

TCM Series



Conductive Polymer Solid Electrolytic Chip Multianode Capacitors



FEATURES

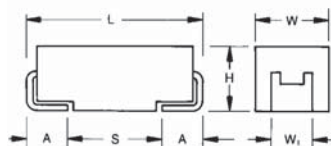
- Conductive polymer electrode, multianode design
- Benign failure mode under recommended use conditions
- Extremely Low ESR
- 3x reflow 260°C compatible
- Volumetric efficiency
- High frequency capacitance retention



Elektra Award 2010



LEAD-FREE
LEAD-FREE COMPATIBLE
COMPONENT

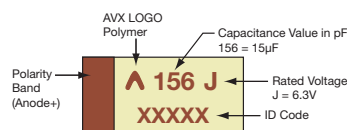


APPLICATIONS

- Telecommunication routers
- Basestations with high power DC/DCs

MARKING

E, V 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)
V	2924	7361-38	7.30 (0.287)	6.10 (0.240)	3.55 (0.140)	3.10 (0.120)	1.30 (0.051)	4.40 (0.173)

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

HOW TO ORDER

TCM

Type

E

Case Size
See table above

108

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

M

Tolerance
M=±20%

004

Rated DC Voltage
004=4Vdc
006=6.3Vdc
010=10Vdc
035=35Vdc
100=100Vdc

R

Packaging
R = Pure Tin 7" Reel
S = Pure Tin 13" Reel

0010

ESR in mΩ

TECHNICAL SPECIFICATIONS

Technical Data:

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

Capacitance Range:	10 μF to 1000 μF						
Capacitance Tolerance:	±20%						
Leakage Current DCL:	0.1CV						
Rated Voltage (V _R)	≤ +85°C:	4	6.3	10	35	100	
Category Voltage (V _C)	≤ +105°C:	3.2	5	8	28	80	
Surge Voltage (V _S)	≤ +85°C:	5.2	8	13	46	130	
Surge Voltage (V _S)	≤ +105°C:	4	6	10	35	100	
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						

CAPACITANCE AND RATED VOLTAGE 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)	100V (A)
10	106					V(50)
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(8,10,12)				

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#0008	E	1000	4	85	3.2	105	400	8	8	3	7200	5000	3200	105°C
TCME108M004#0010	E	1000	4	85	3.2	105	400	8	10	3	6400	4500	2900	105°C
TCME108M004#0012	E	1000	4	85	3.2	105	400	8	12	3	5800	4100	2600	105°C
6.3 Volt @ 85°C														
TCME687M006#0012	E	680	6.3	85	5	105	408	8	12	3	5800	4100	2600	105°C
10 Volt @ 85°C														
TCME337M010#0010	E	330	10	85	8	105	330	8	10	3	6400	4500	2900	105°C
TCME337M010#0015	E	330	10	85	8	105	330	8	15	3	5200	3600	2300	105°C
35 Volt @ 85°C														
TCME226M035#0025	E	22	35	85	28	105	77	8	25	3	4000	2800	1800	105°C
100 Volt @ 85°C														
TCMV106M100#0050	V	10	100	85	80	105	100	8	50	3	2900	2000	1300	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 218.

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 ≤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					
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							
	2	-55+0/-3	15	DCL	IL*	n/a	IL*	10 x IL*	12.5 x IL*	IL*
	3	+20±2	15	ΔC/C	n/a	+0/-20%	±10%	+20/-0%	+30/-0%	±10%
	4	+85+3/-0	15	DF	IL*	1.5 x IL*	IL*	1.5 x IL*	2 x IL*	IL*
	5	+105+3/-0	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