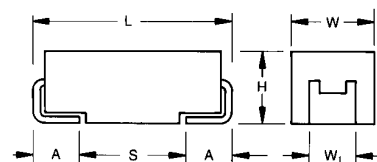


THJ Series with Extension to 200°C

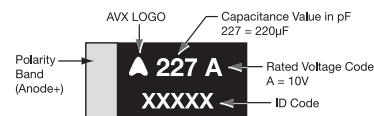


High Temperature Tantalum Chip Capacitor



MARKING

B, D, E CASE



FEATURES

- SMD 200°C tantalum capacitor
- 200°C @ 0.33VR 1000hrs continuous operation
- Leakage current after 200°C 1000hrs less than 1mA
- 3x reflow 260°C
- Gold plated termination for hybrid assembly
- Oil drilling, aerospace, automotive applications
- CV range: 10-220µF / 10-50V
- 3 case sizes available

APPLICATIONS

- Downhole drilling



LEAD-FREE
LEAD-FREE COMPATIBLE
COMPONENT



RoHS
COMPLIANT

CASE DIMENSIONS: millimeters (inches)

Code	EIA Code	EIA Metric	L±0.20 (0.008)	W±0.20 (0.008) -0.10 (0.004)	H±0.20 (0.008) -0.10 (0.004)	W ₁ ±0.20 (0.008)	A±0.30 (0.012) -0.20 (0.008)	S Min.
B	1210	3528-21	3.50 (0.138)	2.80 (0.110)	1.90 (0.075)	2.20 (0.087)	0.80 (0.031)	1.40 (0.055)
D	2917	7343-31	7.30 (0.287)	4.30 (0.169)	2.90 (0.114)	2.40 (0.094)	1.30 (0.051)	4.40 (0.173)
E	2917	7343-43	7.30 (0.287)	4.30 (0.169)	4.10 (0.162)	2.40 (0.094)	1.30 (0.051)	4.40 (0.173)

W₁ dimension applies to the termination width for A dimensional area only.

Engineering samples

HOW TO ORDER

THJ

Type

E

Case Size
See table above

107

Capacitance Code
pF code: 1st two digits represent significant figures
3rd digit represents multiplier (number of zeros to follow)

Tolerance
K = ±10%
M = ±20%

016

Rated DC Voltage
010 = 10Vdc
016 = 16Vdc
035 = 35Vdc
050 = 50Vdc

#

Packaging
A = Gold Plating 7" Reel
B = Gold Plating 13" Reel

JH

Standard Suffix

—

Additional characters may be added for special requirements
V = Dry pack Option

TECHNICAL SPECIFICATIONS

Technical Data:

All technical data relate to an ambient temperature of +25°C

Capacitance Range: 10 µF to 220 µF

Capacitance Tolerance: ±10%; ±20%

Leakage Current DCL @ V_R 25°C 0.01CV

Leakage Current DCL @ V_C 200°C, 1000 hrs 1mA

Rated Voltage (V _R)	≤ +85°C:	10	16	35	50
Category Voltage (V _C)	≤ +200°C:	3.3	5.3	12	17
Surge Voltage (V _S)	≤ +85°C:	13	20	44	63
Surge Voltage (V _S)	≤ +200°C:	4.3	6.5	14	21

Temperature Range: -55°C up 200°C with voltage derating

Reliability: 0.5% per 1000 hours at 85°C, V_R with 0.1Ω/V series impedance, 1000 hrs at 200°C, 0.33V_R

Termination Finished: Gold Plating

THJ Series with Extension to 200°C



High Temperature Tantalum Chip Capacitor

CAPACITANCE AND RATED VOLTAGE RANGE (LETTER DENOTES CASE SIZE)

Capacitance		Rated voltage (V _R) to 85°C (Voltage Code)				
μF	Code	10V (A)	16V (C)	25V (E)	35V (V)	50V (T)
6.8	685		B			E
10	106					
15	156					
22	226				D	
33	336				E	
47	476					
68	686					
100	107		E			
150	157					
220	227	E				

Released ratings

Engineering samples - please contact AVX

Note: Voltage ratings are minimum values. AVX reserves the right to supply higher voltage ratings in the same case size, to the same reliability standards.

RATINGS & PART NUMBER REFERENCE

AVX Part No.	Case Size	Capacitance (μF)	Rated Voltage (V)	Rated Temperature (°C)	Category Voltage (V)	Category Temperature (°C)	DCL Max. @ V _R 25°C (μA)	DCL Max. @ V _C 200°C 1000 hrs (mA)	DF Max. (%)	ESR Max. @ 100kHz (Ω)	100kHz RMS Current (mA)				MSL
											25°C	85°C	175°C	200°C	
10 Volt @ 85°C															
THJE227*010#JH	E	220	10	85	3.3	200	22	1.0	10	0.25	812	731	162	81	1 ¹⁾
16 Volt @ 85°C															
THJB106*016#JH	B	10	16	85	5.3	200	1.6	1.0	6	2.8	174	157	35	17	1
THJE107*016#JH	E	100	16	85	5.3	200	16	1.0	8	0.25	812	731	162	81	1 ¹⁾
35 Volt @ 85°C															
THJD226*035#JH	D	22	35	85	12	200	7.7	1.0	6	0.6	500	450	100	50	1 ¹⁾
THJE336*035#JH	E	33	35	85	12	200	11.6	1.0	6	0.5	574	517	115	57	1 ¹⁾
50 Volt @ 85°C															
THJE106*050#JH	E	10	50	85	17	200	5	1.0	6	0.7	486	437	97	49	1 ¹⁾

Moisture Sensitivity Level (MSL) is defined according to J-STD-020.

All PNs also available with Dry pack option - MSL 3 (see How to order).

¹⁾ -Dry pack option (see How to order) recommended for reduction of stress during soldering.

Base terminations material is copper for E case size and Ni42 for B case size.

All technical data relates to an ambient temperature of +25°C. Capacitance and DF are measured at 120Hz, 0.5V RMS with a maximum DC bias of 2.2 volts. DCL is measured at rated voltage after 5 minutes.

For typical weight and composition see page 274.

NOTE: AVX reserves the right to supply higher voltage ratings or tighter tolerance part in the same case size, to the same reliability standards.

THJ Series with Extension to 200°C

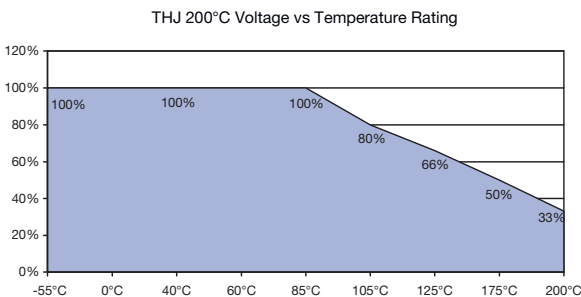


High Temperature Tantalum Chip Capacitor

QUALIFICATION TABLE

TEST	THJ 200°C series (Temperature range -55°C to +200°C)									
	Condition			Characteristics						
Endurance	Apply rated voltage (Ur) at 85°C and / or category voltage (Uc) at 200°C for 2000 hours through a circuit impedance of $\leq 0.1\Omega/V$. Stabilize at room temperature for 1-2 hours before measuring.			Visual examination	no visible damage					
				DCL	1.25 x initial limit					
				$\Delta C/C$	within $\pm 10\%$ of initial value					
				DF	initial limit					
				ESR	1.25 x initial limit					
Storage Life	Store at 200°C, no voltage applied, for 2000 hours. Stabilize at room temperature for 1-2 hours before measuring.			Visual examination	no visible damage					
				DCL	1.25 x initial limit					
				$\Delta C/C$	within $\pm 10\%$ of initial value					
				DF	initial limit					
				ESR	1.25 x initial limit					
Biased Humidity	Apply rated voltage (Ur) at 85°C, 85% relative humidity for 1000 hours. Stabilize at room temperature and humidity for 1-2 hours before measuring.			Visual examination	no visible damage					
				DCL	2 x initial limit					
				$\Delta C/C$	within $\pm 10\%$ of initial value					
				DF	1.2 x initial limit					
				ESR	1.25 x initial limit					
Temperature Stability	Step	Temperature°C	Duration(min)		+20°C	-55°C	+20°C	+125°C	+200°C	+20°C
	1	+20	15	DCL	IL*	n/a	IL*	10 x IL*	12.5 x IL*	IL*
	2	-55	15							
	3	+20	15	$\Delta C/C$	n/a	+0/-10%	$\pm 5\%$	+10/-0%	+18/-0%	$\pm 5\%$
	4	+125	15	DF	IL*	1.5 x IL*	IL*	1.5 x IL*	2 x IL*	IL*
	5	+200	15							
	6	+20	15	ESR	1.25 x IL*	2.5 x IL*	1.25 x IL*	1.25 x IL*	1.25 x IL*	1.25 x IL*
Surge Voltage	Apply 1.3x category voltage (Uc) at 200°C for 1000 cycles of duration 6 min (30 sec charge, 5 min 30 sec discharge) through a charge / discharge resistance of 1000 Ω			Visual examination	no visible damage					
				DCL	initial limit					
				$\Delta C/C$	within $\pm 5\%$ of initial value					
				DF	initial limit					
				ESR	1.25 x initial limit					
Mechanical Shock	MIL-STD-202, Method 213, Condition C			Visual examination	no visible damage					
				DCL	initial limit					
				$\Delta C/C$	within $\pm 5\%$ of initial value					
				DF	initial limit					
				ESR	initial limit					
Vibration	MIL-STD-202, Method 204, Condition D			Visual examination	no visible damage					
				DCL	initial limit					
				$\Delta C/C$	within $\pm 5\%$ of initial value					
				DF	initial limit					
				ESR	initial limit					

*Initial Limit

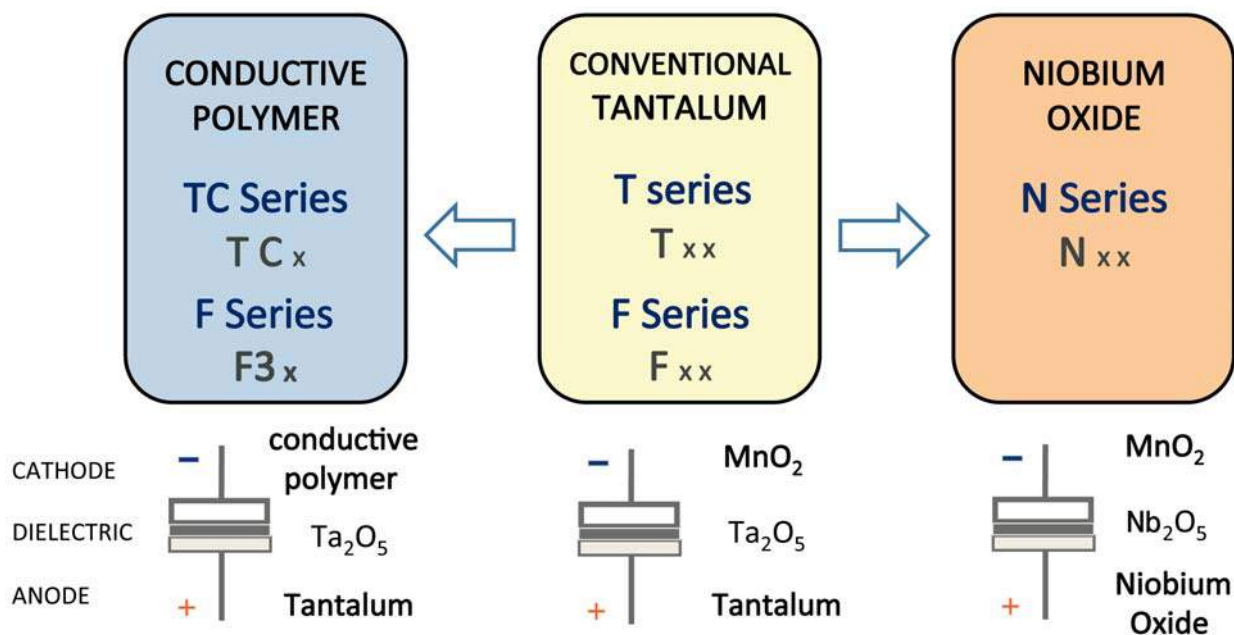


THJ Series with Extension to 200°C

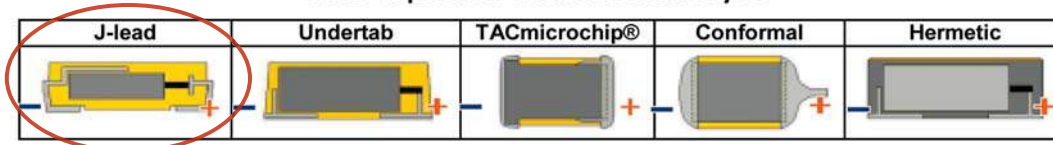


High Temperature Tantalum Chip Capacitor

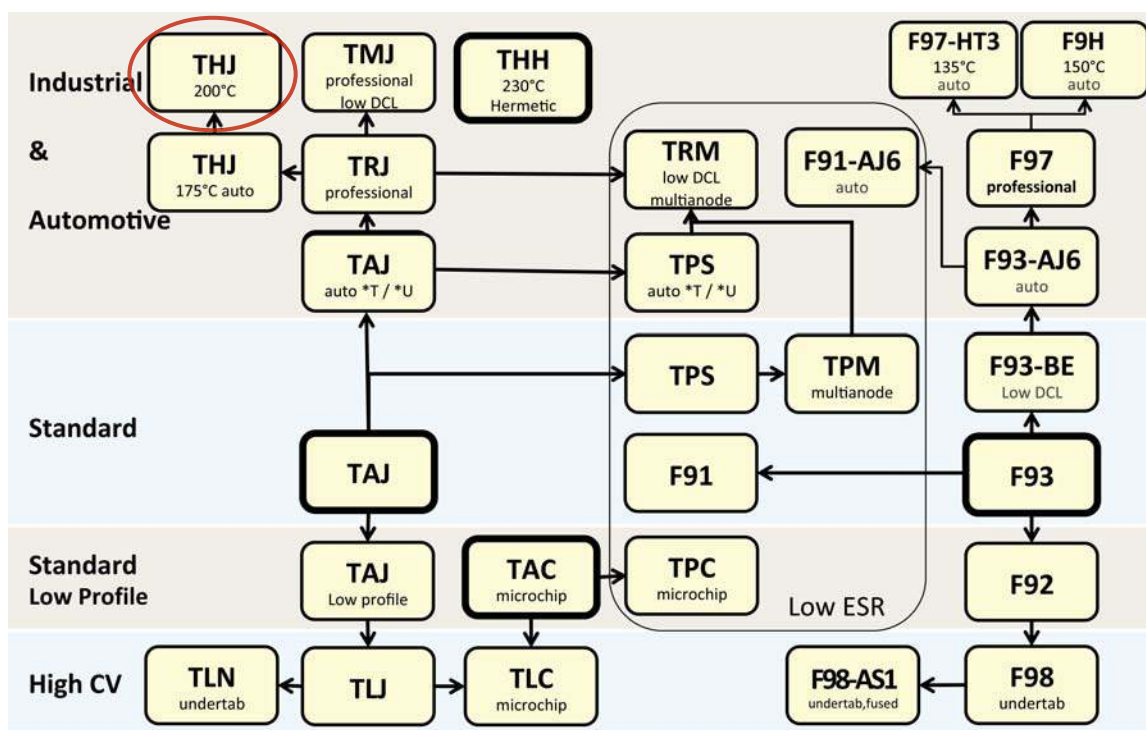
AVX SOLID ELECTROLYTIC CAPACITOR ROADMAP



Five Capacitor Construction Styles



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