

TCM Series



Tantalum Solid Electrolytic Chip Capacitors Conductive Polymer Multianode



FEATURES

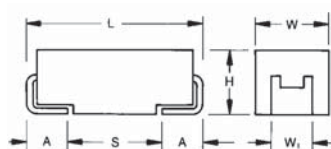
- Conductive polymer multianode
- Extremely Low ESR
- Reduced ignition failure mode
- 3x reflow 260°C compatible
- Volumetric efficiency
- High frequency capacitance retention

APPLICATIONS

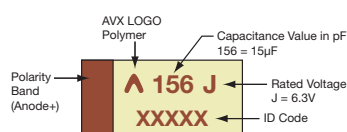
- Telecommunication routers
- Basestations with high power DC/DCs



Elektra Award 2010



E CASE:



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.
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

TCM	E	108	M	004	R	0010
Type	Case Size	Capacitance Code	Tolerance	Rated DC Voltage	Packaging	ESR in mΩ
	See table above	pF code: 1st two digits represent significant figures, 3rd digit represents multiplier (number of zeros to follow)	M=±20%	004=4Vdc 006=6.3Vdc 010=10Vdc 035=35Vdc	R = Pure Tin 7" Reel S = Pure Tin 13" Reel	

TECHNICAL SPECIFICATIONS

Technical Data:		All technical data relate to an ambient temperature of +25°C					
Capacitance Range:		22 µF to 1000 µF					
Capacitance Tolerance:		±20%					
Leakage Current DCL:		0.1CV					
Rated Voltage (V _R)	≤ +85°C:	4	6.3	10	35		
Category Voltage (V _C)	≤ +105°C:	3.2	5	8	28		
Surge Voltage (V _S)	≤ +85°C:	5.2	8	13	46		
Surge Voltage (V _S)	≤ +105°C:	4	6	10	35		
Temperature Range:		-55°C to +105°C					
Reliability:		1% per 1000 hours at 85°C, V _R with 0.1Ω/V series impedance, 60% confidence level					



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CAPACITANCE AND RATED VOLTAGE, VR (VOLTAGE CODE) RANGE (LETTER DENOTES CASE SIZE)

Capacitance		Rated Voltage DC (V _R) to 85°C			
μF	Code	4V (G)	6.3V (J)	10V (A)	35V (V)
22	226				E(25)
33	336				
47	476				
68	686				
100	107				
150	157				
220	227				
330	337			E(10,15)	
470	477				
680	687		E(12)		
1000	108	E(10,12)			
1500	158				

Available Ratings, (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 RMS Current (mA)			Product Category
											25°C	85°C	105°C	
4 Volt @ 85°C														
TCME108M004#0010	E	1000	4	85	3.2	105	400	8	10	3	5200	3600	2300	105°C
TCME108M004#0012	E	1000	4	85	3.2	105	400	8	12	3	4700	3300	2100	105°C
6.3 Volt @ 85°C														
TCME687M006#0012	E	680	6.3	85	5	105	408	8	12	3	4700	3300	2100	105°C
10 Volt @ 85°C														
TCME337M010#0010	E	330	10	85	8	105	330	8	10	3	5200	3600	2300	105°C
TCME337M010#0015	E	330	10	85	8	105	330	8	15	3	4200	3000	1900	105°C
35 Volt @ 85°C														
TCME226M035#0025	E	22	35	85	28	105	77	8	25	3	3300	2300	1500	105°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, 0.5RMS 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 catalog limit post mounting.

For typical weight and composition see page 150.

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.

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 ≤3Ω.			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*	12.5xIL*	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*	2xIL*	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