

**ORDERING INFORMATION (OBSOLETE\*)**

**CSR** **XX** **B** **565** **K** **M**

**TYPE**  
Capacitors, Fixed, Solid Electrolyte, Tantalum  
Established Reliability

**STYLE**  
Tubular Case — Always Sleeved

09 — Miniature — T222  
13 — Standard — T212  
21 — Standard, low ESR — T262  
23 — Extended Range — T242  
33 — Extended Range, Low Leakage — T252  
91 — Non-Polar — T213

**VOLTAGE**

**FAILURE RATE LEVEL  
IN % PER 1000 HOURS  
GRADED**

A — Not Applicable  
B — 0.1%/k hrs.  
C — 0.01%/k hrs.  
D — 0.001%/k hrs.

**EXPONENTIAL**

M — 1%/k hrs.  
P — 0.1%/k hrs.  
R — 0.01%/k hrs.  
S — 0.001%/k hrs.

**CAPACITANCE  
TOLERANCE**

J — ± 5%  
K — ± 10%  
M — ± 20%

**CAPACITANCE**

Expressed in picofarads (1 microfarad = 1,000,000 picofarads). First two digits represent significant figures. Last digit specifies the number of zeros to follow.

**Examples**

565 — 5,600,000 = 5.60 µF    563 — 56,000 = .056 µF  
564 — 560,000 = .56 µF

Symbol	VDC Working		VDC Surge	
	85°C	125°C	85°C	125°C
B	6	4	8	5
C	10	7	13	9
D	15	10	20	12
E	20	13	26	16
F	35	23	46	28
G	50	33	65	40
H	75	50	98	64
J	100	67	130	86

\* This Military Part Numbering System is obsolete in accordance with the current specifications. The correct current designation for a CSR part number is the MIL Specification Number, followed by the Specification (slash) Sheet Number and Dash Number (i.e. — MIL-PRF-39003/01-2270). However, the part number breakdown shown above is still widely used and is shown for reference.

**MILITARY CAPACITOR APPROVED FAILURE RATE LEVELS AND MARKINGS PER MIL-PRF-39003 FOR CSR09 (T222 A & B CASE SIZES ONLY), CSR13 (T212), CSR21 (T262), CSR23 (T242) & CSR33 (T252) CAPACITORS**

**KEMET APPROVED FAILURE RATE LEVELS — MIL-PRF-39003/H (EXPONENTIAL)**

STYLE	DESCRIPTION	KEMET SERIES	APPROVED FAILURE RATE LEVEL
CSR09	Polar-Subminiature	T222	S (0.001%/k hrs.)
CSR13	Polar-Standard MIL Range	T212	S (0.001%/k hrs.)
CSR21	Polar-Standard Low ESR MIL Range	T262	S (0.001%/k hrs.)
CSR23	Polar-Extended Range	T242	S (0.001%/k hrs.)

STYLE	DESCRIPTION	KEMET SERIES	APPROVED FAILURE RATE LEVEL
CSR33	Polar-Extended Range Low Leakage	T252	S (0.001%/k hrs.)
CSR91	Non-Polar	T213	S (0.001%/k hrs.)

**MILITARY MARKING**

**A CASE**

39003 — Military specification number  
01 - K — Specification sheet number and trademark  
9002J — Military dash number and "J" for JAN  
+333 — Polarity, date code (1st digit indicates year and the next two digits indicate the week)  
XY — Lot symbol

**C & D CASES**

M39003 — Military specification number  
01 - 8222J — Specification sheet number, Military dash number, and "J" for JAN  
+8.2 µF — Positive terminal identifier and capacitance value  
10% 50V — Capacitance tolerance and voltage  
31433 — Source code  
0333 XY K — Date code, lot code, and trademark

**B CASE**

M39003 — Military specification number  
01 - — Specification sheet number  
8006J — Military dash number and "J" for JAN  
31433 — Source code  
+333 XY — Polarity, date code (1st digit indicates year and the next two digits indicate the week), lot symbol

**CSR91 (T213) CAPACITORS**

**A, B, C & D CASES**

M39003 — Military specification number  
04 - 0980J — Specification sheet number, Military dash number, and "J" for JAN  
1 µF — Capacitance value  
10% 20VNP — Capacitance tolerance and voltage rating  
0333 XY 31433 — Date code, lot code, and source code

(See page 38 for CSS Marking)

**KEMET APPROVED FAILURE RATE LEVELS — MIL-PRF-39003/H (GRADED)**

STYLE	DESCRIPTION	KEMET SERIES	APPROVED FAILURE RATE LEVEL*
CSR09	Polar-Subminiature	T222	D (0.001%/k hrs.)
CSR13*	Polar-Standard MIL Case	T212	D (0.001%/k hrs.)
CSS13**	Polar-Standard MIL Case	T216	C (0.01%/k hrs.)
CSR21	Polar-Standard Low ESR MIL Case	T262	D (0.001%/k hrs.)
CSR23*	Polar-Extended Range	T242	D (0.001%/k hrs.)

\*Not approved to 'D' Failure Rate Level on all voltages and capacitance values.

\*\*MIL-PRF-39003/10 for space applications.

STYLE	DESCRIPTION	KEMET SERIES	APPROVED FAILURE RATE LEVEL*
CSR33*	Polar-Extended Range Low Leakage	T252	D (0.001%/k hrs.)
CSS33**	Polar-Extended Range Low Leakage	T256	C (0.01%/k hrs.)
CSR91*	Non-Polar	T213	D (0.001%/k hrs.)

\*Not approved to 'D' Failure Rate Level on all voltages and capacitance values.

\*\*MIL-PRF-39003/10 for space applications.

Tantalum Hermetically Sealed

**PERFORMANCE CHARACTERISTICS**

- **CAPACITANCE/VOLTAGE RANGE:** .0023-1200µF, 6-125 Volts.
- **CAPACITANCE TOLERANCE:** Available in standard EIA values with ±20%, ±10% and ±5% tolerances.
- **DISSIPATION FACTOR:** Maximum DF limits are shown in corresponding series part number listings on pages 7-41. See Application Notes Section, page 76 for additional description.
- **DC LEAKAGE CURRENT:** Each corresponding part number table lists maximum leakage current for each capacitor on pages 7-41. See Application Notes Section, page 76 for additional description.
- **RATED VOLTAGE; WORKING VOLTAGE; SURGE VOLTAGE; REVERSE VOLTAGE:** See Application Notes Section, Pages 76 & 77 for description.
- **IMPEDANCE and ESR:** See Application Notes Section, pages 77 & 78 for description. Reference ESR values are shown for commercial hermetically sealed capacitors on page 19.

- **AC RIPPLE VOLTAGE:** Permissible AC ripple voltage is related to the ESR of the capacitor and the power dissipation capabilities of a particular case size. Thermal capacities for the various case sizes have been determined empirically and are listed below. For additional description see page 78.

Standard Case Size	Watts	T222
A	.09	.070
B	.100	.090
C	.125	—
D	.180	—

Maximum Power Dissipation: 25°C Ambient

- **ENVIRONMENTAL CONSIDERATIONS:**
  - Shock Test: MIL-STD-202, Method 213
  - Thermal Shock, MIL-STD-202, Method 107, Condition B.
  - Moisture Resistance: MIL-STD-202, Method 106.
  - Solderability: MIL-STD-202, Method 208

For additional Environmental Test Information see pages 80, 81 and 82.

- **LEAD MATERIAL:** Standard leads are solder-coated nickel per MIL-STD-1276.
- **INSULATING SLEEVES:** The standard insulating material used in transparent high temperature plastic, having 2000 volt dielectric strength, excellent dimensional stability and chemical and cold flow resistance.
- **LEAD TAPE and REEL:** Reeling per specification RS-296. See pages 71 and 73 for additional information.

KEMET standard hermetic sealed T110 Series are desirable for use in high humidity environments. They are ruggedly built, designed for miniaturized circuitry, and are especially suited for coupling, bypass, filtering and R-C timing circuits. They exhibit excellent stability, extremely low DC leakage current, dissipation factor, and ESR/impedance over a wide temperature and frequency range.

Available in standard EIA capacitance values from .0047-330  $\mu\text{F}$  in  $\pm 20\%$ ,  $\pm 10\%$ , and  $\pm 5\%$  tolerances and working voltages from 6-125 VDC.

Higher CV values in comparable case sizes are available in KEMET T140 Series. Refer to page 27.

Included in the following Series table is a complete listing of CSR13 qualified MIL-PRF-39003 capacitors. KEMET is approved to manufacture the S (0.001%/k hrs.) Exponential & D (0.001%/k hrs.) Graded failure rate levels.

KEMET is now offering low ESR limits in the T110 Series. See ESR chart on page 19. You may order the lower ESR by using Customer Specification 2864 as the last four digits of the part number.

**Effective September 30, 2005, the KEMET T110 Series is RoHS Compliant.**

### CAPACITOR OUTLINE DRAWINGS



### DIMENSIONS — INCHES & (MILLIMETERS)

CASE SIZE	UNINSULATED		INSULATED		B $\pm 0.002$ $\pm (.05)$	C MAX.
	D $\pm 0.005$ $\pm (.13)$	L $\pm 0.031$ $\pm (.79)$	D $\pm 0.010$ $\pm (.25)$	L $\pm 0.031$ $\pm (.79)$		
A	0.125 (3.18)	0.250 (6.35)	0.135 (3.43)	0.286 (7.26)	0.020 (.51)	0.422 (10.72)
B	0.175 (4.45)	0.438 (11.13)	0.185 (4.70)	0.474 (12.04)	0.020 (.51)	0.610 (15.49)
C	0.279 (7.09)	0.650 (16.51)	0.289 (7.34)	0.686 (17.42)	0.025 (.64)	0.822 (20.88)
D	0.341 (8.66)	0.750 (19.05)	0.351 (8.92)	0.786 (19.96)	0.025 (.64)	0.922 (23.42)

### ORDERING INFORMATION\*



### MARKING INFORMATION

Marking: Unless otherwise specified by special order, standard marking of T110 Series capacitor consists of the following:

#### A, B, C & D CASES

+K 10%	— Polarity, Manufacturer's Identification and Capacitance Tol.
R56 $\mu\text{F}$	— Nominal Capacitance — ( $\mu\text{F}$ ) ("R" indicates decimal)
100V	— Voltage
0312	— Date Code (e.g.: 0312)

\* For Military Marking, see page 4.

RATINGS & PART NUMBER REFERENCE

T110/T212 Series Tantalum  
Hermetically Sealed

CAPACITANCE μF	CASE SIZE	CAPACITANCE TOLERANCE ±%	KEMET T110			MIL-PRF-39003 (CSR13) CAPACITORS														
			KEMET PART NUMBER	D.C. LEAKAGE μA@25°C MAX.	MAX. DISSIPATION FACTOR %@25°C, 120Hz	DASH NUMBER REFERENCE FAILURE RATE LEVEL (%/1000 HRS.)								KEMET EQUIVALENT MILITARY PART NUMBER						
						MIL-PRF-39003/1H EXPONENTIAL				MIL-PRF-39003/1H GRADED										
						M (1.0)	P (0.1)	R (0.01)	S (0.001)	B (0.1)	C (0.01)	D (0.001)								
<b>6 VOLT RATING AT 85°C — 4 VOLT RATING AT 125°C</b>																				
2.2	A	5,10,20	T110A225(1)006AS	0.3	4															
2.7	A	5,10,20	T110A275(1)006AS	0.3	4															
3.3	A	5,10,20	T110A335(1)006AS	0.3	4															
3.9	A	5,10,20	T110A395(1)006AS	0.3	4															
4.7	A	5,10,20	T110A475(1)006AS	0.3	4															
5.6	A	5	T110A565J006AS	0.3	4	5001	5201	5401	5601	6001	7001	8001	T212A565J006(2)S							
5.6	A	10	T110A565K006AS	0.3	4	2241	2481	2721	2961	6002	7002	8002	T212A565K006(2)S							
5.6	A	20	T110A565M006AS	0.3	4															
<b>6.8</b>	<b>A</b>	<b>5</b>	<b>T110A685J006AS</b>	<b>0.3</b>	<b>6</b>	<b>5002</b>	<b>5202</b>	<b>5402</b>	<b>5602</b>	<b>6003</b>	<b>7003</b>	<b>8003</b>	<b>T212A685J006(2)S</b>							
<b>6.8</b>	<b>A</b>	<b>10</b>	<b>T110A685K006AS</b>	<b>0.3</b>	<b>6</b>	<b>2242</b>	<b>2482</b>	<b>2722</b>	<b>2962</b>	<b>6004</b>	<b>7004</b>	<b>8004</b>	<b>T212A685K006(2)S</b>							
<b>6.8</b>	<b>A</b>	<b>20</b>	<b>T110A685M006AS</b>	<b>0.3</b>	<b>6</b>	<b>2243</b>	<b>2483</b>	<b>2723</b>	<b>2963</b>	<b>6005</b>	<b>7005</b>	<b>8005</b>	<b>T212A685M006(2)S</b>							
8.2	B	5,10,20	T110B825(1)006AS	0.3	6															
10.0	B	5,10,20	T110B106(1)006AS	0.3	6															
12.0	B	5,10,20	T110B126(1)006AS	0.5	6															
15.0	B	5,10,20	T110B156(1)006AS	0.9	6															
18.0	B	5,10,20	T110B186(1)006AS	0.9	6															
22.0	B	5,10,20	T110B226(1)006AS	0.9	6															
27.0	B	5,10,20	T110B276(1)006AS	0.9	6															
33.0	B	5,10,20	T110B336(1)006AS	0.9	6															
39.0	B	5,10,20	T110B396(1)006AS	0.9	6															
<b>47.0</b>	<b>B</b>	<b>5</b>	<b>T110B476J006AS</b>	<b>1.5</b>	<b>6</b>	<b>5003</b>	<b>5203</b>	<b>5403</b>	<b>5603</b>	<b>6006</b>	<b>7006</b>	<b>8006</b>	<b>T212B476J006(2)S</b>							
<b>47.0</b>	<b>B</b>	<b>10</b>	<b>T110B476K006AS</b>	<b>1.5</b>	<b>6</b>	<b>2244</b>	<b>2484</b>	<b>2724</b>	<b>2964</b>	<b>6007</b>	<b>7007</b>	<b>8007</b>	<b>T212B476K006(2)S</b>							
<b>47.0</b>	<b>B</b>	<b>20</b>	<b>T110B476M006AS</b>	<b>1.5</b>	<b>6</b>	<b>2245</b>	<b>2485</b>	<b>2725</b>	<b>2965</b>	<b>6008</b>	<b>7008</b>	<b>8008</b>	<b>T212B476M006(2)S</b>							
<b>56.0</b>	<b>B</b>	<b>5</b>	<b>T110B566J006AS</b>	<b>1.5</b>	<b>6</b>	<b>5004</b>	<b>5204</b>	<b>5404</b>	<b>5604</b>	<b>6009</b>	<b>7009</b>	<b>8009</b>	<b>T212B566J006(2)S</b>							
<b>56.0</b>	<b>B</b>	<b>10</b>	<b>T110B566K006AS</b>	<b>1.5</b>	<b>6</b>	<b>2246</b>	<b>2486</b>	<b>2726</b>	<b>2966</b>	<b>6010</b>	<b>7010</b>	<b>8010</b>	<b>T212B566K006(2)S</b>							
<b>56.0</b>	<b>B</b>	<b>20</b>	<b>T110B566M006AS</b>	<b>1.5</b>	<b>6</b>															
68.0	C	5,10,20	T110C686(1)006AS	3.0	6															
82.0	C	5,10,20	T110C826(1)006AS	3.0	6															
100.0	C	5,10,20	T110C107(1)006AS	3.0	6															
120.0	C	5,10,20	T110C127(1)006AS	3.0	6															
150.0	C	5	T110C157J006AS	4.5	6	5005	5205	5405	5605	6011	7011	8011	T212C157J006(2)S							
150.0	C	10	T110C157K006AS	4.5	6	2247	2487	2727	2967	6012	7012	8012	T212C157K006(2)S							
150.0	C	20	T110C157M006AS	4.5	6	2248	2488	2728	2968	6013	7013	8013	T212C157M006(2)S							
180.0	C	5	T110C187J006AS	5.5	6	5006	5206	5406	5606	6014	7014	8014	T212C187J006(2)S							
180.0	C	10	T110C187K006AS	5.5	6	2249	2489	2729	2969	6015	7015	8015	T212C187K006(2)S							
180.0	C	20	T110C187M006AS	5.5	6															
220.0	D	5,10,20	T110D227(1)006AS	6.0	8															
270.0	D	5	T110D277J006AS	6.0	8	5007	5207	5407	5607	6016	7016	8016	T212D277J006(2)S							
270.0	D	10	T110D277K006AS	6.0	8	2250	2490	2730	2970	6017	7017	8017	T212D277K006(2)S							
270.0	D	20	T110D277M006AS	6.0	8															
<b>330.0</b>	<b>D</b>	<b>5</b>	<b>T110D337J006AS</b>	<b>7.5</b>	<b>8</b>	<b>5008</b>	<b>5208</b>	<b>5408</b>	<b>5608</b>	<b>6018</b>	<b>7018</b>	<b>8018</b>	<b>T212D337J006(2)S</b>							
<b>330.0</b>	<b>D</b>	<b>10</b>	<b>T110D337K006AS</b>	<b>7.5</b>	<b>8</b>	<b>2251</b>	<b>2491</b>	<b>2731</b>	<b>2971</b>	<b>6019</b>	<b>7019</b>	<b>8019</b>	<b>T212D337K006(2)S</b>							
<b>330.0</b>	<b>D</b>	<b>20</b>	<b>T110D337M006AS</b>	<b>7.5</b>	<b>8</b>	<b>2252</b>	<b>2492</b>	<b>2732</b>	<b>2972</b>	<b>6020</b>	<b>7020</b>	<b>8020</b>	<b>T212D337M006(2)S</b>							
<b>10 VOLT RATING AT 85°C — 7 VOLT RATING AT 125°C</b>																				
1.0	A	5,10,20	T110A105(1)010AS	0.3	3															
1.2	A	5,10,20	T110A125(1)010AS	0.3	4															
1.5	A	5,10,20	T110A155(1)010AS	0.3	4															
1.8	A	5,10,20	T110A185(1)010AS	0.3	4															
2.2	A	5,10,20	T110A225(1)010AS	0.3	4															
2.7	A	5,10,20	T110A275(1)010AS	0.3	4															
3.3	A	5,10,20	T110A335(1)010AS	0.3	4															
3.9	A	5	T110A395J 010AS	0.3	4	5009	5209	5409	5609	6021	7021	8021	T212A395J010(2)S							
3.9	A	10	T110A395K 010AS	0.3	4	2253	2493	2733	2973	6022	7022	8022	T212A395K010(2)S							
3.9	A	20	T110A395M 010AS	0.3	4															
<b>4.7</b>	<b>A</b>	<b>5</b>	<b>T110A475J 010AS</b>	<b>0.4</b>	<b>4</b>	<b>5010</b>	<b>5210</b>	<b>5410</b>	<b>5610</b>	<b>6023</b>	<b>7023</b>	<b>8023</b>	<b>T212A475J010(2)S</b>							
<b>4.7</b>	<b>A</b>	<b>10</b>	<b>T110A475K 010AS</b>	<b>0.4</b>	<b>4</b>	<b>2254</b>	<b>2494</b>	<b>2734</b>	<b>2974</b>	<b>6024</b>	<b>7024</b>	<b>8024</b>	<b>T212A475K010(2)S</b>							
<b>4.7</b>	<b>A</b>	<b>20</b>	<b>T110A475M010AS</b>	<b>0.4</b>	<b>4</b>	<b>2255</b>	<b>2495</b>	<b>2735</b>	<b>2975</b>	<b>6025</b>	<b>7025</b>	<b>8025</b>	<b>T212A475M010(2)S</b>							

(1) To complete T110 Series Part Number, insert Capacitance Tolerance Symbol in the 9th Character as shown on Page 6.  
(2) To complete the T212 Series Part Number, insert Failure Rate Symbol in the 13th Character.  
**Bold Face** lines indicate popular part types and values.

















**TANTALUM HERMETICALLY SEALED / AXIAL — MIL-PRF-39003**  
**T110 SERIES — POLAR TYPE & T212 (CSR13)**

**RATINGS & PART NUMBER REFERENCE**

CAPACITANCE µF	CASE SIZE	CAPACITANCE TOLERANCE ±%	KEMET T110			MIL-PRF-39003 (CSR13) CAPACITORS								KEMET EQUIVALENT MILITARY PART NUMBER
			KEMET PART NUMBER	D.C. LEAKAGE µA@25°C MAX.	MAX. DISSIPATION FACTOR %@25°C, 120Hz	DASH NUMBER REFERENCE FAILURE RATE LEVEL (%/1000 HRS.)								
						MIL-PRF-39003/1H EXPONENTIAL				MIL-PRF-39003/1H GRADED				
						M (1.0)	P (0.1)	R (0.001)	S (0.001)	B (0.1)	C (0.01)	D (0.001)		
<b>50 VOLT RATING AT 85°C — 33 VOLT RATING AT 125°C (Cont'd)</b>														
18.0	C	10	T110C186K050AS	4.5	4	2379	2619	2859	3099	6232	7232	8232	T212C186K050(2)S	
18.0	C	20	T110C186M050AS	4.5	4									
<b>22.0</b>	<b>D</b>	<b>5</b>	<b>T110D226J050AS</b>	<b>5.5</b>	<b>4</b>	<b>5094</b>	<b>5294</b>	<b>5494</b>	<b>5694</b>	<b>6233</b>	<b>7233</b>	<b>8233</b>	<b>T212D226J050(2)S</b>	
<b>22.0</b>	<b>D</b>	<b>10</b>	<b>T110D226K050AS</b>	<b>5.5</b>	<b>4</b>	<b>2380</b>	<b>2620</b>	<b>2860</b>	<b>3100</b>	<b>6234</b>	<b>7234</b>	<b>8234</b>	<b>T212D226K050(2)S</b>	
<b>22.0</b>	<b>D</b>	<b>20</b>	<b>T110D226M050AS</b>	<b>5.5</b>	<b>4</b>	<b>2381</b>	<b>2621</b>	<b>2861</b>	<b>3101</b>	<b>6235</b>	<b>7235</b>	<b>8235</b>	<b>T212D226M050(2)S</b>	
<b>60 VOLT RATING AT 85°C — 40 VOLT RATING AT 125°C</b>														
0.0047	A	5,10,20	T110A472(1)060AS	0.3	3									
0.0056	A	5,10,20	T110A562(1)060AS	0.3	3									
0.0068	A	5,10,20	T110A682(1)060AS	0.3	3									
0.0082	A	5,10,20	T110A822(1)060AS	0.3	3									
0.01	A	5,10,20	T110A103(1)060AS	0.3	3									
0.012	A	5,10,20	T110A123(1)060AS	0.3	3									
0.015	A	5,10,20	T110A153(1)060AS	0.3	3									
0.018	A	5,10,20	T110A183(1)060AS	0.3	3									
0.022	A	5,10,20	T110A223(1)060AS	0.3	3									
0.027	A	5,10,20	T110A273(1)060AS	0.3	3									
0.033	A	5,10,20	T110A333(1)060AS	0.3	3									
0.039	A	5,10,20	T110A393(1)060AS	0.3	3									
0.047	A	5,10,20	T110A473(1)060AS	0.3	3									
0.056	A	5,10,20	T110A563(1)060AS	0.3	3									
0.068	A	5,10,20	T110A683(1)060AS	0.3	3									
0.082	A	5,10,20	T110A823(1)060AS	0.3	3									
0.1	A	5,10,20	T110A104(1)060AS	0.5	3									
0.12	A	5,10,20	T110A124(1)060AS	0.5	3									
0.15	A	5,10,20	T110A154(1)060AS	0.5	3									
0.18	A	5,10,20	T110A184(1)060AS	0.5	3									
0.22	A	5,10,20	T110A224(1)060AS	0.5	3									
0.27	A	5,10,20	T110A274(1)060AS	0.5	3									
0.33	A	5,10,20	T110A334(1)060AS	0.5	3									
0.39	A	5,10,20	T110A394(1)060AS	0.5	3									
0.47	A	5,10,20	T110A474(1)060AS	0.5	3									
0.56	A	5,10,20	T110A564(1)060AS	0.5	3									
0.68	A	5,10,20	T110A684(1)060AS	0.5	3									
0.82	B	5,10,20	T110B824(1)060AS	0.5	3									
1.0	B	5,10,20	T110B105(1)060AS	0.5	3									
1.2	B	5,10,20	T110B125(1)060AS	0.5	4									
1.5	B	5,10,20	T110B155(1)060AS	0.5	4									
1.8	B	5,10,20	T110B185(1)060AS	0.5	4									
2.2	B	5,10,20	T110B225(1)060AS	1.0	4									
2.7	B	5,10,20	T110B275(1)060AS	1.0	4									
3.3	B	5,10,20	T110B335(1)060AS	1.5	4									
3.9	B	5,10,20	T110B395(1)060AS	1.5	4									
4.7	C	5,10,20	T110C475(1)060AS	2.0	4									
5.6	C	5,10,20	T110C565(1)060AS	2.0	4									
6.8	C	5,10,20	T110C685(1)060AS	3.0	4									
8.2	C	5,10,20	T110C825(1)060AS	4.0	4									
10.0	C	5,10,20	T110C106(1)060AS	5.0	4									
12.0	C	5,10,20	T110C126(1)060AS	5.0	4									
15.0	D	5,10,20	T110D156(1)060AS	4.0	4									
18.0	D	5,10,20	T110D186(1)060AS	5.0	4									
22.0	D	5,10,20	T110D226(1)060AS	6.0	4									
<b>75 VOLT RATING AT 85°C — 50 VOLT RATING AT 125°C</b>														
0.0047	A	5,10,20	T110A472(1)075AS	0.3	2									
0.0056	A	5,10,20	T110A562(1)075AS	0.3	2									
0.0068	A	5,10,20	T110A682(1)075AS	0.3	2									
0.0082	A	5,10,20	T110A822(1)075AS	0.3	2									
0.01	A	5,10,20	T110A103(1)075AS	0.3	2									

(1) To complete T110 Series part number, insert Capacitance Tolerance Symbol in the 9th Character as shown on Page 6.

(2) To complete the T212 Series Part Number, insert Failure Rate Symbol in the 13th Character.

**Bold Face** lines indicate popular part types and values.













Primarily designed for use in tuned low frequency circuits, phasing low voltage AC motors, servo systems and other applications where reversal of polarity is a primary consideration. The T111 unit consists of two polar T110 Series hermetically sealed tantalum capacitors, electrically and mechanically connected back-to-back and supported by an outer

corrosion-resistant metal sleeve. They exhibit comparable electrical and performance characteristics of T110 Series. Available in capacitance values ranging from .0023 to 160  $\mu\text{F}$  in  $\pm 20\%$ ,  $\pm 10\%$ , and  $\pm 5\%$  tolerances in working voltages from 6 to 100 VDC at  $+85^\circ\text{C}$ . Also, the following table includes M39003/4 QPL Product.

### DIMENSIONS — INCHES & (MILLIMETERS)

CASE SIZE	B $\pm 0.002 (\pm .05)$	UNINSULATED		INSULATED		C MAX.
		D $\pm 0.010 (\pm .25)$	L $\pm 0.031 (\pm .79)$	D $\pm 0.010 (+.25)$ $-0.015 (-.38)$	L $\pm 0.031 (\pm .79)$	
A	0.020 (.51)	0.147 (3.73)	0.565 (14.35)	0.161 (4.09)	0.575 (14.61)	0.750 (19.05)
B	0.020 (.51)	0.194 (4.93)	0.916 (23.27)	0.207 (5.26)	0.955 (24.26)	1.130 (28.70)
C	0.025 (.64)	0.300 (7.62)	1.340 (34.04)	0.314 (7.98)	1.350 (34.29)	1.525 (38.74)
D	0.025 (.64)	0.362 (9.19)	1.540 (39.12)	0.376 (9.55)	1.550 (39.37)	1.725 (43.82)

### MARKING INFORMATION\* A, B, C & D CASES

K 10%	— Manufacturer's Classification and Tolerance
6R0 $\mu\text{F}$	— Normal Capacitance — ( $\mu\text{F}$ ) ("R" indicates decimal)
20V	— Voltage
0325AB	— Date Code and Batch Code

### CAPACITOR OUTLINE DRAWINGS



\* For Military Marking, see page 4.

### RATINGS & PART NUMBER REFERENCE

CAPACITANCE $\mu\text{F}$	CASE SIZE	CAPACITANCE TOLERANCE $\pm\%$	KEMET T111 SERIES			MIL-PRF-39003 (CSR91) CAPACITORS							KEMET EQUIVALENT MILITARY PART NUMBER
			KEMET PART NUMBER	D.C. LEAKAGE $\mu\text{A}@25^\circ\text{C}$ MAX.	MAX. DISSIP- ATION FACTOR $\%@25^\circ\text{C}$ , 120Hz	DASH NUMBER REFERENCE FAILURE RATE LEVEL (%/1000 HRS.)							
						MIL-PRF-39003/4C EXPONENTIAL				MIL-PRF-39003/4C GRADED			
						M (1.0)	P (0.1)	R (0.01)	S (0.001)	B (0.1)	C (0.01)	D (0.001)	
<b>6 VOLT RATING AT 85°C — 4 VOLT RATING AT 125°C</b>													
2.8	A	10	T111A285K006AS	0.3	4	0221	0441	0661	0881	3001	4001	5001	T213A285K006(1)S
3.4	A	10	T111A345K006AS	0.3	6	0222	0442	0662	0882	3002	4002	5002	T213A345K006(1)S
3.4	A	20	T111A345M006AS	0.3	6	0223	0443	0663	0883	3003	4003	5003	T213A345M006(1)S
23.0	B	10	T111B236K006AS	1.5	6	0224	0444	0664	0884	3004	4004	5004	T213B236K006(1)S
23.0	B	20	T111B236M006AS	1.5	6	0225	0445	0665	0885	3005	4005	5005	T213B236M006(1)S
28.0	B	10	T111B286K006AS	1.5	6	0226	0446	0666	0886	3006	4006	5006	T213B286K006(1)S
75.0	C	10	T111C756K006AS	4.5	6	0227	0447	0667	0887	3007	4007	5007	T213C756K006(1)S
75.0	C	20	T111C756M006AS	4.5	6	0228	0448	0668	0888	3008	4008	5008	T213C756M006(1)S
90.0	C	10	T111C906K006AS	4.5	6	0229	0449	0669	0889	3009	4009	5009	T213C906K006(1)S
90.0	C	20	T111C906M006AS	5.5	6	0230	0450	0670	0890				T213C906M006(1)S
130.0	D	10	T111D137K006AS	6.0	8	0231	0451	0671	0891	3010	4010	5010	T213D137K006(1)S
130.0	D	20	T111D137M006AS	6.0	8	0232	0452	0672	0892				T213D137M006(1)S
160.0	D	10	T111D167K006AS	7.5	8	0233	0453	0673	0893	3011	4011	5011	T213D167K006(1)S
160.0	D	20	T111D167M006AS	7.5	8	0234	0454	0674	0894	3012	4012	5012	T213D167M006(1)S
<b>10 VOLT RATING AT 85°C — 7 VOLT RATING AT 125°C</b>													
1.9	A	10	T111A195K010AS	0.3	4	0235	0455	0675	0895	3013	4013	5013	T213A195K010(1)S
2.3	A	10	T111A235K010AS	0.4	4	0236	0456	0676	0896	3014	4014	5014	T213A235K010(1)S
2.3	A	20	T111A235M010AS	0.4	4	0237	0457	0677	0897	3015	4015	5015	T213A235M010(1)S
13.0	B	10	T111B136K010AS	2.0	6	0238	0458	0678	0898	3016	4016	5016	T213B136K010(1)S
16.0	B	10	T111B166K010AS	2.0	6	0239	0459	0679	0899	3017	4017	5017	T213B166K010(1)S
16.0	B	20	T111B166M010AS	2.0	6	0240	0460	0680	0900	3018	4018	5018	T213B166M010(1)S
19.0	B	10	T111B196K010AS	2.0	6	0241	0461	0681	0901	3019	4019	5019	T213B196K010(1)S
41.0	C	10	T111C416K010AS	3.0	6	0242	0462	0682	0902	3020	4020	5020	T213C416K010(1)S
50.0	C	10	T111C506K010AS	5.0	6	0243	0463	0683	0903	3021	4021	5021	T213C506K010(1)S
50.0	C	20	T111C506M010AS	5.0	6	0244	0464	0684	0904	3022	4022	5022	T213C506M010(1)S
60.0	C	10	T111C606K010AS	6.0	6	0245	0465	0685	0905	3023	4023	5023	T213C606K010(1)S
60.0	C	20	T111C606M010AS	6.0	6	0246	0466	0686	0906				T213C606M010(1)S
90.0	D	10	T111D906K010AS	9.0	6	0247	0467	0687	0907	3024	4024	5024	T213D906K010(1)S
110.0	D	10	T111D117K010AS	10.0	8	0248	0468	0688	0908	3025	4025	5025	T213D117K010(1)S
110.0	D	20	T111D117M010AS	10.0	8	0249	0469	0689	0909	3026	4026	5026	T213D117M010(1)S

(1) To complete T213 Series Part Number, insert Failure Rate Symbol in the 13th Character as shown on Page 6.

\*For ordering information see page 4 (military) and page 6.







KEMET ultra-miniature T222 Series solid tantalum capacitors are designed especially for miniaturization.

The T222 Series capacitors employ a unique glass-to-metal compression end seal which has no protruding eyelet. This flush end seal construction makes T222 Series capacitors ideally suited for all miniature high density packaging applications. The capacitors con-

sist of a dry porous tantalum pellet hermetically sealed in a solder coated metal case with solder coated alloy 52 and solder coated nickel leads.

The T222 series is approved to MIL-PRF-39003/2, all ratings and failure rates.

### CAPACITOR OUTLINE DRAWINGS



### DIMENSIONS — INCHES & (MILLIMETERS)

CASE SIZE	UNINSULATED		INSULATED		B WIRE DIAMETER
	D $\pm 0.005$ ( $\pm .13$ )	L	D	L	
A	.085 (2.16)	.245 + .015 (6.22 + .38) - .010 (-.25)	.090 ± .009 (2.29 ± .23)	.250 + .031 (6.35 + .79) - .015 (-.38)	.016 + .005 (.41 + .13) - .001 (-.03)
B	.127 (3.23)	.375 ± .015 (.53 ± .38)	.138 ± .010 (3.51 ± .25)	.390 ± .015 (9.91 ± .38)	.016 + .005 (.41 + .13) - .001 (-.03)

### ORDERING INFORMATION

**TANTALUM** — T

**SERIES (CSR09)** — 222

**CASE SIZE** — A / B

**PICOFARAD CODE** — A 225

First two digits represent significant figures.  
3rd digit specifies no. of zeros to follow.

**CAPACITANCE TOLERANCE** — K

M — ±20 K — ±10 J — ±5

**VOLTAGE** — 010

at 85°C

**\*Part Number Example: T222A225K010BS (14 digits - no spaces)**

**INSULATED** — B

**LEAD MATERIAL** — S

S — Standard  
Positive: Alloy 52 (solder coated)  
Negative: Solder coated nickel

**FAILURE RATE LEVEL\*\***

<b>GRADED</b>	<b>EXPONENTIAL</b>
B — 0.1%/k hrs.	M — 1%/k hrs.
C — 0.01%/k hrs.	P — 0.1%/k hrs.
D — 0.001%/k hrs.	R — 0.01%/k hrs.
.	S — 0.001%/k hrs.

**SPECIFICATION** — C\*

All capacitors are sleeved unless specified.

**\*\*Failure Rates apply only to military products**

**For Military Ordering, see page 4.**

### CSR09 CAPACITOR MARKINGS PER MIL-PRF-39003

39003	— Military specification number
02 - K	— Specification sheet number and trademark
2961J	— Nonsignificant dash number and "J" for JAN
+333	— Polarity, date code (1st digit indicates year and the next two digits indicate the week)
XX	— and lot symbol

RATINGS & PART NUMBER REFERENCE

CAPACITANCE µF	CASE SIZE	CAPACITANCE TOLERANCE ±%	KEMET T222 SERIES			MIL-PRF-39003 (CSR09) CAPACITORS						
			KEMET PART NUMBER	D.C. LEAKAGE µA@25°C MAX.	MAX. DISSIPATION FACTOR %@25°C, 120Hz	DASH NUMBER REFERENCE FAILURE RATE LEVEL (%/1000 HRS.)						
						MIL-PRF-39003/2D EXPONENTIAL				MIL-PRF-39003/2D GRADED		
						M (1.0)	P (0.1)	R (0.01)	S (0.001)	B (0.1)	C (0.01)	D (0.001)
<b>6 VOLT RATING AT 85°C — 4 VOLT RATING AT 125°C</b>												
2.7 <b>2.7</b>	A <b>A</b>	5 <b>10</b>	T222A275J006(1)S <b>T222A275K006(1)S</b>	0.6 <b>0.6</b>	6 <b>6</b>	1001 <b>0001</b>	1061 <b>0061</b>	1121 <b>0121</b>	1181 <b>0181</b>	2001 <b>2002</b>	3001 <b>3002</b>	4001 <b>4002</b>
18.0 18.0	B B	5 10	T222B186J006(1)S T222B186K006(1)S	1.4 1.4	6 6	1002 0002	1062 0062	1122 0122	1182 0182	2003 2004	3003 3004	4003 4004
<b>10 VOLT RATING AT 85°C — 7 VOLT RATING AT 125°C</b>												
1.8 1.8 2.2 <b>2.2</b>	A A A <b>A</b>	5 10 5 <b>10</b>	T222A185J010(1)S T222A185K010(1)S T222A225J010(1)S <b>T222A225K010(1)S</b>	0.6 0.6 0.6 <b>0.6</b>	6 6 6 <b>6</b>	1007 0007 1008 <b>0008</b>	1067 0067 1068 <b>0068</b>	1127 0127 1128 <b>0128</b>	1187 0187 1188 <b>0188</b>	2005 2006 2007 <b>2008</b>	3005 3006 3007 <b>3008</b>	4005 4006 4007 <b>4008</b>
10.0 10.0 12.0 12.0 15.0 15.0	B B B B B B	5 10 5 10 5 10	T222B106J010(1)S T222B106K010(1)S T222B126J010(1)S T222B126K010(1)S T222B156J010(1)S T222B156K010(1)S	2.0 2.0 2.0 2.0 2.0 2.0	6 6 6 6 6 6	1009 0009 1010 0010 1011 0011	1069 0069 1070 0070 1071 0071	1129 0129 1130 0130 1131 0131	1189 0189 1190 0190 1191 0191	2009 2010 2011 2012 2013 2014	3009 3010 3011 3012 3013 3014	4009 4010 4011 4012 4013 4014
<b>15 VOLT RATING AT 85°C — 10 VOLT RATING AT 125°C</b>												
1.0 1.0 1.2 1.2 1.5 <b>1.5</b>	A A A A A <b>A</b>	5 10 5 10 5 <b>10</b>	T222A105J015(1)S T222A105K015(1)S T222A125J015(1)S T222A125K015(1)S T222A155J015(1)S <b>T222A155K015(1)S</b>	0.6 0.6 0.6 0.6 0.6 <b>0.6</b>	6 6 6 6 6 <b>6</b>	1012 0012 1013 0013 1014 <b>0014</b>	1072 0072 1073 0073 1074 <b>0074</b>	1132 0132 1133 0133 1134 <b>0134</b>	1192 0192 1193 0193 1194 <b>0194</b>	2015 2016 2017 2018 2019 <b>2020</b>	3015 3016 3017 3018 3019 <b>3020</b>	4015 4016 4017 4018 4019 <b>4020</b>
8.2 8.2	B B	5 10	T222B825J015(1)S T222B825K015(1)S	1.8 1.8	6 6	1015 0015	1075 0075	1135 0135	1195 0195	2021 2022	3021 3022	4021 4022
<b>20 VOLT RATING AT 85°C — 13 VOLT RATING AT 125°C</b>												
0.56 0.56 0.68 0.68 0.82 0.82 1.0 <b>1.0</b>	A A A A A A A <b>A</b>	5 10 5 10 5 10 5 <b>10</b>	T222A564J020(1)S T222A564K020(1)S T222A684J020(1)S T222A684K020(1)S T222A824J020(1)S T222A824K020(1)S T222A105J020(1)S <b>T222A105K020(1)S</b>	0.6 0.6 0.6 0.6 0.6 0.6 0.6 <b>0.6</b>	3 3 3 3 3 3 3 <b>3</b>	1016 0016 1017 0017 1018 0018 1019 <b>0019</b>	1076 0076 1077 0077 1078 0078 1079 <b>0079</b>	1136 0136 1137 0137 1138 0138 1139 <b>0139</b>	1196 0196 1197 0197 1198 0198 1199 <b>0199</b>	2023 2024 2025 2026 2027 2028 2029 <b>2030</b>	3023 3024 3025 3026 3027 3028 3029 <b>3030</b>	4023 4024 4025 4026 4027 4028 4029 <b>4030</b>
3.3 3.3 3.9 3.9 4.7 <b>4.7</b> 5.6 5.6 6.8 6.8	B B B B B <b>B</b> B B B B	5 10 5 10 5 <b>10</b> 5 10 5 10	T222B335J020(1)S T222B335K020(1)S T222B395J020(1)S T222B395K020(1)S T222B475J020(1)S <b>T222B475K020(1)S</b> T222B565J020(1)S T222B565K020(1)S T222B685J020(1)S T222B685K020(1)S	1.0 1.0 2.0 2.0 2.0 <b>2.0</b> 2.0 2.0 2.0 2.0	3 3 3 3 3 <b>3</b> 3 3 3 3	1020 0020 1021 0021 1022 <b>0022</b> 1023 0023 1024 0024	1080 0080 1081 0081 1082 <b>0082</b> 1083 0083 1084 0084	1140 0140 1141 0141 1142 <b>0142</b> 1143 0143 1144 0144	1200 0200 1201 0201 1202 <b>0202</b> 1203 0203 1204 0204	2031 2032 2033 2034 2035 <b>2036</b> 2037 2038 2039 2040	3031 3032 3033 3034 3035 <b>3036</b> 3037 3038 3039 3040	4031 4032 4033 4034 4035 <b>4036</b> 4037 4038 4039 4040
<b>35 VOLT RATING AT 85°C — 23 VOLT RATING AT 125°C</b>												
0.33 0.33 0.39 0.39 0.47 <b>0.47</b>	A A A A A <b>A</b>	5 10 5 10 5 <b>10</b>	T222A334J035(1)S T222A334K035(1)S T222A394J035(1)S T222A394K035(1)S T222A474J035(1)S <b>T222A474K035(1)S</b>	0.6 0.6 0.6 0.6 0.6 <b>0.6</b>	3 3 3 3 3 <b>3</b>	1025 0025 1026 0026 1027 <b>0027</b>	1085 0085 1086 0086 1087 <b>0087</b>	1145 0145 1146 0146 1147 <b>0147</b>	1205 0205 1206 0206 1207 <b>0207</b>	2041 2042 2043 2044 2045 <b>2046</b>	3041 3042 3043 3044 3045 <b>3046</b>	4041 4042 4043 4044 4045 <b>4046</b>
2.2 <b>2.2</b> 2.7 2.7	B <b>B</b> B B	5 <b>10</b> 5 10	T222B225J035(1)S <b>T222B225K035(1)S</b> T222B275J035(1)S T222B275K035(1)S	1.4 <b>1.4</b> 1.4 1.4	3 <b>3</b> 3 3	1028 <b>0028</b> 1029 0029	1088 <b>0088</b> 1089 0089	1148 <b>0148</b> 1149 0149	1208 <b>0208</b> 1209 0209	2047 <b>2048</b> 2049 2050	3047 <b>3048</b> 3049 3050	4047 <b>4048</b> 4049 4050

T222 Series Tantalum Hermetically Sealed

(1) To complete Part Number, insert Failure Rate Symbol in the 13th Character as shown on Page 24.  
Bold Face lines indicate popular part types and values

RATINGS & PART NUMBER REFERENCE

CAPACITANCE µF	CASE SIZE	CAPACITANCE TOLERANCE ±%	KEMET T222 SERIES			MIL-PRF-39003 (CSR09) CAPACITORS						
			KEMET PART NUMBER	D.C. LEAKAGE µA@25°C MAX.	MAX. DISS- PATION FACTOR %@25°C, 120Hz	DASH NUMBER REFERENCE FAILURE RATE LEVEL (%/1000 HRS.)						
						MIL-PRF-39003/2D EXPONENTIAL			MIL-PRF-39003/2D GRADED			
						M (1.0)	P (0.1)	R (0.01)	S (0.001)	B (0.1)	C (0.01)	D (0.001)
<b>50 VOLT RATING AT 85°C — 33 VOLT RATING AT 125°C</b>												
0.22	A	5	T222A224J050(1)S	0.6	3	1030	1090	1150	1210	2051	3051	4051
0.22	A	10	T222A224K050(1)S	0.6	3	0030	0090	0150	0210	2052	3052	4052
0.27	A	5	T222A274J050(1)S	0.6	3	1031	1091	1151	1211	2053	3053	4053
<b>0.27</b>	<b>A</b>	<b>10</b>	<b>T222A274K050(1)S</b>	<b>0.6</b>	<b>3</b>	<b>0031</b>	<b>0091</b>	<b>0151</b>	<b>0211</b>	<b>2054</b>	<b>3054</b>	<b>4054</b>
1.5	B	5	T222B155J050(1)S	1.4	3	1032	1092	1152	1212	2055	3055	4055
1.5	B	10	T222B155K050(1)S	1.4	3	0032	0092	0152	0212	2056	3056	4056
1.8	B	5	T222B185J050(1)S	1.4	3	1033	1093	1153	1213	2057	3057	4057
<b>1.8</b>	<b>B</b>	<b>10</b>	<b>T222B185K050(1)S</b>	<b>1.4</b>	<b>3</b>	<b>0033</b>	<b>0093</b>	<b>0153</b>	<b>0213</b>	<b>2058</b>	<b>3058</b>	<b>4058</b>
<b>75 VOLT RATING AT 85°C — 50 VOLT RATING AT 125°C</b>												
0.047	A	5	T222A473J075(1)S	0.6	3	1034	1094	1154	1214	2059	3059	4059
0.047	A	10	T222A473K075(1)S	0.6	3	0034	0094	0154	0214	2060	3060	4060
0.056	A	5	T222A563J075(1)S	0.6	3	1035	1095	1155	1215	2061	3061	4061
0.056	A	10	T222A563K075(1)S	0.6	3	0035	0095	0155	0215	2062	3062	4062
0.068	A	5	T222A683J075(1)S	0.6	3	1036	1096	1156	1216	2063	3063	4063
0.068	A	10	T222A683K075(1)S	0.6	3	0036	0096	0156	0216	2064	3064	4064
0.082	A	5	T222A823J075(1)S	0.6	3	1037	1097	1157	1217	2065	3065	4065
0.082	A	10	T222A823K075(1)S	0.6	3	0037	0097	0157	0217	2066	3066	4066
0.10	A	5	T222A104J075(1)S	0.6	3	1038	1098	1158	1218	2067	3067	4067
<b>0.10</b>	<b>A</b>	<b>10</b>	<b>T222A104K075(1)S</b>	<b>0.6</b>	<b>3</b>	<b>0038</b>	<b>0098</b>	<b>0158</b>	<b>0218</b>	<b>2068</b>	<b>3068</b>	<b>4068</b>
0.12	A	5	T222A124J075(1)S	0.6	3	1039	1099	1159	1219	2069	3069	4069
0.12	A	10	T222A124K075(1)S	0.6	3	0039	0099	0159	0219	2070	3070	4070
0.15	A	5	T222A154J075(1)S	0.6	3	1040	1100	1160	1220	2071	3071	4071
0.15	A	10	T222A154K075(1)S	0.6	3	0040	0100	0160	0220	2072	3072	4072
0.18	A	5	T222A184J075(1)S	0.6	3	1041	1101	1161	1221	2073	3073	4073
0.18	A	10	T222A184K075(1)S	0.6	3	0041	0101	0161	0221	2074	3074	4074
0.22	B	5	T222B224J075(1)S	0.6	3	1042	1102	1162	1222	2075	3075	4075
0.22	B	10	T222B224K075(1)S	0.6	3	0042	0102	0162	0222	2076	3076	4076
0.27	B	5	T222B274J075(1)S	0.6	3	1043	1103	1163	1223	2077	3077	4077
0.27	B	10	T222B274K075(1)S	0.6	3	0043	0103	0163	0223	2078	3078	4078
0.33	B	5	T222B334J075(1)S	0.6	3	1044	1104	1164	1224	2079	3079	4079
0.33	B	10	T222B334K075(1)S	0.6	3	0044	0104	0164	0224	2080	3080	4080
0.39	B	5	T222B394J075(1)S	0.6	3	1045	1105	1165	1225	2081	3081	4081
0.39	B	10	T222B394K075(1)S	0.6	3	0045	0105	0165	0225	2082	3082	4082
0.47	B	5	T222B474J075(1)S	0.6	3	1046	1106	1166	1226	2083	3083	4083
0.47	B	10	T222B474K075(1)S	0.6	3	0046	0106	0166	0226	2084	3084	4084
0.56	B	5	T222B564J075(1)S	0.6	3	1047	1107	1167	1227	2085	3085	4085
0.56	B	10	T222B564K075(1)S	0.6	3	0047	0107	0167	0227	2086	3086	4086
0.68	B	5	T222B684J075(1)S	0.6	3	1048	1108	1168	1228	2087	3087	4087
0.68	B	10	T222B684K075(1)S	0.6	3	0048	0108	0168	0228	2088	3088	4088
0.82	B	5	T222B824J075(1)S	0.7	3	1049	1109	1169	1229	2089	3089	4089
0.82	B	10	T222B824K075(1)S	0.7	3	0049	0109	0169	0229	2090	3090	4090
1.0	B	5	T222B105J075(1)S	0.9	3	1050	1110	1170	1230	2091	3091	4091
1.0	B	10	T222B105K075(1)S	0.9	3	0050	0110	0170	0230	2092	3092	4092
1.2	B	5	T222B125J075(1)S	0.9	3	1051	1111	1171	1231	2093	3093	4093
1.2	B	10	T222B125K075(1)S	0.9	3	0051	0111	0171	0231	2094	3094	4094

(1) To complete Part Number, insert Failure Rate Symbol in the 13th Character as shown on Page 24.  
Bold Face lines indicate popular part types and values

KEMET standard MIL case hermetically sealed T140 Series (Extended Capacitance Range) are compact, ruggedly built, designed for miniaturized circuitry, and are especially suited for coupling, bypass, filtering and R-C timing circuits. They exhibit excellent stability, low DC leakage current, dissipation factor, and ESR/impedance over a wide temperature and frequency range.

Available in standard EIA capacitance values from .82-1200  $\mu\text{F}$  in  $\pm 20\%$ ,  $\pm 10\%$ , and  $\pm 5\%$  tolerances and working voltages from 6-60 VDC.

Included in the following Series table is a complete listing of CSR23 qualified MIL-C-39003/3 capacitors.

**DIMENSIONS — INCHES & (MILLIMETERS)**

CASE SIZE	UNINSULATED		INSULATED		B $\pm 0.002$ (.05)	C MAX.
	D $\pm 0.005$ (.13)	L $\pm 0.031$ (.79)	D $\pm 0.010$ (.25)	L $\pm 0.031$ (.79)		
A	0.125 (3.18)	0.250 (6.35)	0.135 (3.43)	0.286 (7.26)	0.020 (.51)	0.422 (10.72)
B	0.175 (4.45)	0.438 (11.13)	0.185 (4.70)	0.474 (12.04)	0.020 (.51)	0.610 (15.49)
C	0.279 (7.09)	0.650 (16.51)	0.289 (7.34)	0.686 (17.42)	0.025 (.64)	0.822 (20.88)
D	0.341 (8.66)	0.750 (19.05)	0.351 (8.92)	0.786 (19.96)	0.025 (.64)	0.922 (23.42)

**MARKING INFORMATION\*  
A, B, C & D CASES**

+K 10%	— Polarity, Manufacturer's Identification and Capacitance Tol.
5R6 $\mu\text{F}$	— Normal Capacitance — ( $\mu\text{F}$ ) ("R" indicates decimal)
10V	— Voltage
0312	— Date Code (e.g.: 0312)

\* For Military Marking, see page 4.

**CAPACITOR OUTLINE DRAWINGS**



Effective September 30, 2005, the KEMET T140 Series is RoHS compliant by ordering the "T" (100% tin) end termination in the 14th position of the part number.

**RATINGS & PART NUMBER REFERENCE**

CAPACITANCE $\mu\text{F}$	CASE SIZE	CAPACITANCE TOLERANCE $\pm\%$	KEMET T140			MIL-PRF-39003 (CSR23) CAPACITORS							KEMET EQUIVALENT MILITARY PART NUMBER		
			KEMET PART NUMBER	D.C. LEAKAGE $\mu\text{A}@25^\circ\text{C}$ MAX.	MAX. DISSIPATION FACTOR $\%@25^\circ\text{C}$ , 120Hz	DASH NUMBER REFERENCE FAILURE RATE LEVEL (%/1000 HRS.)				KEMET EQUIVALENT MILITARY PART NUMBER					
						MIL-PRF-39003/3F EXPONENTIAL	MIL-PRF-39003/3F GRADED	M	P	R	S	B		C	D
<b>6 VOLT RATING AT 85°C — 4 VOLT RATING AT 125°C</b>															
8.2	A	10, 20	T140A825(1)006AS	0.9	6										
<b>10.0</b>	<b>A</b>	<b>10</b>	<b>T140A106K006AS</b>	<b>0.9</b>	<b>6</b>	<b>0101</b>	<b>0201</b>	<b>0301</b>	<b>0401</b>	<b>2001</b>	<b>3001</b>	<b>4001</b>	<b>T242A106K006(2)S</b>		
<b>10.0</b>	<b>A</b>	<b>20</b>	<b>T140A106M006AS</b>	<b>0.9</b>	<b>6</b>	<b>0102</b>	<b>0202</b>	<b>0302</b>	<b>0402</b>	<b>2002</b>	<b>3002</b>	<b>4002</b>	<b>T242A106M006(2)S</b>		
12.0	A	10	T140A126K006AS	1.0	6	0103	0203	0303	0403	2003	3003	4003	T242A126K006(2)S		
12.0	A	20	T140A126M006AS	1.0	6										
68.0	B	10, 20	T140B686(1)006AS	3.0	6										
82.0	B	10, 20	T140B826(1)006AS	3.0	6										
<b>100.0</b>	<b>B</b>	<b>10</b>	<b>T140B107K006AS</b>	<b>6.0</b>	<b>6</b>	<b>0104</b>	<b>0204</b>	<b>0304</b>	<b>0404</b>	<b>2004</b>	<b>3004</b>	<b>4004</b>	<b>T242B107K006(2)S</b>		
<b>100.0</b>	<b>B</b>	<b>20</b>	<b>T140B107M006AS</b>	<b>6.0</b>	<b>6</b>	<b>0105</b>	<b>0205</b>	<b>0305</b>	<b>0405</b>	<b>2005</b>	<b>3005</b>	<b>4005</b>	<b>T242B107M006(2)S</b>		
220.0	C	10, 20	T140C227(1)006AS	10.0	8										
270.0	C	10, 20	T140C277(1)006AS	10.0	8										
330.0	C	10	T140C337K006AS	10.0	8	0106	0206	0306	0406	2006	3006	4006	T242C337K006(2)S		
330.0	C	20	T140C337M006AS	10.0	8	0107	0207	0307	0407	2007	3007	4007	T242C337M006(2)S		
390.0	C	10	T140C397K006AS	10.0	10	0108	0208	0308	0408	2008	3008	4008	T242C397K006(2)S		
390.0	C	20	T140C397M006AS	10.0	10										
<b>470.0</b>	<b>C</b>	<b>10</b>	<b>T140C477K006AS</b>	<b>10.0</b>	<b>10</b>	<b>0109</b>	<b>0209</b>	<b>0309</b>	<b>0409</b>	<b>2009</b>	<b>3009</b>	<b>4009</b>	<b>T242C477K006(2)S</b>		
<b>470.0</b>	<b>C</b>	<b>20</b>	<b>T140C477M006AS</b>	<b>10.0</b>	<b>10</b>	<b>0110</b>	<b>0210</b>	<b>0310</b>	<b>0410</b>	<b>2010</b>	<b>3010</b>	<b>4010</b>	<b>T242C477M006(2)S</b>		
560.0	D	10, 20	T140D567(1)006AS	20.0	10										
680.0	D	10	T140D687K006AS	20.0	10	0111	0211	0311	0411	2011	3011	4011	T242D687K006(2)S		
680.0	D	20	T140D687M006AS	20.0	10	0112	0212	0312	0412	2012	3012	4012	T242D687M006(2)S		
820.0	D	10	T140D827K006AS	20.0	10	0113	0213	0313	0413	2013	3013	4013	T242D827K006(2)S		
820.0	D	20	T140D827M006AS	20.0	10										
<b>1000.0</b>	<b>D</b>	<b>10</b>	<b>T140D108K006AS</b>	<b>20.0</b>	<b>10</b>	<b>0114</b>	<b>0214</b>	<b>0314</b>	<b>0414</b>	<b>2014</b>	<b>3014</b>	<b>4014</b>	<b>T242D108K006(2)S</b>		
<b>1000.0</b>	<b>D</b>	<b>20</b>	<b>T140D108M006AS</b>	<b>20.0</b>	<b>10</b>	<b>0115</b>	<b>0215</b>	<b>0315</b>	<b>0415</b>	<b>2015</b>	<b>3015</b>	<b>4015</b>	<b>T242D108M006(2)S</b>		
1200.0	D	20	T140D128M006AS	20.0	10										

(1) To complete T140 Series Part Number, insert Capacitance Tolerance Symbol in the 9th Character as shown on Page 6.  
(2) To complete the T242 Series Part Number, insert Failure Rate Symbol in the 13th Character.  
**Bold Face** lines indicate popular part types and values.  
For ordering information, see page 4 (Military) and Page 6.

T140/T242 Series Tantalum  
Hermetically Sealed



**RATINGS & PART NUMBER REFERENCE**

CAPACITANCE µF	CASE SIZE	CAPACITANCE TOLERANCE ±%	KEMET T140			MIL-PRF-39003 (CSR23) CAPACITORS								KEMET EQUIVALENT MILITARY PART NUMBER
			KEMET PART NUMBER	D.C. LEAKAGE µA@25°C MAX.	MAX. DISSIPATION FACTOR %@25°C, 120Hz	DASH NUMBER REFERENCE FAILURE RATE LEVEL (%/1000 HRS.)								
						MIL-PRF-39003/3F EXPONENTIAL				MIL-PRF-39003/3F GRADED				
						M (1.0)	P (0.1)	R (0.01)	S (0.001)	B (0.1)	C (0.01)	D (0.001)		
<b>10 VOLT RATING AT 85°C — 7 VOLT RATING AT 125°C</b>														
5.6	A	10, 20	T140A565(1)010AS	1.0	4									
6.8	A	10	T140A685K010AS	1.0	6	0116	0216	0316	0416	2016	3016	4016	T242A685K010(2)S	
6.8	A	20	T140A685M010AS	1.0	6	0117	0217	0317	0417	2017	3017	4017	T242A685M010(2)S	
<b>8.2</b>	<b>A</b>	<b>10</b>	<b>T140A825K010AS</b>	<b>1.2</b>	<b>6</b>	<b>0118</b>	<b>0218</b>	<b>0318</b>	<b>0418</b>	<b>2018</b>	<b>3018</b>	<b>4018</b>	<b>T242A825K010(2)S</b>	
<b>8.2</b>	<b>A</b>	<b>20</b>	<b>T140A825M010AS</b>	<b>1.2</b>	<b>6</b>									
47.0	B	10	T140B476K010AS	4.0	6	0119	0219	0319	0419	2019	3019	4019	T242B476K010(2)S	
47.0	B	20	T140B476M010AS	4.0	6	0120	0220	0320	0420	2020	3020	4020	T242B476M010(2)S	
56.0	B	10	T140B566K010AS	5.0	6	0121	0221	0321	0421	2021	3021	4021	T242B566K010(2)S	
56.0	B	20	T140B566M010AS	5.0	6									
<b>68.0</b>	<b>B</b>	<b>10</b>	<b>T140B686K010AS</b>	<b>6.0</b>	<b>6</b>	<b>0122</b>	<b>0222</b>	<b>0322</b>	<b>0422</b>	<b>2022</b>	<b>3022</b>	<b>4022</b>	<b>T242B686K010(2)S</b>	
<b>68.0</b>	<b>B</b>	<b>20</b>	<b>T140B686M010AS</b>	<b>6.0</b>	<b>6</b>	<b>0123</b>	<b>0223</b>	<b>0323</b>	<b>0423</b>	<b>2023</b>	<b>3023</b>	<b>4023</b>	<b>T242B686M010(2)S</b>	
<b>82.0</b>	<b>B</b>	<b>10</b>	<b>T140B826K010AS</b>	<b>7.0</b>	<b>6</b>	<b>0124</b>	<b>0224</b>	<b>0324</b>	<b>0424</b>	<b>2024</b>	<b>3024</b>	<b>4024</b>	<b>T242B826K010(2)S</b>	
<b>82.0</b>	<b>B</b>	<b>20</b>	<b>T140B826M010AS</b>	<b>7.0</b>	<b>6</b>									
150.0	C	10, 20	T140C157(1)010AS	8.0	8									
180.0	C	10, 20	T140C187(1)010AS	8.0	8									
<b>220.0</b>	<b>C</b>	<b>10</b>	<b>T140C227K010AS</b>	<b>12.0</b>	<b>8</b>	<b>0125</b>	<b>0225</b>	<b>0325</b>	<b>0425</b>	<b>2025</b>	<b>3025</b>	<b>4025</b>	<b>T242C227K010(2)S</b>	
<b>220.0</b>	<b>C</b>	<b>20</b>	<b>T140C227M010AS</b>	<b>12.0</b>	<b>8</b>	<b>0126</b>	<b>0226</b>	<b>0326</b>	<b>0426</b>	<b>2026</b>	<b>3026</b>	<b>4026</b>	<b>T242C227M010(2)S</b>	
270.0	C	10	T140C277K010AS	13.0	8	0127	0227	0327	0427	2027	3027	4027	T242C277K010(2)S	
270.0	C	20	T140C277M010AS	13.0	8									
330.0	D	10, 20	T140D337(1)010AS	16.0	8									
390.0	D	10	T140D397K010AS	16.0	10	0128	0228	0328	0428	2028	3028	4028	T242D397K010(2)S	
390.0	D	20	T140D397M010AS	16.0	10									
470.0	D	10	T140D477K010AS	16.0	10	0129	0229	0329	0429	2029	3029	4029	T242D477K010(2)S	
470.0	D	20	T140D477M010AS	16.0	10	0130	0230	0330	0430	2030	3030	4030	T242D477M010(2)S	
<b>560.0</b>	<b>D</b>	<b>10</b>	<b>T140D567K010AS</b>	<b>20.0</b>	<b>10</b>	<b>0131</b>	<b>0231</b>	<b>0331</b>	<b>0431</b>	<b>2031</b>	<b>3031</b>	<b>4031</b>	<b>T242D567K010(2)S</b>	
<b>560.0</b>	<b>D</b>	<b>20</b>	<b>T140D567M010AS</b>	<b>20.0</b>	<b>10</b>									
<b>15 VOLT RATING AT 85°C — 10 VOLT RATING AT 125°C</b>														
3.9	A	10, 20	T140A395(1)015AS	1.0	4									
4.7	A	10	T140A475K015AS	1.0	4	0132	0232	0332	0432	2032	3032	4032	T242A475K015(2)S	
4.7	A	20	T140A475M015AS	1.0	4	0133	0233	0333	0433	2033	3033	4033	T242A475M015(2)S	
5.6	A	10	T140A565K015AS	1.3	4	0134	0234	0334	0434	2034	3034	4034	T242A565K015(2)S	
5.6	A	20	T140A565M015AS	1.3	4									
27.0	B	10, 20	T140B276(1)015AS	3.0	6									
33.0	B	10	T140B336K015AS	5.0	6	0135	0235	0335	0435	2035	3035	4035	T242B336K015(2)S	
33.0	B	20	T140B336M015AS	5.0	6	0136	0236	0336	0436	2036	3036	4036	T242B336M015(2)S	
<b>39.0</b>	<b>B</b>	<b>10</b>	<b>T140B396K015AS</b>	<b>5.3</b>	<b>6</b>	<b>0137</b>	<b>0237</b>	<b>0337</b>	<b>0437</b>	<b>2037</b>	<b>3037</b>	<b>4037</b>	<b>T242B396K015(2)S</b>	
<b>39.0</b>	<b>B</b>	<b>20</b>	<b>T140B396M015AS</b>	<b>5.3</b>	<b>6</b>									
82.0	C	10, 20	T140C826(1)015AS	8.0	6									
100.0	C	10, 20	T140C107(1)015AS	10.0	6									
120.0	C	10, 20	T140C127(1)015AS	10.0	6									
150.0	C	10	T140C157K015AS	15.0	8	0138	0238	0338	0438	2038	3038	4038	T242C157K015(2)S	
150.0	C	20	T140C157M015AS	15.0	8	0139	0239	0339	0439	2039	3039	4039	T242C157M015(2)S	
<b>180.0</b>	<b>C</b>	<b>10</b>	<b>T140C187K015AS</b>	<b>15.0</b>	<b>8</b>	<b>0140</b>	<b>0240</b>	<b>0340</b>	<b>0440</b>	<b>2040</b>	<b>3040</b>	<b>4040</b>	<b>T242C187K015(2)S</b>	
<b>180.0</b>	<b>C</b>	<b>20</b>	<b>T140C187M015AS</b>	<b>15.0</b>	<b>8</b>									
220.0	D	10	T140D227K015AS	20.0	8	0141	0241	0341	0441	2041	3041	4041	T242D227K015(2)S	
220.0	D	20	T140D227M015AS	20.0	8	0142	0242	0342	0442	2042	3042	4042	T242D227M015(2)S	
270.0	D	10	T140D277K015AS	20.0	8	0143	0243	0343	0443	2043	3043	4043	T242D277K015(2)S	
270.0	D	20	T140D277M015AS	20.0	8									
<b>330.0</b>	<b>D</b>	<b>10</b>	<b>T140D337K015AS</b>	<b>20.0</b>	<b>8</b>	<b>0144</b>	<b>0244</b>	<b>0344</b>	<b>0444</b>	<b>2044</b>	<b>3044</b>	<b>4044</b>	<b>T242D337K015(2)S</b>	
<b>330.0</b>	<b>D</b>	<b>20</b>	<b>T140D337M015AS</b>	<b>20.0</b>	<b>8</b>	<b>0145</b>	<b>0245</b>	<b>0345</b>	<b>0445</b>	<b>2045</b>	<b>3045</b>	<b>4045</b>	<b>T242D337M015(2)S</b>	

(1) To complete T140 Series Part Number, insert Capacitance Tolerance Symbol in the 9th Character as shown on Page 6.  
 (2) To complete the T242 Series Part Number, insert Failure Rate Symbol in the 13th Character.

RATINGS & PART NUMBER REFERENCE

CAPACITANCE μF	CASE SIZE	CAPACITANCE TOLERANCE ±%	KEMET T140			MIL-PRF-39003 (CSR23) CAPACITORS								KEMET EQUIVALENT MILITARY PART NUMBER
			KEMET PART NUMBER	D.C. LEAKAGE μA@25°C MAX.	MAX. DISSIPATION FACTOR %@25°C, 120Hz	DASH NUMBER REFERENCE FAILURE RATE LEVEL (%/1000 HRS.)								
						MIL-PRF-39003/3F EXPONENTIAL				MIL-PRF-39003/3F GRADED				
						M (1.0)	P (0.1)	R (0.01)	S (0.001)	B (0.1)	C (0.01)	D (0.001)		
<b>20 VOLT RATING AT 85°C — 13 VOLT RATING AT 125°C</b>														
2.7	A	10	T140A275K020AS	0.8	4	0146	0246	0346	0446	2046	3046	4046	T242A275K020(2)S	
2.7	A	20	T140A275M020AS	0.8	4									
3.3	A	10	T140A335K020AS	1.0	4	0147	0247	0347	0447	2047	3047	4047	T242A335K020(2)S	
3.3	A	20	T140A335M020AS	1.0	4	0148	0248	0348	0448	2048	3048	4048	T242A335M020(2)S	
3.9	A	10	T140A395K020AS	1.2	4	0149	0249	0349	0449	2049	3049	4049	T242A395K020(2)S	
3.9	A	20	T140A395M020AS	1.2	4									
18.0	B	10	T140B186K020AS	3.0	6	0150	0250	0350	0450	2050	3050	4050	T242B186K020(2)S	
18.0	B	20	T140B186M020AS	3.0	6									
<b>22.0</b>	<b>B</b>	<b>10</b>	<b>T140B226K020AS</b>	<b>3.0</b>	<b>6</b>	<b>0151</b>	<b>0251</b>	<b>0351</b>	<b>0451</b>	<b>2051</b>	<b>3051</b>	<b>4051</b>	<b>T242B226K020(2)S</b>	
<b>22.0</b>	<b>B</b>	<b>20</b>	<b>T140B226M020AS</b>	<b>3.0</b>	<b>6</b>	<b>0152</b>	<b>0252</b>	<b>0352</b>	<b>0452</b>	<b>2052</b>	<b>3052</b>	<b>4052</b>	<b>T242B226M020(2)S</b>	
<b>27.0</b>	<b>B</b>	<b>10</b>	<b>T140B276K020AS</b>	<b>4.0</b>	<b>6</b>	<b>0153</b>	<b>0253</b>	<b>0353</b>	<b>0453</b>	<b>2053</b>	<b>3053</b>	<b>4053</b>	<b>T242B276K020(2)S</b>	
<b>27.0</b>	<b>B</b>	<b>20</b>	<b>T140B276M020AS</b>	<b>4.0</b>	<b>6</b>									
56.0	C	10	T140C566K020AS	7.0	6	0154	0254	0354	0454	2054	3054	4054	T242C566K020(2)S	
56.0	C	20	T140C566M020AS	7.0	6									
68.0	C	10	T140C686K020AS	8.0	6	0155	0255	0355	0455	2055	3055	4055	T242C686K020(2)S	
68.0	C	20	T140C686M020AS	8.0	6	0156	0256	0356	0456	2056	3056	4056	T242C686M020(2)S	
82.0	C	10	T140C826K020AS	10.0	6	0157	0257	0357	0457	2057	3057	4057	T242C826K020(2)S	
82.0	C	20	T140C826M020AS	10.0	6									
<b>100.0</b>	<b>C</b>	<b>10</b>	<b>T140C107K020AS</b>	<b>12.0</b>	<b>6</b>	<b>0158</b>	<b>0258</b>	<b>0358</b>	<b>0458</b>	<b>2058</b>	<b>3058</b>	<b>4058</b>	<b>T242C107K020(2)S</b>	
<b>100.0</b>	<b>C</b>	<b>20</b>	<b>T140C107M020AS</b>	<b>12.0</b>	<b>6</b>	<b>0159</b>	<b>0259</b>	<b>0359</b>	<b>0459</b>	<b>2059</b>	<b>3059</b>	<b>4059</b>	<b>T242C107M020(2)S</b>	
120.0	C	10	T140C127K020AS	12.0	6	0160	0260	0360	0460	2060	3060	4060	T242C127K020(2)S	
120.0	C	20	T140C127M020AS	12.0	6									
150.0	D	10	T140D157K020AS	15.0	8	0161	0261	0361	0461	2061	3061	4061	T242D157K020(2)S	
150.0	D	20	T140D157M020AS	15.0	8	0162	0262	0362	0462	2062	3062	4062	T242D157M020(2)S	
<b>180.0</b>	<b>D</b>	<b>10</b>	<b>T140D187K020AS</b>	<b>15.0</b>	<b>8</b>	<b>0163</b>	<b>0263</b>	<b>0363</b>	<b>0463</b>	<b>2063</b>	<b>3063</b>	<b>4063</b>	<b>T242D187K020(2)S</b>	
<b>180.0</b>	<b>D</b>	<b>20</b>	<b>T140D187M020AS</b>	<b>15.0</b>	<b>8</b>									
<b>30 VOLT RATING AT 85°C — 20 VOLT RATING AT 125°C</b>														
1.2	A	10, 20	T140A125(1)030AS	1.0	4									
1.5	A	10, 20	T140A155(1)030AS	1.0	4									
1.8	A	10, 20	T140A185(1)030AS	1.0	4									
<b>2.2</b>	<b>A</b>	<b>10, 20</b>	<b>T140A225(1)030AS</b>	<b>1.0</b>	<b>4</b>									
<b>2.7</b>	<b>A</b>	<b>10, 20</b>	<b>T140A275(1)030AS</b>	<b>1.0</b>	<b>4</b>									
12.0	B	10, 20	T140B126(1)030AS	3.0	4									
15.0	B	10, 20	T140B156(1)030AS	3.0	4									
<b>18.0</b>	<b>B</b>	<b>10, 20</b>	<b>T140B186(1)030AS</b>	<b>3.0</b>	<b>4</b>									
<b>33.0</b>	<b>C</b>	<b>10, 20</b>	<b>T140C336(1)030AS</b>	<b>6.0</b>	<b>6</b>									
<b>39.0</b>	<b>C</b>	<b>10, 20</b>	<b>T140C396(1)030AS</b>	<b>6.0</b>	<b>6</b>									
<b>47.0</b>	<b>C</b>	<b>10, 20</b>	<b>T140C476(1)030AS</b>	<b>7.0</b>	<b>6</b>									
<b>56.0</b>	<b>C</b>	<b>10, 20</b>	<b>T140C566(1)030AS</b>	<b>7.0</b>	<b>6</b>									
<b>68.0</b>	<b>C</b>	<b>10, 20</b>	<b>T140C686(1)030AS</b>	<b>7.0</b>	<b>6</b>									
82.0	D	10, 20	T140D826(1)030AS	10.0	6									
<b>100.0</b>	<b>D</b>	<b>10, 20</b>	<b>T140D107(1)030AS</b>	<b>10.0</b>	<b>8</b>									

(1) To complete T140 Series Part Number, insert Capacitance Tolerance Symbol in the 9th Character as shown on Page 6.

(2) To complete the T242 Series Part Number, insert Failure Rate Symbol in the 13th Character.

**Bold Face** lines indicate popular part types and values.

T140/T242 Series Tantalum  
Hermetically Sealed

### RATINGS & PART NUMBER REFERENCE

CAPACITANCE μF	CASE SIZE	CAPACITANCE TOLERANCE ±%	KEMET T140			MIL-PRF-39003 (CSR23) CAPACITORS									
			KEMET PART NUMBER	D.C. LEAKAGE μA@25°C MAX.	MAX. DISSIPATION FACTOR %@25°C, 120Hz	DASH NUMBER REFERENCE FAILURE RATE LEVEL (%/1000 HRS.)						KEMET EQUIVALENT MILITARY PART NUMBER			
						MIL-PRF-39003/3F EXPONENTIAL				MIL-PRF-39003/3F GRADED					
						M (1.0)	P (0.1)	R (0.01)	S (0.001)	B (0.1)	C (0.01)		D (0.001)		
<b>35 VOLT RATING AT 85°C — 23 VOLT RATING AT 125°C</b>															
1.2	A	10, 20	T140A125(1)035AS	0.6	4										
1.5	A	10, 20	T140A155(1)035AS	0.8	4										
1.8	A	10	T140A185K035AS	1.0	4	0164	0264	0364	0464	2064	3064	4064	T242A185K035(2)S		
1.8	A	20	T140A185M035AS	1.0	4										
8.2	B	10	T140B825K035AS	3.0	4	0165	0265	0365	0465	2065	3065	4065	T242B825K035(2)S		
8.2	B	20	T140B825M035AS	3.0	4										
<b>10.0</b>	<b>B</b>	<b>10</b>	<b>T140B106K035AS</b>	<b>3.0</b>	<b>4</b>	<b>0166</b>	<b>0266</b>	<b>0366</b>	<b>0466</b>	<b>2066</b>	<b>3066</b>	<b>4066</b>	<b>T242B106K035(2)S</b>		
<b>10.0</b>	<b>B</b>	<b>20</b>	<b>T140B106M035AS</b>	<b>3.0</b>	<b>4</b>	<b>0167</b>	<b>0267</b>	<b>0367</b>	<b>0467</b>	<b>2067</b>	<b>3067</b>	<b>4067</b>	<b>T242B106M035(2)S</b>		
27.0	C	10, 20	T140C276(1)035AS	7.0	6										
33.0	C	10	T140C336K035AS	8.0	6	0168	0268	0368	0468	2068	3068	4068	T242C336K035(2)S		
33.0	C	20	T140C336M035AS	8.0	6	0169	0269	0369	0469	2069	3069	4069	T242C336M035(2)S		
39.0	C	10	T140C396K035AS	10.0	6	0170	0270	0370	0470	2070	3070	4070	T242C396K035(2)S		
39.0	C	20	T140C396M035AS	10.0	6										
<b>47.0</b>	<b>C</b>	<b>10</b>	<b>T140C476K035AS</b>	<b>10.0</b>	<b>6</b>	<b>0171</b>	<b>0271</b>	<b>0371</b>	<b>0471</b>	<b>2071</b>	<b>3071</b>	<b>4071</b>	<b>T242C476K035(2)S</b>		
<b>47.0</b>	<b>C</b>	<b>20</b>	<b>T140C476M035AS</b>	<b>10.0</b>	<b>6</b>	<b>0172</b>	<b>0272</b>	<b>0372</b>	<b>0472</b>	<b>2072</b>	<b>3072</b>	<b>4072</b>	<b>T242C476M035(2)S</b>		
56.0	D	10	T140D566K035AS	12.0	6	0173	0273	0373	0473	2073	3073	4073	T242D566K035(2)S		
56.0	D	20	T140D566M035AS	12.0	6										
<b>68.0</b>	<b>D</b>	<b>10</b>	<b>T140D686K035AS</b>	<b>12.0</b>	<b>6</b>	<b>0174</b>	<b>0274</b>	<b>0374</b>	<b>0474</b>	<b>2074</b>	<b>3074</b>	<b>4074</b>	<b>T242D686K035(2)S</b>		
<b>68.0</b>	<b>D</b>	<b>20</b>	<b>T140D686M035AS</b>	<b>12.0</b>	<b>6</b>	<b>0175</b>	<b>0275</b>	<b>0375</b>	<b>0475</b>	<b>2075</b>	<b>3075</b>	<b>4075</b>	<b>T242D686M035(2)S</b>		
82.0	D	10, 20	T140D826(1)035AS	20.0	8										
100.0	D	10, 20	T140D107(1)035AS	20.0	8										
<b>50 VOLT RATING AT 85°C — 33 VOLT RATING AT 125°C</b>															
1.2	A	10	T140A125K050AS	0.6	4	0176	0276	0376	0476	2076	3076	4076	T242A125K050(2)S		
1.2	A	20	T140A125M050AS	0.6	4										
1.5	A	10	T140A155K050AS	0.8	4	0177	0277	0377	0477	2077	3077	4077	T242A155K050(2)S		
1.5	A	20	T140A155M050AS	0.8	4	0178	0278	0378	0478	2078	3078	4078	T242A155M050(2)S		
5.6	B	10	T140B565K050AS	2.5	4	0179	0279	0379	0479	2079	3079	4079	T242B565K050(2)S		
5.6	B	20	T140B565M050AS	2.5	4										
<b>6.8</b>	<b>B</b>	<b>10</b>	<b>T140B685K050AS</b>	<b>2.5</b>	<b>4</b>	<b>0180</b>	<b>0280</b>	<b>0380</b>	<b>0480</b>	<b>2080</b>	<b>3080</b>	<b>4080</b>	<b>T242B685K050(2)S</b>		
<b>6.8</b>	<b>B</b>	<b>20</b>	<b>T140B685M050AS</b>	<b>2.5</b>	<b>4</b>	<b>0181</b>	<b>0281</b>	<b>0381</b>	<b>0481</b>	<b>2081</b>	<b>3081</b>	<b>4081</b>	<b>T242B685M050(2)S</b>		
<b>22.0</b>	<b>C</b>	<b>10</b>	<b>T140C226K050AS</b>	<b>7.0</b>	<b>6</b>	<b>0182</b>	<b>0282</b>	<b>0382</b>	<b>0482</b>	<b>2082</b>	<b>3082</b>	<b>4082</b>	<b>T242C226K050(2)S</b>		
<b>22.0</b>	<b>C</b>	<b>20</b>	<b>T140C226M050AS</b>	<b>7.0</b>	<b>6</b>	<b>0183</b>	<b>0283</b>	<b>0383</b>	<b>0483</b>	<b>2083</b>	<b>3083</b>	<b>4083</b>	<b>T242C226M050(2)S</b>		
<b>27.0</b>	<b>C</b>	<b>10</b>	<b>T140C276K050AS</b>	<b>8.0</b>	<b>6</b>	<b>0184</b>	<b>0284</b>	<b>0384</b>	<b>0484</b>	<b>2084</b>	<b>3084</b>	<b>4084</b>	<b>T242C276K050(2)S</b>		
<b>27.0</b>	<b>C</b>	<b>20</b>	<b>T140C276M050AS</b>	<b>8.0</b>	<b>6</b>										
33.0	D	10	T140D336K050AS	10.0	6	0185	0285	0385	0485	2085	*	*	T242D336K050(2)S		
33.0	D	20	T140D336M050AS	10.0	6	0186	0286	0386	0486	2086	*	*	T242D336M050(2)S		
<b>39.0</b>	<b>D</b>	<b>10</b>	<b>T140D396K050AS</b>	<b>10.0</b>	<b>6</b>	<b>0187</b>	<b>0287</b>	<b>0387</b>	<b>0487</b>	<b>2087</b>	*	*	<b>T242D396K050(2)S</b>		
<b>39.0</b>	<b>D</b>	<b>20</b>	<b>T140D396M050AS</b>	<b>10.0</b>	<b>6</b>						*	*	<b>T242D396M050(2)S</b>		
47.0	D	20	T140D476M050AS	10.0	6										
<b>60 VOLT RATING AT 85°C — 40 VOLT RATING AT 125°C</b>															
0.82	A	10, 20	T140A824(1)060AS	0.5	4										
1.0	A	10, 20	T140A105(1)060AS	0.5	4										
4.7	B	10, 20	T140B475(1)060AS	3.0	4										
5.6	B	10, 20	T140B565(1)060AS	3.0	4										
15.0	C	10, 20	T140C156(1)060AS	5.0	6										
18.0	C	10, 20	T140C186(1)060AS	6.0	6										
<b>22.0</b>	<b>C</b>	<b>10, 20</b>	<b>T140C226(1)060AS</b>	<b>7.0</b>	<b>6</b>										
27.0	D	10, 20	T140D276(1)060AS	10.0	6										
<b>33.0</b>	<b>D</b>	<b>10, 20</b>	<b>T140D336(1)060AS</b>	<b>10.0</b>	<b>6</b>										

(1) To complete T140 Series Part Number, insert Capacitance Tolerance Symbol in the 9th Character as shown on Page 6.

(2) To complete the T242 Series Part Number, insert Failure Rate Symbol in the 13th Character.

\*Note: C Failure Rate not QPL for -3085 thru 3087

D Failure Rate not QPL for -4085 thru 4087

**Bold Face** lines indicate popular part types and values.

Available from 1.2  $\mu\text{F}$  to 1000  $\mu\text{F}$ , 6VDC to 50 VDC, these high capacitance-to-volume ratio, hermetically sealed solid tantalum capacitors are offered in standard MIL style A, B, C, and D cases. They meet or exceed the environmental and mechanical requirements of MIL-C-39003. Designed to operate from  $-55^{\circ}\text{C}$  to  $+125^{\circ}\text{C}$ , they exhibit

exceptionally low DC leakage, dissipation factor and impedance characteristics. They are ideal for coupling, bypass, filtering and timing circuits, and are excellent substitutes for wet tantalums in low voltage applications. They are available in style CSR33 (T252 Series) per MIL-PRF-39003/06.

T252 Series Tantalum  
Hermetically Sealed

**CAPACITOR OUTLINE DRAWINGS**



**DIMENSIONS — INCHES & (MILLIMETERS)**

CASE SIZE	UNINSULATED		INSULATED		B $\pm 0.002$ ( $\pm .05$ )	C MAX.
	D $\pm 0.005$ ( $\pm .13$ )	L $\pm 0.031$ ( $\pm .79$ )	D $\pm 0.010$ ( $\pm .25$ )	L $\pm 0.031$ ( $\pm .79$ )		
A	0.125 (3.18)	0.250 (6.35)	0.135 (3.43)	0.286 (7.26)	0.020 (.51)	0.422 (10.72)
B	0.175 (4.45)	0.438 (11.13)	0.185 (4.70)	0.474 (12.04)	0.020 (.51)	0.610 (15.49)
C	0.279 (7.09)	0.650 (16.51)	0.289 (7.34)	0.686 (17.42)	0.025 (.64)	0.822 (20.88)
D	0.341 (8.66)	0.750 (19.05)	0.351 (8.92)	0.786 (19.96)	0.025 (.64)	0.922 (23.42)

**ORDERING INFORMATION**



For Military Marking Information, see page 4.



**TANTALUM HERMETICALLY SEALED / AXIAL — MIL-PRF-39003  
T252 (CSR33) SERIES**

**RATINGS & PART NUMBER REFERENCE**

CAPACITANCE µF	CASE SIZE	CAPACITANCE TOLERANCE ±%	KEMET T252 SERIES				MIL-PRF-39003 (CSR33) CAPACITORS					
			D.C. LEAKAGE µA@25°C MAX.	MAX. DISSI- PATION FACTOR %@25°C, 120Hz	DASH NUMBER REFERENCE FAILURE RATE LEVEL (%/1000 HRS.)				KEMET EQUIVALENT MILITARY PART NUMBER			
					MIL-PRF-39003/6C EXPONENTIAL		MIL-PRF-39003/6C GRADED					
					M (1.0)	P (0.1)	R (0.01)	S (0.001)	B (0.1)	C (0.01)	D (0.001)	
<b>6 VOLT RATING AT 85°C</b>												
10.0	A	10	0.5	6	0001	0101	0201	0301	2001	3001	4001	T252A106K006(1)S
10.0	A	20	0.5	6	0002	0102	0202	0302	2002	3002	4002	T252A106M006(1)S
12.0	A	10	0.5	6	0003	0103	0203	0303	2003	3003	4003	T252A126K006(1)S
100.0	B	10	1.0	8	0004	0104	0204	0304	2004	3004	4004	T252B107K006(1)S
100.0	B	20	1.0	8	0005	0105	0205	0305	2005	3005	4005	T252B107M006(1)S
330.0	C	10	2.0	8	0006	0106	0206	0306	2006	3006	4006	T252C337K006(1)S
330.0	C	20	2.0	8	0007	0107	0207	0307	2007	3007	4007	T252C337M006(1)S
390.0	C	10	2.0	10	0008	0108	0208	0308	2008	3008	4008	T252C397K006(1)S
470.0	C	10	2.0	10	0009	0109	0209	0309	2009	3009	4009	T252C477K006(1)S
470.0	C	20	2.0	10	0010	0110	0210	0310	2010	3010	4010	T252C477M006(1)S
680.0	D	10	5.0	10	0011	0111	0211	0311	2011	3011	4011	T252D687K006(1)S
680.0	D	20	5.0	10	0012	0112	0212	0312	2012	3012	4012	T252D687M006(1)S
820.0	D	10	5.0	10	0013	0113	0213	0313	2013	3013	4013	T252D827K006(1)S
1000.0	D	10	5.0	10	0014	0114	0214	0314	2014	3014	4014	T252D108K006(1)S
1000.0	D	20	5.0	10	0015	0115	0215	0315	2015	3015	4015	T252D108M006(1)S
<b>10 VOLT RATING AT 85°C</b>												
6.8	A	10	.5	6	0016	0116	0216	0316	2016	3016	4016	T252A685K010(1)S
6.8	A	20	.5	6	0017	0117	0217	0317	2017	3017	4017	T252A685M010(1)S
8.2	A	10	.5	6	0018	0118	0218	0318	2018	3018	4018	T252A825K010(1)S
47.0	B	10	1.0	6	0019	0119	0219	0319	2019	3019	4019	T252B476K010(1)S
47.0	B	20	1.0	6	0020	0120	0220	0320	2020	3020	4020	T252B476M010(1)S
56.0	B	10	1.0	6	0021	0121	0221	0321	2021	3021	4021	T252B566K010(1)S
68.0	B	10	1.0	6	0022	0122	0222	0322	2022	3022	4022	T252B686K010(1)S
68.0	B	20	1.0	6	0023	0123	0223	0323	2023	3023	4023	T252B686M010(1)S
82.0	B	10	1.0	6	0024	0124	0224	0324	2024	3024	4024	T252B826K010(1)S
220.0	C	10	1.0	8	0025	0125	0225	0325	2025	3025	4025	T252C227K010(1)S
220.0	C	20	1.0	8	0026	0126	0226	0326	2026	3026	4026	T252C227M010(1)S
270.0	C	10	2.0	8	0027	0127	0227	0327	2027	3027	4027	T252C277K010(1)S
390.0	D	10	2.0	10	0028	0128	0228	0328	2028	3028	4028	T252D397K010(1)S
470.0	D	10	4.0	10	0029	0129	0229	0329	2029	3029	4029	T252D477K010(1)S
470.0	D	20	4.0	10	0030	0130	0230	0330	2030	3030	4030	T252D477M010(1)S
560.0	D	10	4.0	10	0031	0131	0231	0331	2031	3031	4031	T252D567K010(1)S
<b>15 VOLT RATING AT 85°C</b>												
4.7	A	10	.5	4	0032	0132	0232	0332	2032	3032	4032	T252A475K015(1)S
4.7	A	20	.5	4	0033	0133	0233	0333	2033	3033	4033	T252A475M015(1)S
5.6	A	10	.5	4	0034	0134	0234	0334	2034	3034	4034	T252A565K015(1)S
33.0	B	10	1.0	6	0035	0135	0235	0335	2035	3035	4035	T252B336K015(1)S
33.0	B	20	1.0	6	0036	0136	0236	0336	2036	3036	4036	T252B336M015(1)S
39.0	B	10	1.0	6	0037	0137	0237	0337	2037	3037	4037	T252B396K015(1)S
150.0	C	10	1.0	8	0038	0138	0238	0338	2038	3038	4038	T252C157K015(1)S
150.0	C	20	1.0	8	0039	0139	0239	0339	2039	3039	4039	T252C157M015(1)S
180.0	C	10	2.0	8	0040	0140	0240	0340	2040	3040	4040	T252C187K015(1)S
220.0	D	10	2.0	8	0041	0141	0241	0341	2041	3041	4041	T252D227K015(1)S
220.0	D	20	2.0	8	0042	0142	0242	0342	2042	3042	4042	T252D227M015(1)S
270.0	D	10	2.0	8	0043	0143	0243	0343	2043	3043	4043	T252D277K015(1)S
330.0	D	10	2.0	8	0044	0144	0244	0344	2044	3044	4044	T252D337K015(1)S
330.0	D	20	2.0	8	0045	0145	0245	0345	2045	3045	4045	T252D337M015(1)S

(1) To complete Part Number, insert Failure Rate Symbol in the 13th Character as shown on Page 31.

**RATINGS & PART NUMBER REFERENCE**

CAPACITANCE µF	CASE SIZE	CAPACITANCE TOLERANCE ±%	KEMET T252 SERIES				MIL-PRF-39003 (CSR33) CAPACITORS					
			D.C. LEAKAGE µA@25°C MAX.	MAX. DISSI- PATION FACTOR %@25°C, 120Hz	DASH NUMBER REFERENCE FAILURE RATE LEVEL (%/1000 HRS.)				MIL-PRF-39003/6C GRADED			KEMET EQUIVALENT MILITARY PART NUMBER
					MIL-PRF-39003/6C EXPONENTIAL							
					M (1.0)	P (0.1)	R (0.01)	S (0.001)	B (0.1)	C (0.01)	D (0.001)	
<b>20 VOLT RATING AT 85°C</b>												
2.7	A	10	.5	4	0046	0146	0246	0346	2046	3046	4046	T252A275K020(1)S
3.3	A	10	.5	4	0047	0147	0247	0347	2047	3047	4047	T252A335K020(1)S
3.3	A	20	.5	4	0048	0148	0248	0348	2048	3048	4048	T252A335M020(1)S
3.9	A	10	.5	4	0049	0149	0249	0349	2049	3049	4049	T252A395K020(1)S
18.0	B	10	1.0	6	0050	0150	0250	0350	2050	3050	4050	T252B186K020(1)S
22.0	B	10	1.0	6	0051	0151	0251	0351	2051	3051	4051	T252B226K020(1)S
22.0	B	20	1.0	6	0052	0152	0252	0352	2052	3052	4052	T252B226M020(1)S
27.0	B	10	1.0	6	0053	0153	0253	0353	2053	3053	4053	T252B276K020(1)S
56.0	C	10	1.0	6	0054	0154	0254	0354	2054	3054	4054	T252C566K020(1)S
68.0	C	10	1.0	6	0055	0155	0255	0355	2055	3055	4055	T252C686K020(1)S
68.0	C	20	1.0	6	0056	0156	0256	0356	2056	3056	4056	T252C686M020(1)S
82.0	C	10	1.0	6	0057	0157	0257	0357	2057	3057	4057	T252C826K020(1)S
100.0	C	10	1.0	6	0058	0158	0258	0358	2058	3058	4058	T252C107K020(1)S
100.0	C	20	1.0	6	0059	0159	0259	0359	2059	3059	4059	T252C107M020(1)S
120.0	C	10	1.0	6	0060	0160	0260	0360	2060	3060	4060	T252C127K020(1)S
150.0	D	10	2.0	8	0061	0161	0261	0361	2061	3061	4061	T252D157K020(1)S
150.0	D	20	2.0	8	0062	0162	0262	0362	2062	3062	4062	T252D157M020(1)S
180.0	D	10	2.0	8	0063	0163	0263	0363	2063	3063	4063	T252D187K020(1)S
<b>35 VOLT RATING AT 85°C</b>												
1.8	A	10	.5	4	0064	0164	0264	0364	2064	3064	4064	T252A185K035(1)S
8.2	B	10	1.0	6	0065	0165	0265	0365	2065	3065	4065	T252B825K035(1)S
10.0	B	10	1.0	6	0066	0166	0266	0366	2066	3066	4066	T252B106K035(1)S
10.0	B	20	1.0	6	0067	0167	0267	0367	2067	3067	4067	T252B106M035(1)S
33.0	C	10	1.0	6	0068	0168	0268	0368	2068	3068	4068	T252C336K035(1)S
33.0	C	20	1.0	6	0069	0169	0269	0369	2069	3069	4069	T252C336M035(1)S
39.0	C	10	1.0	6	0070	0170	0270	0370	2070	3070	4070	T252C396K035(1)S
47.0	C	10	1.0	6	0071	0171	0271	0371	2071	3071	4071	T252C476K035(1)S
47.0	C	20	1.0	6	0072	0172	0272	0372	2072	3072	4072	T252C476M035(1)S
56.0	D	10	2.0	6	0073	0173	0273	0373	2073	3073	4073	T252D566K035(1)S
68.0	D	10	2.0	6	0074	0174	0274	0374	2074	3074	4074	T252D686K035(1)S
68.0	D	20	2.0	6	0075	0175	0275	0375	2075	3075	4075	T252D686M035(1)S
<b>50 VOLT RATING AT 85°C</b>												
1.2	A	10	.5	4	0076	0176	0276	0376	2076	3076	4076	T252A125K050(1)S
1.5	A	10	.5	4	0077	0177	0277	0377	2077	3077	4077	T252A155K050(1)S
1.5	A	20	.5	4	0078	0178	0278	0378	2078	3078	4078	T252A155M050(1)S
5.6	B	10	1.0	4	0079	0179	0279	0379	2079	3079	4079	T252B565K050(1)S
6.8	B	10	1.0	6	0080	0180	0280	0380	2080	3080	4080	T252B685K050(1)S
6.8	B	20	1.0	6	0081	0181	0281	0381	2081	3081	4081	T252B685M050(1)S
22.0	C	10	1.0	6	0082	0182	0282	0382	2082	3082	4082	T252C226K050(1)S
22.0	C	20	1.0	6	0083	0183	0283	0383	2083	3083	4083	T252C226M050(1)S
27.0	C	10	1.0	6	0084	0184	0284	0384	2084	3084	4084	T252C276K050(1)S
33.0	D	10	1.0	6	0085	0185	0285	0385	2085	*	*	T252D336K050(1)S
33.0	D	20	1.0	6	0086	0186	0286	0386	2086	*	*	T252D336M050(1)S
39.0	D	10	1.0	6	0087	0187	0287	0387	2087	*	*	T252D396K050(1)S

(1) To complete Part Number, insert Failure Rate Symbol in the 13th Character as shown on Page 31.  
\*NOTE: C Failure rate not QPL for -3085 thru 3087.  
D Failure rate not QPL for -4085 thru 4087.

T252 Series Tantalum  
Hermetically Sealed

KEMET's T262 (CSR21) per MIL-C-39003/09 hermetically sealed solid tantalum capacitors are similar to KEMET's popular T212 (CSR13 per MIL-PRF-39003/01) capacitors shown on page 6, but offer higher ripple current handling capability and exhibit exceptionally low Equivalent Series Resistance (ESR).

The T262 Series is ideal for filtering applications and in military power supplies where low ESR is essential. T262s are 100% surge current tested and their dissipation factor is screened at 1kHz. Available in C & D case sizes only, 5.6 to 330  $\mu$ F, 6 to 50 VDC.

## CAPACITOR OUTLINE DRAWINGS



## DIMENSIONS — INCHES & (MILLIMETERS)

CASE SIZE	UNINSULATED		INSULATED		B $\pm 0.002$ ( $\pm .05$ )	C MAX.
	D $\pm 0.005$ ( $\pm .13$ )	L $\pm 0.031$ ( $\pm .79$ )	D $\pm 0.010$ ( $\pm .25$ )	L $\pm 0.031$ ( $\pm .79$ )		
C	0.279 (7.09)	0.650 (16.51)	0.289 (7.34)	0.686 (17.42)	0.025 (.64)	0.822 (20.88)
D	0.341 (8.66)	0.750 (19.05)	0.351 (8.92)	0.786 (19.96)	0.025 (.64)	0.922 (23.42)

## ORDERING INFORMATION



For Military Marking Information, see page 4.





**RATINGS & PART NUMBER REFERENCE**

CAPACITANCE μF	CASE SIZE	CAPACITANCE TOLERANCE ±%	KEMET T262 SERIES				MIL-PRF-39003/09 (CSR21) CAPACITORS							KEMET EQUIVALENT MILITARY PART NUMBER
			D.C. LEAKAGE μA@25°C MAX.	MAX. DISSI- PATION FACTOR %@25°C, 1 kHz	MAX. ESR Ω@25°C, 100 kHz	MAX. RIPPLE CURRENT Arms@25°C 40 kHz	DASH NUMBER REFERENCE FAILURE RATE LEVEL (%/1000 HRS.)							
							MIL-PRF-39003/9D EXPONENTIAL				MIL-PRF-39003/9D GRADED			
							M (1.0)	P (0.1)	R (0.01)	S (0.001)	B (0.1)	C (0.01)	D (0.001)	
<b>35 VOLT RATING AT 85°C — 23 VOLT RATING AT 125°C</b>														
22.0	C	5	4.0	4	.160	2.1	0053	0153	0253	0353	2053	3053	4053	T262C226J035(1)S
22.0	C	10	4.0	4	.160	2.1	0054	0154	0254	0354	2054	3054	4054	T262C226K035(1)S
22.0	C	20	4.0	4	.160	2.1	0055	0155	0255	0355	2055	3055	4055	T262C226M035(1)S
27.0	D	5	4.5	4	.145	2.4	0056	0156	0256	0356	2056	3056	4056	T262D276J035(1)S
27.0	D	10	4.5	4	.145	2.4	0057	0157	0257	0357	2057	3057	4057	T262D276K035(1)S
33.0	D	5	5.5	5	.130	2.5	0058	0158	0258	0358	2058	3058	4058	T262D336J035(1)S
33.0	D	10	5.5	5	.130	2.5	0059	0159	0259	0359	2059	3059	4059	T262D336K035(1)S
33.0	D	20	5.5	5	.130	2.5	0060	0160	0260	0360	2060	3060	4060	T262D336M035(1)S
39.0	D	5	7.0	5	.120	2.6	0061	0161	0261	0361	2061	3061	4061	T262D396J035(1)S
39.0	D	10	7.0	5	.120	2.6	0062	0162	0262	0362	2062	3062	4062	T262D396K035(1)S
47.0	D	5	8.0	5	.110	2.7	0063	0163	0263	0363	2063	3063	4063	T262D476J035(1)S
47.0	D	10	8.0	5	.110	2.7	0064	0164	0264	0364	2064	3064	4064	T262D476K035(1)S
47.0	D	20	8.0	5	.110	2.7	0065	0165	0265	0365	2065	3065	4065	T262D476M035(1)S
<b>50 VOLT RATING AT 85°C — 33 VOLT RATING AT 125°C</b>														
5.6	C	5	2.2	3	.300	1.5	0066	0166	0266	0366	2066	3066	4066	T262C565J050(1)S
5.6	C	10	2.2	3	.300	1.5	0067	0167	0267	0367	2067	3067	4067	T262C565K050(1)S
6.8	C	5	2.2	3	.275	1.6	0068	0168	0268	0368	2068	3068	4068	T262C685J050(1)S
6.8	C	10	2.2	3	.275	1.6	0069	0169	0269	0369	2069	3069	4069	T262C685K050(1)S
6.8	C	20	2.2	3	.275	1.6	0070	0170	0270	0370	2070	3070	4070	T262C685M050(1)S
8.2	C	5	2.5	3	.250	1.6	0071	0171	0271	0371	2071	3071	4071	T262C825J050(1)S
8.2	C	10	2.5	3	.250	1.6	0072	0172	0272	0372	2072	3072	4072	T262C825K050(1)S
10.0	C	5	2.5	3	.230	1.7	0073	0173	0273	0373	2073	3073	4073	T262C106J050(1)S
10.0	C	10	2.5	3	.230	1.7	0074	0174	0274	0374	2074	3074	4074	T262C106K050(1)S
10.0	C	20	2.5	3	.230	1.7	0075	0175	0275	0375	2075	3075	4075	T262C106M050(1)S
12.0	C	5	3.0	3	.210	1.8	0076	0176	0276	0376	2076	3076	4076	T262C126J050(1)S
12.0	C	10	3.0	3	.210	1.8	0077	0177	0277	0377	2077	3077	4077	T262C126K050(1)S
15.0	C	5	4.0	3	.190	1.9	0078	0178	0278	0378	2078	3078	4078	T262C156J050(1)S
15.0	C	10	4.0	3	.190	1.9	0079	0179	0279	0379	2079	3079	4079	T262C156K050(1)S
15.0	C	20	4.0	3	.190	1.9	0080	0180	0280	0380	2080	3080	4080	T262C156M050(1)S
18.0	C	5	4.5	4	.175	2.0	0081	0181	0281	0381	2081	3081	4081	T262C186J050(1)S
18.0	C	10	4.5	4	.175	2.0	0082	0182	0282	0382	2082	3082	4082	T262C186K050(1)S
22.0	D	5	5.5	4	.160	2.3	0083	0183	0283	0383	2083	3083	4083	T262D226J050(1)S
22.0	D	10	5.5	4	.160	2.3	0084	0184	0284	0384	2084	3084	4084	T262D226K050(1)S
22.0	D	20	5.5	4	.160	2.3	0085	0185	0285	0385	2085	3085	4085	T262D226M050(1)S

(1) To complete the T262 Series Part Number, insert Failure Rate Symbol in the 13th Character as shown on Page 34.

T216 and T256 are KEMET's new designation for MIL-Style CSS13 and CSS33 capacitors. The T216/T256 Series is qualified to all failure rates per MIL-PRF-39003/10. Products meeting this specification have passed rigorous test requirements and are used in space applications or other equally demanding environments.

The T216 is available in capacitance ratings from .15 µF to 330 µF; voltage ratings from 6 VDC to 75 VDC. The T256 is available in capacitance ratings from 1.2 µF to 1000 µF with voltage ratings of 6 VDC to 50 VDC.

These capacitors provide circuit designers an excellent choice for blocking, bypass, decoupling, filtering and timing applications.

**CAPACITOR OUTLINE DRAWINGS**



**DIMENSIONS — INCHES & (MILLIMETERS)**

CASE SIZE	UNINSULATED		INSULATED		B ±0.002 (±.05)	C MAX.
	D ±0.005 (±.13)	L ±0.031 (±.79)	D ±0.010 (±.25)	L ±0.031 (±.79)		
A	0.125 (3.18)	0.250 (6.35)	0.135 (3.43)	0.286 (7.26)	0.020 (.51)	0.422 (10.72)
B	0.175 (4.45)	0.438 (11.13)	0.185 (4.70)	0.474 (12.04)	0.020 (.51)	0.610 (15.49)
C	0.279 (7.09)	0.650 (16.51)	0.289 (7.34)	0.686 (17.42)	0.025 (.64)	0.822 (20.88)
D	0.341 (8.66)	0.750 (19.05)	0.351 (8.92)	0.786 (19.96)	0.025 (.64)	0.922 (23.42)

**ORDERING INFORMATION**



T216/T256 Series Tantalum Hermetically Sealed

### MIL-PRF-39003/10 ORDERING INFORMATION

#### M39003/10 — 3078S



### MARKING INFORMATION

#### A CASE

39003	Military specification number
10 - K	Specification sheet number and trademark
3078S	Military dash number and "S" for sleeved
+J310	Polarity, "J" for JAN date code (1st digit indicates year and the next two digits indicate the week)
XYA	Lot, unique lot code

#### C & D CASE

M39003	Military specification number
10-2049SJ	Specification sheet number, military dash number and "J" for Jan.
+6.8 μF	Positive terminal identifier and capacitance value
10% 35V	Capacitance tolerance and voltage rating
31433	Source code
0310 NAB K	Date code, lot code, unique lot code, and trademark

#### B CASE

M39003	Military specification number
10 -	Specification sheet number
3082SJ	Military dash number and "J" for JAN
31433	Source code
+310	Polarity, date code (1st digit indicates year and the next two digits indicate the week)
NABK	Lot code, unique lot code and trademark.

NOTE: Marking will include S or U after the MIL dash number, a third letter following lot symbol or lot code designates a unique lot identifier, and a black band on negative end of case.

■ Black band on negative end.

### T216/(CSS13) RATINGS & PART NUMBER REFERENCE

CAPACITANCE μF	KEMET T216 SERIES								MIL-PRF-39003 (CSS13) CAPACITORS	
	CASE SIZE	KEMET EQUIVALENT PART NUMBER FOR CSS13 CAPACITORS	DC LEAKAGE			MAX. DISSIPATION FACTOR		MAX. ESR Ω @ 25°C, 100 kHz	DASH NUMBER REFERENCE FAILURE RATE LEVEL (%/1000 HRS) MIL-PRF-39003/10 GRADED	
			μA @ +25° MAX.	μA @ +85° MAX.	μA @ +125° MAX.	% @ -55°C +25°C MAX.	% @ -85°C +125°C MAX.		B (0.1)	C (0.01)
<b>6 VOLT RATING AT 85° C</b>										
5.6	A	T216A565K006CS	0.3	6.0	7.5	4	4	0.90	2001(1)	3001(1)
6.8	A	T216A685K006CS	0.3	6.0	7.5	6	6	0.80	2002(1)	3002(1)
47.0	B	T216B476K006CS	1.5	24.0	30.0	6	6	0.24	2003(1)	3003(1)
56.0	B	T216B566K006CS	1.5	24.0	30.0	6	6	0.24	3004(1)	3004(1)
150.0	C	T216C157K006CS	4.5	90.0	113.0	8	8	0.09	2005(1)	3005(1)
180.0	C	T216C187K006CS	5.5	110.0	138.0	8	8	0.08	3206(1)	3006(1)
270.0	D	T216D277K006CS	6.5	130.0	163.0	8	8	0.07	2007(1)	3007(1)
330.0	D	T216D337K006CS	7.5	150.0	188.0	8	8	0.06	2008(1)	3008(1)
<b>10 VOLT RATING AT 85° C</b>										
3.9	A	T216A395K010CS	0.3	6.0	7.5	4	4	1.00	2009(1)	3009(1)
4.7	A	T216A475K010CS	0.4	7.0	8.8	4	4	0.90	2010(1)	3010(1)
27.0	B	T216B276K010CS	2.0	40.0	50.0	6	6	0.25	2011(1)	3011(1)
33.0	B	T216B336K010CS	2.5	50.0	63.0	6	6	0.24	2012(1)	3012(1)
39.0	B	T216B396K010CS	2.5	50.0	63.0	6	6	0.24	2013(1)	3013(1)
82.0	C	T216C826K010CS	4.0	80.0	100.0	6	6	0.12	2014(1)	3014(1)
100.0	C	T216C107K010CS	5.0	100.0	125.0	8	8	0.11	2015(1)	3015(1)
120.0	C	T216C127K010CS	6.0	120.0	150.0	8	8	0.10	2016(1)	3016(1)
180.0	D	T216D187K010CS	9.0	180.0	226.0	8	8	0.08	2017(1)	3017(1)
220.0	D	T216D227K010CS	10.0	200.0	250.0	8	8	0.07	2018(1)	3018(1)

(1) To complete, insert S for sleeved or U for unsleeved, if "U" ordered also use C-0100.





**RATINGS & PART NUMBER REFERENCE T216/(CSS13) (Cont'd)**

CAPACITANCE µF	KEMET T216 SERIES								MIL-PRF-39003 (CSS13) CAPACITORS	
	CASE SIZE	KEMET EQUIVALENT PART NUMBER FOR CSS13 CAPACITORS	DC LEAKAGE			MAX. DISSIPATION FACTOR		MAX. ESR Ω @ 25°C, 100 kHz	DASH NUMBER REFERENCE	
			µA @ +25° MAX.	µA @ +85° MAX.	µA @ +125° MAX.	% @ -55°C +25°C MAX.	% @ -85°C +125°C MAX.		FAILURE RATE LEVEL (%/1000 HRS)	
			MIL-PRF-39003/10 GRADED							
								B (0.1)	C (0.01)	
<b>75 VOLT RATING AT 85° C</b>										
0.15	A	T216A154K075CS	0.3	5.0	6.3	2	4	4.4	2097(1)	3097(1)
0.18	A	T216A184K075CS	0.3	5.0	6.3	2	4	4.0	2098(1)	3098(1)
0.22	A	T216A224K075CS	0.3	5.0	6.3	2	4	3.5	2099(1)	3099(1)
0.27	A	T216A274K075CS	0.3	5.0	6.3	2	4	3.1	2100(1)	3100(1)
0.33	A	T216A334K075CS	0.3	5.0	6.3	2	4	2.8	2101(1)	3101(1)
0.39	A	T216A394K075CS	0.3	5.0	6.3	2	4	2.6	2102(1)	3102(1)
0.47	A	T216A474K075CS	0.3	5.0	6.3	2	4	2.4	2103(1)	3103(1)
0.56	A	T216A564K075CS	0.3	5.0	6.3	2	4	2.25	2104(1)	3104(1)
0.68	A	T216A684K075CS	0.3	5.0	6.3	2	4	2.10	2105(1)	3105(1)
0.82	B	T216B824K075CS	0.3	5.0	6.3	2	4	1.47	2106(1)	3106(1)
1.0	B	T216B105K075CS	0.4	5.0	6.3	2	4	1.40	2107(1)	3107(1)
1.2	B	T216B125K075CS	0.4	5.0	6.3	4	4	1.33	2108(1)	3108(1)
1.5	B	T216B155K075CS	0.6	10.0	13.0	4	4	1.06	2109(1)	3109(1)
1.8	B	T216B185K075CS	0.7	10.0	13.0	4	4	0.92	2110(1)	3110(1)
2.2	B	T216B225K075CS	0.8	15.0	19.0	4	4	0.80	2111(1)	3111(1)
2.7	B	T216B275K075BS	1.0	15.0	19.0	4	4	0.68	2112(1)	3112(1)
3.3	B	T216B335K075BS	1.2	20.0	25.0	4	4	0.62	2113(1)	3113(1)
3.9	B	T216B395K075BS	1.5	20.0	25.0	4	4	0.56	2114(1)	3114(1)
4.7	C	T216C475K075BS	3.0	60.0	75.0	4	4	0.47	2115(1)	3115(1)
5.6	C	T216C565K075BS	3.0	60.0	75.0	4	4	0.44	2116(1)	3116(1)
6.8	C	T216C685K075BS	5.0	100.0	125.0	6	6	0.44	2117(1)	3117(1)
8.2	C	T216C825K075BS	5.0	100.0	125.0	6	6	0.36	2118(1)	3118(1)
10.0	C	T216C106K075BS	5.0	100.0	125.0	6	6	0.33	2119(1)	3119(1)
12.0	D	T216D126K075BS	5.0	100.0	125.0	6	6	0.26	2120(1)	3120(1)
15.0	D	T216D156K075BS	7.0	140.0	175.0	6	6	0.23	2121(1)	3121(1)

**T256/(CSS33)  
RATINGS AND PART NUMBER REFERENCE**

CAPACITANCE µF	KEMET T256 SERIES								MIL-PRF-39003 (CSS33) CAPACITORS	
	CASE SIZE	KEMET EQUIVALENT PART NUMBER FOR CSS33 CAPACITORS	DC LEAKAGE			MAX. DISSIPATION FACTOR		MAX. ESR Ω @ 25°C, 100 kHz	DASH NUMBER REFERENCE	
			µA @ +25° MAX.	µA @ +85° MAX.	µA @ +125° MAX.	% @ -55°C +25°C MAX.	% @ -85°C +125°C MAX.		FAILURE RATE LEVEL (%/1000 HRS)	
			MIL-PRF-39003/10 GRADED							
								B (0.1)	C (0.01)	
<b>6 VOLT RATING AT 85° C</b>										
10.0	A	T256A106K006CS	0.5	2.0	2.0	6	6	0.70	2500(1)	3500(1)
12.0	A	T256A126K006CS	0.5	2.0	2.0	6	6	0.60	2501(1)	3501(1)
100.0	B	T256B107K006CS	1.0	3.0	3.0	8	8	0.20	2502(1)	3502(1)
330.0	C	T256B107K006CS	2.0	8.0	8.0	8	8	0.065	2503(1)	3503(1)
390.0	C	T256C337K006BS	2.0	8.0	8.0	10	10	0.065	2504(1)	3504(1)
470.0	C	T256C397K006BS	2.0	8.0	8.0	10	10	0.060	2505(1)	3505(1)
680.0	D	T256D687K006CS	5.0	10.0	10.0	10	10	0.060	2506(1)	3506(1)
820.0	D	T256D827K006CS	5.0	10.0	10.0	10	10	0.055	2507(1)	3507(1)
1000.0	D	T256D108K006CS	5.0	10.0	10.0	10	10	0.050	2508(1)	3508(1)
<b>10 VOLT RATING AT 85° C</b>										
6.8	A	T256A685K010CS	0.5	2.0	2.0	6	6	0.80	2509(1)	3509(1)
8.2	A	T256A825K010CS	0.5	2.0	2.0	6	6	0.70	2510(1)	3510(1)
47.0	B	T256B476K010CS	1.0	2.0	2.0	6	6	0.22	2511(1)	3511(1)
56.0	B	T256B566K010CS	1.0	4.0	4.0	6	6	0.20	2512(1)	3512(1)
68.0	B	T256B686K010CS	1.0	4.0	4.0	6	6	0.18	2513(1)	3513(1)
82.0	B	T256B826K010CS	1.0	4.0	4.0	6	6	0.15	2514(1)	3514(1)
220.0	C	T256C227K010BS	1.0	7.0	7.0	2	2	0.090	2515(1)	3515(1)
270.0	C	T256C277K010BS	2.0	10.0	10.0	2	2	0.075	2516(1)	3516(1)
390.0	D	T256D397K010CS	2.0	16.0	16.0	10	10	0.070	2517(1)	3517(1)
470.0	D	T256D477K010CS	4.0	16.0	16.0	10	10	0.065	2518(1)	3518(1)
560.0	D	T256D567K010CS	4.0	16.0	16.0	10	10	0.060	2519(1)	3519(1)

(1) To complete, insert S for sleeved or U for unsleeved, if "U" ordered also use C-0100.

RATINGS AND PART NUMBER REFERENCE T256/(CSS33) (Cont'd)

CAP μF	CASE SIZE	KEMET EQUIVALENT PART NUMBER FOR CSS33 CAPACITORS	KEMET T256 SERIES						MIL-PRF-39003 (CSS33) CAPACITORS		
			DC LEAKAGE			MAX. DISSIPATION FACTOR			MAX. ESR Ω @ 25°C, 100 kHz	DASH NUMBER REFERENCE FAILURE RATE LEVEL (%/1000 HRS) MIL-PRF-39003/10 GRADED	
			μA @ +25° MAX.	μA @ +85° MAX.	μA @ +125° MAX.	% @ -55°C +25°C MAX.	% @ -85°C +125°C MAX.	B (0.1)		C (0.01)	
<b>15 VOLT RATING AT 85° C</b>											
4.7	A	T256A475K015CS	0.5	2.0	2.0	4	4	0.90	2520(1)	3520(1)	
5.6	A	T256A565K015CS	0.5	2.0	2.0	4	4	0.80	2521(1)	3521(1)	
33.0	B	T256B336K015CS	1.0	2.0	2.0	6	6	0.24	2522(1)	3522(1)	
39.0	B	T256B396K015CS	1.0	2.0	2.0	6	6	0.22	2523(1)	3523(1)	
150.0	C	T256C157K015BS	1.0	7.0	7.0	8	8	0.10	2524(1)	3524(1)	
180.0	C	T256C187K015BS	2.0	10.0	10.0	8	8	0.09	2525(1)	3525(1)	
220.0	D	T256D227K015BS	2.0	10.0	10.0	8	8	0.07	2526(1)	3526(1)	
270.0	D	T256D277K015BS	2.0	16.0	16.0	8	8	0.065	2527(1)	3527(1)	
330.0	D	T256D337K015BS	2.0	16.0	16.0	8	8	0.060	2528(1)	3528(1)	
<b>20 VOLT RATING AT 85° C</b>											
2.7	A	T256A275K020CS	0.5	2.0	2.0	4	4	1.15	2529(1)	3529(1)	
3.3	A	T256A335K020CS	0.5	2.0	2.0	4	4	0.95	2530(1)	3530(1)	
3.9	A	T256A395K020CS	0.5	2.0	2.0	4	4	0.90	2531(1)	3531(1)	
18.0	B	T256B186K020CS	1.0	2.0	2.0	6	6	0.27	2532(1)	3532(1)	
22.0	B	T256B226K020BS	1.0	2.0	2.0	6	6	0.26	2533(1)	3533(1)	
27.0	B	T256B276K020BS	1.0	2.0	2.0	6	6	0.24	2534(1)	3534(1)	
56.0	C	T256C566K020CS	1.0	1.0	10.0	6	6	0.15	2535(1)	3535(1)	
68.0	C	T256C686K020CS	1.0	10.0	10.0	6	6	0.14	2536(1)	3536(1)	
82.0	C	T256C826K020BS	1.0	10.0	10.0	6	6	0.12	2537(1)	3537(1)	
100.0	C	T256C107K020BS	1.0	10.0	10.0	6	6	0.10	2538(1)	3538(1)	
120.0	C	T256C127K020BS	1.0	10.0	10.0	6	6	0.09	2539(1)	3539(1)	
150.0	D	T256D157K020BS	2.0	10.0	10.0	8	8	0.08	2540(1)	3540(1)	
180.0	D	T256D187K020BS	2.0	10.0	10.0	8	8	0.07	2541(1)	3541(1)	
<b>35 VOLT RATING AT 85° C</b>											
1.8	A	T256A185K035BS	0.5	2.0	2.0	4	4	0.20	2542(1)	3542(1)	
8.2	B	T256B825K035BS	1.0	2.0	2.0	6	6	0.40	2543(1)	3543(1)	
10.0	B	T256B106K035BS	1.0	2.0	2.0	6	6	0.35	2544(1)	3544(1)	
33.0	C	T256C336K035BS	1.0	5.0	5.0	6	6	0.19	2545(1)	3545(1)	
39.0	C	T256C396K035BS	1.0	5.0	5.0	6	6	0.17	2546(1)	3546(1)	
47.0	C	T256C476K035BS	1.0	5.0	5.0	6	6	0.15	2547(1)	3547(1)	
56.0	D	T256D566K035BS	2.0	10.0	10.0	6	6	0.13	2548(1)	3548(1)	
68.0	D	T256D686K035BS	2.0	10.0	10.0	6	6	0.12	2549(1)	3549(1)	
<b>50 VOLT RATING AT 85° C</b>											
1.2	A	T256A125K050BS	0.5	2.0	2.0	4	4	1.30	2550(1)	3550(1)	
1.5	A	T256A155KL050BS	0.5	2.0	2.0	4	4	1.20	2551(1)	3551(1)	
5.6	B	T256B565K050BS	1.0	2.0	2.0	4	4	0.47	2552(1)	3552(1)	
6.8	B	T256B685K050BS	1.0	2.0	2.0	6	6	0.43	2553(1)	3553(1)	
22.0	C	T256C226K050BS	1.0	5.0	5.0	6	6	0.22	2554(1)	3554(1)	
27.0	C	T256C276K050BS	1.0	5.0	5.0	6	6	0.20	2555(1)	3555(1)	
33.0	D	T256D336K050BS	1.0	9.0	9.0	6	6	0.18	2556(1)	3556(1)	
39.0	D	T256D396K050BS	1.0	9.0	9.0	6	6	0.16	2557(1)	3557(1)	

T216/T256 Series Tantalum  
Hermetically Sealed

(1) To complete, insert S for sleeved or U for unsleeved, if "U" ordered also use C-0100.