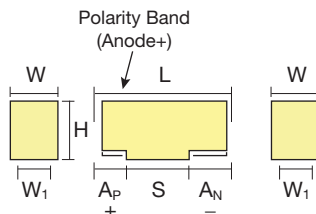


TCN PulseCap™ Series



Tantalum Solid Electrolytic Chip Capacitors Undertab Series With Conductive Polymer Electrode



FEATURES

- Large case size for maximum capacitance
- Conductive polymer electrode reduces ignition failure mode
- Low ESR
- Undertab terminations layout:
 - High Volumetric Efficiency
 - High PCB assembly density
 - High capacitance in smaller dimensions
- 3x reflow 260°C compatible
- 1 case size available

APPLICATIONS

- Pulse energy battery support
- Power backup in SSDs



LEAD-FREE
LEAD-FREE COMPATIBLE
COMPONENT



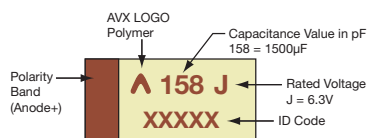
CASE DIMENSIONS: millimeters (inches)

Code	EIA Code	EIA Metric	L+0.30 (0.012) -0.30 (0.012)	W+0.30 (0.012) -0.30 (0.012)	H max.	W ₁ ±0.20 (0.008)	A _P +0.30 (0.012) -0.20 (0.008)	A _N +0.30 (0.012) -0.20 (0.008)
4	2924	7361-20	7.30 (0.287)	6.00 (0.240)	2.00 (0.079)	4.75 (0.187)	2.00 (0.079)	3.20 (0.126)

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

MARKING

4 CASE



HOW TO ORDER

TCN

Type

4

Case Size
See table above

158

Capacitance Code
pF code: 1st two digits
represent significant figures,
3rd digit represents multiplier

M

Tolerance
M = ±20%

006

Rated DC Voltage
006 = 6.3Vdc
016 = 16Vdc

R

Packaging
R = Pure Tin 7" Reel

0055

ESR in mΩ

TECHNICAL SPECIFICATIONS

Technical Data:

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

Capacitance Range: 220 µF to 1500 µF

Capacitance Tolerance: ±20%

Leakage Current DCL: 0.1CV

Rated Voltage (V_R) 6.3 16

Surge Voltage (V_S) 8 21

Temperature Range: -55°C to +85°C

Reliability: 1% per 1000 hours at 85°C, V_R with 0.1Ω/V series impedance with 60% confidence level

TCN PulseCap™ Series



Tantalum Solid Electrolytic Chip Capacitors Undertab Series With Conductive Polymer Electrode

CAPACITANCE AND RATED VOLTAGE RANGE (FIGURE DENOTES CASE SIZE)

Capacitance		Voltage Rating DC (V _R) to 85°C	
µF	Code	6.3V (J)	16V (C)
220	227		4(70)
330	337		4(70)
1000	108	4(55)	
1500	158	4(55)	
2200	228		
3300	338		

Available Codes (ESR ratings in mOhms in brackets)

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	Cap (µF)	Rated Voltage (V)	Rated Temp (°C)	Category Voltage (V)	Category Temp (°C)	DCL (µA) Max.	DF % Max.	ESR Max. (mΩ) @100kHz	MSL	100kHz Ripple Current (mA)			Product Category
											25°C	85°C	105°C	
6.3 Volt @ 85°C														
TCN4108M006#0055	4	1000	6.3	85	6.3	85	600	20	55	4	1860	1302	—	85°C
TCN4158M006#0055	4	1500	6.3	85	6.3	85	900	20	55	4	1860	1302	—	85°C
16 Volt @ 85°C														
TCN4227M016#0070	4	220	16	105	16	105	352	20	70	4	1650	1155	660	105°C
TCN4337M016#0070	4	330	16	85	16	85	528	20	70	4	1650	1155	—	85°C

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, 0.5 RMS with DC bias of 2.2 volts.

DCL is measured at rated voltage after 5 minutes.

ESR allowed to move up to 1.25 times catalogue limit post mounting

For typical weight and composition see page 212.

NOTE: AVX reserves the right to supply a higher voltage rating in the same case size, to the same reliability standards.

TCN PulseCap™ Series



Tantalum Solid Electrolytic Chip Capacitors Undertab Series With Conductive Polymer Electrode

PRODUCT CATEGORY 105°C

TEST	105°C series (Temperature range -55°C to +105°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 after application of 105°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 +20/-30% of initial value						
				DF	1.5 x initial limit						
				ESR	2 x initial limit						
Storage Life	105°C, 0V, 2000h			Visual examination	no visible damage						
				DCL (V _R ≤ 75V)	1.25 x initial limit						
				DCL (V _R > 75V)	2 x initial limit						
				ΔC/C	within ±20% of initial value						
				DF	1.5 x initial limit						
				ESR	2 x initial limit						
Humidity	Determine after storage without applied voltage at 65±2°C and 95±2% relative humidity for 500 hours and then recovery 1-2 hours at room temperature.			Visual examination	no visible damage						
				DCL	3 x initial limit						
				ΔC/C	within +30/-20% of initial value						
				DF	1.5 x initial limit						
				ESR	2 x initial limit						
Temperature Stability	Step	Temperature°C	Duration(min)		+20°C	-55°C	+20°C	+85°C	+105°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								
	3	+20±2	15								
	4	+85+3/-0	15	ΔC/C	n/a	+0/-20%	±5%	+20/-0%	+30/-0%	±5%	
	5	+105+3/-0	15	DF	IL*	1.5 x IL*	IL*	1.5 x IL*	2 x IL*	IL*	
	6	+20±2	15								
Surge Voltage	Test temperature: 105°C+3/0°C Test voltage: Category voltage at 105°C Surge voltage: 1.3 x category voltage at 105°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 +20/-30% of initial value						
				DF	1.25 x initial limit						

*Initial Limit

PRODUCT CATEGORY 85°C

TEST	85°C series (Temperature range -55°C to +85°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. Power supply impedance to be ≤0.1Ω/V.			Visual examination	no visible damage					
				DCL	1.25 x initial limit					
				ΔC/C	within +20/-30% of initial value					
				DF	1.5 x initial limit					
				ESR	2 x initial limit					
Storage Life	85°C, 0V, 2000 _h			Visual examination	no visible damage					
				DCL	1.25 x initial limit					
				ΔC/C	within ±20% of initial value					
				DF	1.5 x initial limit					
				ESR	2 x initial limit					
Humidity	Determine after storage without applied voltage at 65±2°C and 95±2% relative humidity for 500 hours and then recovery 1-2 hours at room temperature.			Visual examination	no visible damage					
				DCL	5 x initial limit					
				ΔC/C	within +40/-20% of initial value					
				DF	1.5 x initial limit					
				ESR	2 x initial limit					
Temperature Stability	Step	Temperature°C	Duration(min)		+20°C	-55°C	+20°C	+85°C	+20°C	
	1	+20±2	15							
	2	-55+0/-3	15	DCL	IL*	n/a	IL*	10 x IL*	IL*	
	3	+20±2	15	ΔC/C	n/a	+0/-20%	±5%	+20/-0%	±5%	
	4	+85+3/-0	15							
	5	+20±2	15	DF	IL*	1.5 x IL*	IL*	1.5 x IL*	IL*	
Surge Voltage	Test temperature: 85+3/0°C Test voltage: Rated voltage Surge voltage: 1.3 x rated voltage 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 +20/-30% of initial value					
				DF	1.25 x initial limit					

*Initial Limit



Mouser Electronics

Authorized Distributor

Click to View Pricing, Inventory, Delivery & Lifecycle Information:

AVX:

[TCN4158M006R0055](#)