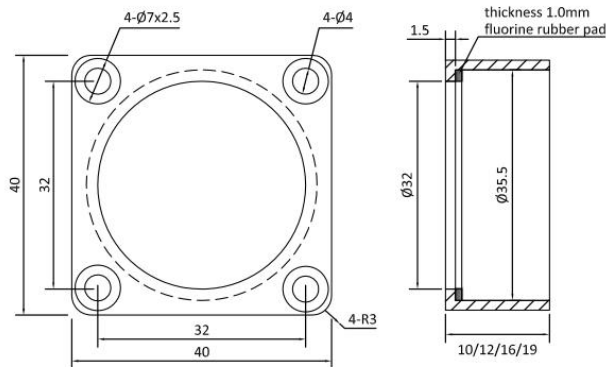
THC2 φ 35.5x10/12/16/19mm Layout (type A)



THC2 φ 35.5x10/12/16/19mm Layout (Type B)

A

A-A



A

THC2 φ 35.5x10/12/16/19mm 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) -55℃ 100Hz	Cap. Change Rate (%)		Size	Weight		
						25℃	85℃ 125℃		-55℃	+85℃	DxH (mm)	Max. (g)		
10	6	11	100000	180	0.035	300	1800	1	-80	+160	35.5x12	75		
			150000		0.025						35.5x16	100		
16	9.5	17.6	60000	165	0.035	300	1800	1	-80	+160	35.5x12	75		
			90000		0.025						35.5x16	100		
25	15	27.5	36000	130	0.04	300	1800	1	-75	+160	35.5x12	75		
			54000		0.035						35.5x16	100		
35	20	38.5	24000	95	0.04	300	1800	1	-70	+160	35.5x12	75		
			36000		0.035						35.5x16	100		
50	30	55	11000	65	0.1	300			-60	+120	35.5x10	58		
			12000		0.1				-60	+120	35.5x12	75		
			16000	65	0.04	300	2400	1.2	-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	50	0.04	400	2400	1.4	-45	+90	35.5x12	75		
			12000		0.035						35.5x16	100		
80	48	88	5600		0.06	500	3000	1.6	-40	+90	35.5x12	75		
			8200	40	0.04								35.5x16	100
			9000		0.04								35.5x16	110
100	60	110	2400		0.08	500	3000	1.8	-30	+80	35.5x12	75		
			3600		0.05								35.5x12	75
			3800	35	0.05								35.5x16	110
			5700		0.05								35.5x16	110
110	66	121	1200		0.08	500	3000	2	-25	+60	35.5x12	75		
			1800		0.075								35.5x16	100
			3000	35	0.075								35.5x16	100
			4500		0.075								35.5x16	100
125	75	138	1100		0.08	500	3000	2.4	-25	+50	35.5x12	80		
			1600		0.075								35.5x16	110
			2200	30	0.075								35.5x12	80
			3300		0.05								35.5x16	110
			3300		0.05								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  $U_1=2.2^{0.1}V$ ,Exchange offset voltage  $U_2=1.0^{0.5}V$ (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.