



THC3 High Energy Tantalum Hybrid Capacitor

(Hermetic sealed & Military standard)



❖ Characteristics and application

- All tantalum case, laser welding hermetic sealed, Cylindrical, radial leads, Polarized.
- This product is made up of tantalum capacitor and electrochemical capacitor
- Stable electric performance, high reliability, long life, large energy density per unit volume, store large energy.
- 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.
- Standard: GJB733A-96, QJ/PWV311-2009

❖ How to order: THC3-25V86000μF-M: 100PCS

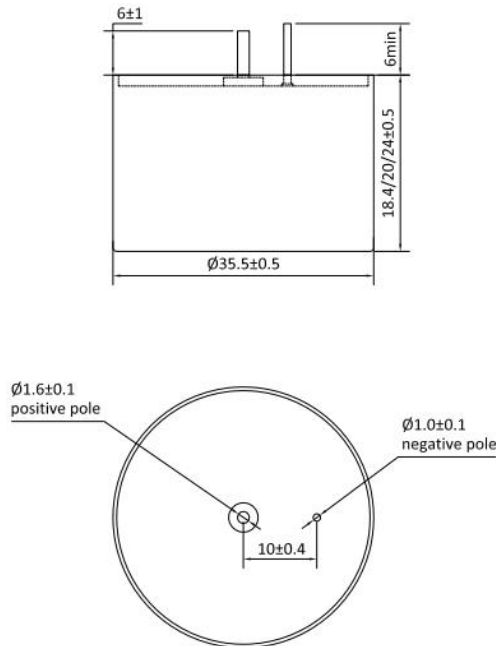
❖ Technical Performance

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

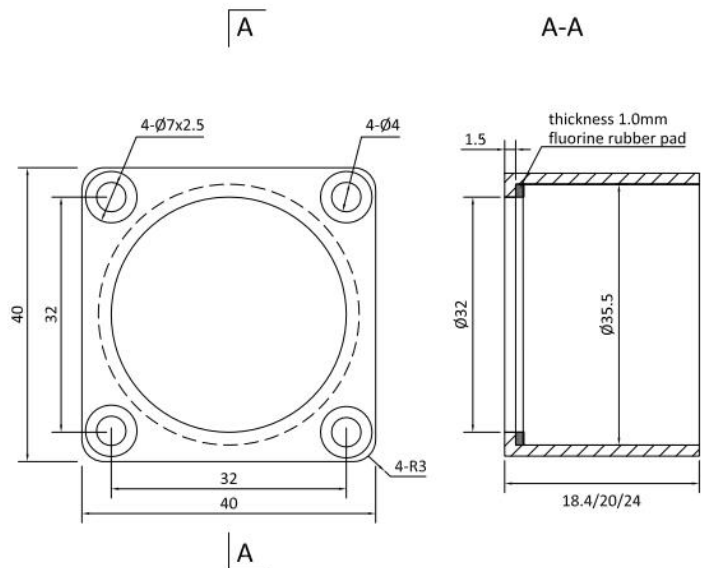
Store environment temperature: $-62^{\circ}\text{C} \sim +130^{\circ}\text{C}$

Capacitance tolerance: K= $\pm 10\%$; M= $\pm 20\%$; Q= $-10\% \sim +30\%$

❖ Size and installation $\phi 35.5 \times 18.4/20/24\text{mm}$



THC3 $\phi 35.5 \times 18.4/20/24\text{mm}$ Layout



THC3 $\phi 35.5 \times 18.4/20/24\text{mm}$ Mounting Holder Layout



❖ Electric Performance Characteristics of THC3 series Tantalum Hybrid Capacitor

Rated Voltage (V)	Derated Voltage (V)	Surge Voltage (V)	Capacitance (μF)	tgδ(%) 100Hz	ESR (Ω) 1KHz	Max. DCL. (μA)		IMP. (Ω) -55℃ 100Hz	Cap. Change rate (%)		Case size	Weight
						25℃	85℃ 125℃		-55℃	+85℃	DxH (mm)	Max. (g)
10	6	11	200000	190	0.025	300	1800	1	-80	+160	35.5x20	145
			230000								35.5x24	165
16	9.5	17.6	120000	170	0.025	300	1800	1	-80	+160	35.5x20	145
			140000								35.5x24	165
25	15	27.5	70000	140	0.025	300	1800	1	-75	+160	35.5x20	145
			86000								35.5x24	165
35	20	38.5	50000	100	0.025	300	1800	1	-70	+160	35.5x20	145
			60000								35.5x24	165
50	30	55	30000	75	0.025	400	2400	1.2	-60	+160	35.5x18.4	110
			30000								35.5x20	145
			32000								35.5x20	145
			33000								35.5x20	145
			33000								35.5x24	165
63	38	70	16000	55	0.035	400	2400	1.4	-50	+100	35.5x20	145
			18000								35.5x24	165
80	48	88	11000	45	0.035	500	2500	1.6	-40	+100	35.5x20	145
			13000								35.5x24	165
100	60	110	4800	40	0.035	500	2500	1.8	-30	+80	35.5x20	145
			6000								35.5x20	145
			7500								35.5x24	165
125	75	138	2200	35	0.050	500	2500	2.4	-25	+50	35.5x20	145
			2800				2500	2.4	-20	+40	35.5x24	165
			4500				3000	2.5	-25	+50	35.5x20	145
			4500				3000	2.0	-25	+45	35.5x24	165
			4700				3000	2.4	-25	+50	35.5x20	145
			4700				3000	2.0	-25	+45	35.5x24	165



❖ 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 $U=2.2^{0.1-0}V$,Exchange offset voltage $U_-=1.0^{0.05}V$ (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.