

Wet Tantalum, Axial Leaded, Tantalum Case, Extended Capacitance, Enhanced Performance



KEY BENEFITS

- Higher capacitance
- Greater reverse voltage capability
- Extended thermal shock capability
- Greater vibration capability
- Temperature range of - 55 °C to + 85 °C, to + 125 °C with voltage derating
- Low ESR down to 0.70 Ω at 120 Hz and + 25 °C

APPLICATIONS

- Power supplies for space and avionics applications
- Timing
- Filtering
- Energy hold-up
- Pulse power

RESOURCES

- Datasheet: T16 - <http://www.vishay.com/doc?40139>
- For technical questions, contact tantalum@vishay.com

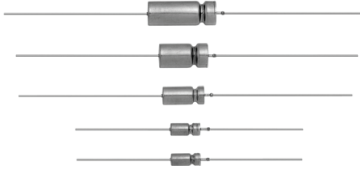


WET TANTALUM CAPACITORS

T16



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FEATURES

- Enhanced performance, high reliability design
- Terminations: Standard tin/lead (SnPb), 100 % tin available
- Model T16 tantalum-case electrolytic capacitors provide all the advantages of Vishay's SuperTan® series devices, while offering improved reverse voltage and vibration capability
- Increased thermal shock capability of 300 cycles
- Mounting: Through-hole axial
- Designed for the avionics and aerospace applications
- Compliant to RoHS Directive 2002/95/EC



RoHS*
COMPLIANT

Note

- * Pb containing terminations are not RoHS compliant, exemptions may apply

Capacitance Tolerance: ± 10 %, ± 20 % standard
DC Leakage Current (DCL Max.): At + 25 °C and above: Leakage current shall not exceed the values listed in the Standard Ratings table.

PERFORMANCE CHARACTERISTICS

Refer to: Typical Performance Characteristics

Operating Temperature: - 55 °C to + 85 °C
 (To + 125 °C with voltage derating)

ORDERING INFORMATION

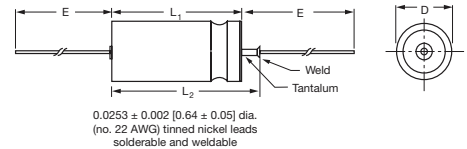
T16	D	220	M	100	E	Z	S	S
MODEL	CASE CODE	CAPACITANCE	CAPACITANCE TOLERANCE	DC VOLTAGE RATING AT + 85 °C	TERMINATION AND PACKAGING	RELIABILITY LEVEL	INSULATING SLEEVE	ESR
	See Ratings and Case Codes Table	This is expressed in picofarads. The first two digits are the significant figures. The third is the number of zeros to follow	K = ± 10 % M = ± 20 %	This is expressed in volts. To complete the three-digit block, zeros precede the voltage rating	E = Tin/lead, bulk, standard C = 100 % tin, bulk	Z = Non-ER	S = Sleeved U = Unsleeved	S = Std.

Note

- Packaging: The use of formed plastic trays for packing bulk components is standard.

DIMENSIONS in inches [millimeters]

CASE CODE		D	L ₁	L ₂ (max.)	E	WEIGHT (g) (max.)
TYPE T16	ST					
A	T1	0.188 ± 0.016 [4.78 ± 0.41]	0.453 + 0.031/- 0.016 [11.51 + 0.79/- 0.41]	0.734 [18.64]	1.500 ± 0.250 [38.10 ± 6.35]	2.6
B	T2	0.281 ± 0.016 [7.14 ± 0.41]	0.641 + 0.031/- 0.016 [16.28 + 0.79/- 0.41]	0.922 [23.42]	2.250 ± 0.250 [57.15 ± 6.35]	6.2
C	T3	0.375 ± 0.016 [9.53 ± 0.41]	0.766 + 0.031/- 0.016 [19.46 + 0.79/- 0.41]	1.047 [26.59]	2.250 ± 0.250 [57.15 ± 6.35]	11.6
D	T4	0.375 ± 0.016 [9.53 ± 0.41]	1.062 + 0.031/- 0.016 [26.97 + 0.79/- 0.41]	1.343 [34.11]	2.250 ± 0.250 [57.15 ± 6.35]	17.7



Note

- For insulated parts, add 0.015" [0.38 mm] to the diameter. The insulation shall lap over the ends of the capacitor body.

STANDARD RATINGS

CAPACITANCE AT + 25 °C 120 Hz (µF)	CASE CODE	PART NUMBER	MAX. ESR AT + 25 °C 120 Hz (Ω)	MAX. IMP. AT - 55 °C 120 Hz (Ω)	MAX. DCL (µA) AT			MAX. CAPACITANCE CHANGE (%)			AC RIPPLE + 85 °C 40 kHz (mA _{RMS})
					+ 25 °C	+ 85 °C AND + 125 °C	- 55 °C	+ 85 °C	+ 125 °C		
50 V _{DC} AT 85 °C, 30 V _{DC} AT 125 °C											
680	D	T16D687(1)050(2)(3)(4)	0.70	5	5	40	- 58	10	20	2900	
60 V _{DC} AT 85 °C, 40 V _{DC} AT 125 °C											
560	D	T16D567(1)060(2)(3)(4)	0.80	6	5	40	- 58	8	15	2700	
75 V _{DC} AT 85 °C, 50 V _{DC} AT 125 °C											
470	D	T16D477(1)075(2)(3)(4)	0.95	7	5	50	- 50	6	10	2550	
100 V _{DC} AT 85 °C, 65 V _{DC} AT 125 °C											
220	D	T16D227(1)100(2)(3)(4)	1.20	16	5	50	- 40	6	12	2200	
125 V _{DC} AT 85 °C, 85 V _{DC} AT 125 °C											
150	D	T16D157(1)125(2)(3)(4)	1.60	16	5	50	- 35	6	12	1900	

Note

- Part number definitions:
 - Capacitance tolerance: K, M
 - Termination/packaging: C = 100 % tin, bulk, E = Std., tin/lead, bulk
 - Reliability level: Z = Non-ER
 - Insulating sleeve: S = Sleeved; U = Unsleeved
 - ESR: S = Std.

MECHANICAL CHARACTERISTICS

ITEM	CONDITION	COMMENTS
Shock (Specified Pulse)	MIL-STD-202, method 213, condition I (100 g)	The capacitors shall meet the requirements of MIL-PRF-39006.
Vibration, High Frequency	MIL-STD-202, method 204, condition E (50 g peak)	The capacitors shall meet the requirements of MIL-PRF-39006.
Random Vibration	MIL-STD-202, method 214, condition II-G (overall RMS 27.78 g)	The capacitors shall meet the requirements of MIL-PRF-39006.
Thermal Shock	MIL-STD-202, method 107, condition A	Thermal shock shall be in accordance with MIL-PRF-39006 when tested for 300 cycles.
Solderability	MIL-STD-202, method 208, ANSI/J-STD-002, test A	Solderability shall be in accordance with MIL-PRF-39006.
Terminal Strength	MIL-STD-202, method 211	Terminal strength shall be in accordance with MIL-PRF-39006.
Resistance to Solder Heat	MIL-STD-202, method 210, condition C	The capacitors shall meet the requirements of MIL-PRF-39006.
Terminals	MIL-STD-1276	Terminals shall be as specified in MIL-STD-1276. The length and diameter of the terminals shall be as specified in Dimensions table. All terminals shall be permanently secured internally and externally, as applicable. All external joints shall be welded.
Marking	MIL-STD-1285	Marking of capacitors conforms to method I of MIL-STD-1285 and include capacitance (in µF), capacitance tolerance letter, rated voltage, date code, lot symbol and Vishay trademark.