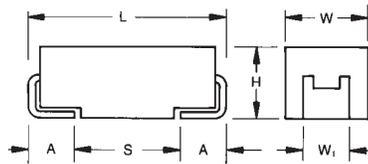


THJ Series with Extension to 200°C

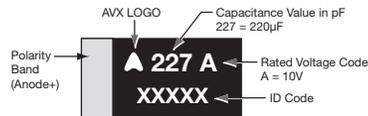


High Temperature Tantalum Chip Capacitor



MARKING

B, E CASE



FEATURES

- SMD 200°C tantalum capacitor
- 200°C @ 0.33V_R 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 / 10-16V
- 2 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)
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.

HOW TO ORDER

THJ	E	107	*	016	A	JH
Type	Case Size See table above	Capacitance Code pF code: 1st two digits represent significant figures 3rd digit represents multiplier (number of zeros to follow)	Tolerance K=±10% M=±20%	Rated DC Voltage 010=10Vdc 016=16Vdc	Packaging A = Gold Plating 7" Reel B = Gold Plating 13" Reel	Standard Suffix

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
Category Voltage (V _C)	≤ +200°C:	3.3	5.3
Surge Voltage (V _S)	≤ +85°C:	13	20
Surge Voltage (V _S)	≤ +200°C:	4.3	6.5
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		
	Meets requirements of AEC-Q200		



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)
10	106		B
15	156		
22	226		
33	336		
47	476		
68	686		
100	107		E
150	157	E	
220	227		
330	337		
470	477		
680	687		

Available Ratings

Engineering samples - please contact manufacturer

*Codes under development – subject to change

Note: Voltage ratings are minimum values. AVX reserves the right to supply higher 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 (µA) Max. @ V _R 25°C	DCL (mA) Max. @ V _C 200°C 1000 hrs	DF % Max.	ESR Max. (Ω) @ 100kHz	MSL	100kHz RMS Current (mA)			
												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	1	812	731	162	81
16 Volt @ 85°C															
THJB106*016#JH	B	10	16	85	5.3	200	1.6	1.0	6	2.8	1	174	157	35	17
THJE107*016#JH	E	100	16	85	5.3	200	16	1.0	8	0.25	1	812	731	162	81

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

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 202.

NOTE: AVX reserves the right to supply a higher voltage rating 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	Determine after application of rated voltage for 2000 +48/-0 hours at 85±2°C and then leaving 1-2 hours at room temperature. Also determine of 200°C temperature, category voltage for 2000 +48/-0 hours and then leaving 1-2 hours at room temperature. Power supply impedance to be ≤0.1Ω/V.			Visual examination	no visible damage					
				DCL	1.25 x initial limit					
				ΔC/C	within ±10% of initial value					
				DF	initial limit					
				ESR	1.25 x initial limit					
Storage Life	200°C, 0V, 2000h			Visual examination	no visible damage					
				DCL	1.25 x initial limit					
				ΔC/C	within ±10% of initial value					
				DF	initial limit					
				ESR	1.25 x initial limit					
Biased Humidity	Determine after leaving for 1000 hours at 85±2°C, 85% relative humidity and rated voltage and then recovery 1-2 hours at room temperature.			Visual examination	no visible damage					
				DCL	2 x initial limit					
				ΔC/C	within ±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±2	15	DCL	IL*	n/a	IL*	10 x IL*	12.5 x IL*	IL*
	2	-55+0/-3	15		ΔC/C	n/a	+0/-10%	±5%	+10/-0%	+18/-0%
	3	+20±2	15	DF		IL*	1.5 x IL*	IL*	1.5 x IL*	2 x IL*
	4	+85+3/-0	15		ESR	1.25 x IL*	2.5 x IL*	1.25 x IL*	1.25 x IL*	1.25 x IL*
	5	+200+3/-0	15							
	6	+20±2	15							
Surge Voltage	Test temperature: 200°C±3/0°C Test voltage: 1.3 x category voltage at 200°C Series protection resistance 1000±100Ω Discharge resistance: 1000Ω Number of cycles: 1000x Cycle duration: 6 min; 30 sec charge, 5 min 30 sec discharge			Visual examination	no visible damage					
				DCL	initial limit					
				ΔC/C	within ±5% of initial value					
				DF	initial limit					
				ESR	1.25 x initial limit					

*Initial Limit

THJ 200°C Voltage vs Temperature Rating

