

# TANTALUM CAPACITOR

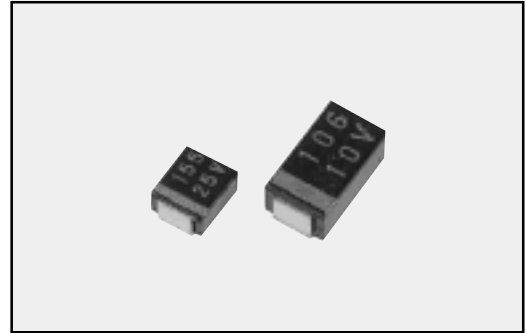
## TCM Family

**TCM Series: Standard Capacitance**

**TCMS Series: Extended Capacitance**

### Application:

Mobile Telecom Applications, Camcorder, Digital Still Camera, LCD TV, HICs and all kind of devices that require miniaturization and surface mouting.

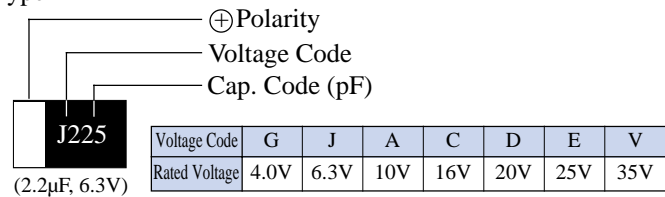


### Features:

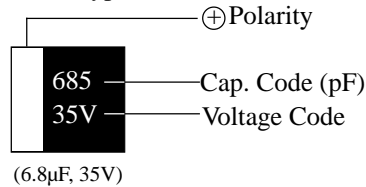
- High Volumetric efficiency
- Capacitance 0.22μF to 330μF
- Meets or Exceeds the International Standards like EIA-535BAAC, QC300801/US001 etc.
- Precise Molding & Smooth Surface Enables Hassle Free Automatic Mounting
- Solderability 260°C 10 sec. Dip

### Marking:

(1) A Type



(2) B2, C1, E Type



### Performance Specifications

Series	TCM	TCMS
Operating Temp. Range	-55 ~ +125°C	
Max. Operating Temp. at RV	+85°C	
Standard Capacitance Rating	See Page # 19	
Capacitance Tolerance	±20%(M)	
Dissipation Factor		
ESR	See 'TCM series standard P/N & data' - Page # 20	See 'TCMS series standard P/N & data' - Page # 21
DC Leakage Current		
Solderability	260°C 10 sec (Dip)	
Humidity Test	60°C (TCM), 40°C (TCMS), 90 ~ 95% RH for 500Hrs.	
High temp. Load Test	85°C, Rated Voltage Applied for 2,000Hrs. or 125°C, De-rated Voltage Applied for 2,000Hrs.	
Failure Rate	1% or less / 1,000Hrs. (60%CL)	
Conformity	JIS-C-5101-1, EIA-535BAAC etc.	

### Standard Type Code and Dimensions:



Type Code	EIA Code	Unit : mm					Unit : Inch				
		L	W	H	a	b	L	W	H	a	b
A	3216	±0.2	±0.2	±0.2	±0.2	±0.2	±0.008	±0.008	±0.008	±0.008	±0.008
B2	3528	3.2	1.6	1.6	0.8	1.2	0.126	0.063	0.063	0.031	0.047
C1	6032	3.5	2.8	1.9	0.8	2.2	0.138	0.110	0.075	0.031	0.087
E	7343	6.0	3.2	2.5	1.2	2.2	0.236	0.126	0.098	0.047	0.087
		7.3	4.3	2.9	1.3	2.4	0.287	0.169	0.114	0.051	0.094

# TANTALUM CAPACITOR

## TCM: Standard Capacitance Ratings and Type Codes

R.V.(V)		4.0			6.3			10			16			20			25			35		
Cap.(μF)	Symbol	4R0			6R3			010			016			020			025			035		
0.22	R22																					A
0.33	R33																					A
0.47	R47																				A	
0.68	R68															A						
1.0	1R0													A								
1.5	1R5									A											B2	
2.2	2R2							A								B2		C1				C1
3.3	3R3				A									B2		C1					C1	C1
4.7	4R7				A					B2			C1			C1					C1	
6.8	6R8						B2			C1			C1			C1						
10	100			B2			C1			C1			C1									
15	150		C1				C1			C1			E									
22	220		C1				C1			E			E									
33	330		C1				E			E												
47	470	E					E															
68	680	E																				

## TCMS: Standard Capacitance Ratings and Type Codes

R.V.(V)		4.0			6.3			10			16			20			25			35		
Cap.(μF)	Symbol	4R0			6R3			010			016			020			025			035		
0.47	R47																					A
0.68	R68																					A
1.0	1R0																				A	A
1.5	1R5															A					A	B2
2.2	2R2												A			A		B2	A			B2
3.3	3R3									A			A		B2	A		B2				B2
4.7	4R7						A			A			B2	A		B2					B2	C1
6.8	6R8				A			A		B2	A		B2	A		B2		C1				C1
10	100				A		B2	A		B2	A		B2	A	C1	B2		C1				
15	150		B2	A			B2	A		B2	A		C1	B2		C1						
22	220		B2	A			B2	A		C1	B2	A		C1	B2		C1					
33	330		B2	A			C1	B2	A		C1	B2		E	C1	B2						
47	470		C1	B2	A		C1	B2	A	E	C1	B2		E	C1							
68	680		C1	B2	A	E	C1	B2		E	C1			E								
100	101	E	C1	B2		E	C1	B2		E	C1			E								
150	151	E	C1	B2		E	C1			E												
220	221	E	C1			E																
330	331	E																				

## TANTALUM CAPACITOR

### TCM SERIES STANDARD P/N & DATA

R.V. (V)	Cap. ( $\mu$ F)	Type Code	Catalogue P/N	Max.DCL @+25°C ( $\mu$ A)	Max.DF @+25°C 120Hz(%)	Max.ESR @+25°C 100kHz( $\Omega$ )
4	3.3	A	TA-4R0TCM3R3M-AR	0.50	6	9.0
	4.7	A	TA-4R0TCM4R7M-AR	0.50	6	7.5
	10	B2	TA-4R0TCM100M-B2R	0.50	6	4.0
	15	C1	TA-4R0TCM150M-C1R	0.60	6	2.6
	22	C1	TA-4R0TCM220M-C1R	0.88	6	2.5
	33	C1	TA-4R0TCM330M-C1R	1.32	6	2.0
	47	E	TA-4R0TCM470M-ER	1.88	6	1.6
6.3	68	E	TA-4R0TCM680M-ER	2.72	6	1.1
	2.2	A	TA-6R3TCM2R2M-AR	0.50	6	9.0
	6.8	B2	TA-6R3TCM6R8M-B2R	0.50	6	4.0
	10	C1	TA-6R3TCM100M-C1R	0.63	6	2.6
	15	C1	TA-6R3TCM150M-C1R	0.95	6	2.5
	22	C1	TA-6R3TCM220M-C1R	1.39	6	2.0
	33	E	TA-6R3TCM330M-ER	2.08	6	1.6
10	47	E	TA-6R3TCM470M-ER	2.96	6	1.1
	1.5	A	TA-010TCM1R5M-AR	0.50	6	10.0
	4.7	B2	TA-010TCM4R7M-B2R	0.50	6	4.0
	6.8	C1	TA-010TCM6R8M-C1R	0.68	6	2.6
	10	C1	TA-010TCM100M-C1R	1.00	6	2.5
	15	C1	TA-010TCM150M-C1R	1.50	6	2.0
	22	E	TA-010TCM220M-ER	2.20	6	1.6
16	33	E	TA-010TCM330M-ER	3.30	6	1.1
	1.0	A	TA-016TCM1R0M-AR	0.50	4	11.0
	3.3	B2	TA-016TCM3R3M-B2R	0.53	6	4.4
	4.7	C1	TA-016TCM4R7M-C1R	0.75	6	2.5
	6.8	C1	TA-016TCM6R8M-C1R	1.09	6	2.5
	10	C1	TA-016TCM100M-C1R	1.60	6	2.0
	15	E	TA-016TCM150M-ER	2.40	6	1.6
20	22	E	TA-016TCM220M-ER	3.52	6	1.1
	0.68	A	TA-020TCMR68M-AR	0.50	4	12.0
	2.2	B2	TA-020TCM2R2M-B2R	0.50	6	3.5
	3.3	C1	TA-020TCM3R3M-C1R	0.66	6	3.0
	4.7	C1	TA-020TCM4R7M-C1R	0.94	6	2.5
25	6.8	C1	TA-020TCM6R8M-C1R	1.36	6	2.0
	0.47	A	TA-025TCMR47M-AR	0.50	4	14.0
	1.5	B2	TA-025TCM1R5M-B2R	0.50	6	5.5
	2.2	C1	TA-025TCM2R2M-C1R	0.55	6	2.5
	3.3	C1	TA-025TCM3R3M-C1R	0.83	6	2.5
35	4.7	C1	TA-025TCM4R7M-C1R	1.18	6	2.4
	0.22	A	TA-035TCMR22M-AR	0.50	4	18.0
	0.33	A	TA-035TCMR33M-AR	0.50	4	15.0
	2.2	C1	TA-035TCM2R2M-C1R	0.77	6	2.5
3.3	C1	TA-035TCM3R3M-C1R	1.16	6	2.5	

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## TCMS SERIES STANDARD P/N & DATA

R.V. (V)	Cap. ( $\mu$ F)	Type Code	Catalogue P/N	Max.DCL @+25°C ( $\mu$ A)	Max.DF @+25°C 120Hz(%)	Max.ESR @+25°C 100kHz( $\Omega$ )
4	6.8	A	TA-4R0TCMS6R8M-AR	0.50	8	6.5
	10	A	TA-4R0TCMS100M-AR	0.50	8	6.0
	15	A	TA-4R0TCMS150M-AR	0.60	8	4.0
	15	B2	TA-4R0TCMS150M-B2R	0.60	8	3.0
	22	A	TA-4R0TCMS220M-AR	0.88	8	4.0
	22	B2	TA-4R0TCMS220M-B2R	0.88	8	2.5
	33	A	TA-4R0TCMS330M-AR	1.32	8	3.5
	33	B2	TA-4R0TCMS330M-B2R	1.32	8	2.8
	47	A	TA-4R0TCMS470M-AR	1.88	12	5.0
	47	B2	TA-4R0TCMS470M-B2R	1.88	8	2.5
	47	C1	TA-4R0TCMS470M-C1R	1.88	8	1.8
	68	A	TA-4R0TCMS680M-AR	2.72	12	3.0
	68	B2	TA-4R0TCMS680M-B2R	2.72	8	2.2
	68	C1	TA-4R0TCMS680M-C1R	2.72	8	1.6
	100	B2	TA-4R0TCMS101M-B2R	4.00	12	2.2
	100	C1	TA-4R0TCMS101M-C1R	4.00	10	1.4
	100	E	TA-4R0TCMS101M-ER	4.00	10	0.9
	150	B2	TA-4R0TCMS151M-B2R	6.00	18	2.2
	150	C1	TA-4R0TCMS151M-C1R	6.00	10	1.2
	150	E	TA-4R0TCMS151M-ER	6.00	10	0.7
220	C1	TA-4R0TCMS221M-C1R	8.80	12	1.2	
220	E	TA-4R0TCMS221M-ER	8.80	10	0.7	
330	E	TA-4R0TCMS331M-ER	13.20	10	0.7	
6.3	4.7	A	TA-6R3TCMS4R7M-AR	0.50	6	6.5
	6.8	A	TA-6R3TCMS6R8M-AR	0.50	8	6.0
	10	A	TA-6R3TCMS100M-AR	0.63	8	4.0
	10	B2	TA-6R3TCMS100M-B2R	0.63	8	3.0
	15	A	TA-6R3TCMS150M-AR	0.95	8	4.0
	15	B2	TA-6R3TCMS150M-B2R	0.95	8	2.5
	22	A	TA-6R3TCMS220M-AR	1.39	8	3.5
	22	B2	TA-6R3TCMS220M-B2R	1.39	8	2.5
	33	A	TA-6R3TCMS330M-AR	2.08	12	3.0
	33	B2	TA-6R3TCMS330M-B2R	2.08	8	2.5
	33	C1	TA-6R3TCMS330M-C1R	2.08	8	1.8
	47	A	TA-6R3TCMS470M-AR	2.96	12	3.0
	47	B2	TA-6R3TCMS470M-B2R	2.96	8	2.5
	47	C1	TA-6R3TCMS470M-C1R	2.96	8	1.6
	68	B2	TA-6R3TCMS680M-B2R	4.28	10	2.5
	68	C1	TA-6R3TCMS680M-C1R	4.28	8	1.4
	68	E	TA-6R3TCMS680M-ER	4.28	8	0.9
	100	B2	TA-6R3TCMS101M-B2R	6.30	12	2.5
	100	C1	TA-6R3TCMS101M-C1R	6.30	10	1.4
	100	E	TA-6R3TCMS101M-ER	6.30	10	0.8
150	C1	TA-6R3TCMS151M-C1R	9.45	10	1.2	
150	E	TA-6R3TCMS151M-ER	9.45	10	0.7	
220	E	TA-6R3TCMS221M-ER	13.86	10	0.7	
10	3.3	A	TA-010TCMS3R3M-AR	0.50	6	6.5
	4.7	A	TA-010TCMS4R7M-AR	0.50	6	6.0
	6.8	A	TA-010TCMS6R8M-AR	0.68	8	5.0
	6.8	B2	TA-010TCMS6R8M-B2R	0.68	8	2.5
	10	A	TA-010TCMS100M-AR	1.00	8	3.0
	10	B2	TA-010TCMS100M-B2R	1.00	8	2.5
	15	A	TA-010TCMS150M-AR	1.50	8	3.0
	15	B2	TA-010TCMS150M-B2R	1.50	8	2.5
	22	A	TA-010TCMS220M-AR	2.20	12	3.0
	22	B2	TA-010TCMS220M-B2R	2.20	8	2.5
	22	C1	TA-010TCMS220M-C1R	2.20	8	1.8
	33	B2	TA-010TCMS330M-B2R	3.30	8	2.2
	33	C1	TA-010TCMS330M-C1R	3.30	8	1.6

R.V. (V)	Cap. ( $\mu$ F)	Type Code	Catalogue P/N	Max.DCL @+25°C ( $\mu$ A)	Max.DF @+25°C 120Hz(%)	Max.ESR @+25°C 100kHz( $\Omega$ )	
10	47	B2	TA-010TCMS470M-B2R	4.70	10	2.5	
	47	C1	TA-010TCMS470M-C1R	4.70	8	1.4	
	47	E	TA-010TCMS470M-ER	4.70	8	0.9	
	68	C1	TA-010TCMS680M-C1R	6.80	8	1.2	
	68	E	TA-010TCMS680M-ER	6.80	8	0.8	
	100	C1	TA-010TCMS101M-C1R	10.00	10	1.2	
	100	E	TA-010TCMS101M-ER	10.00	10	0.7	
	150	E	TA-010TCMS151M-ER	15.00	10	0.7	
	16	2.2	A	TA-016TCMS2R2M-AR	0.50	6	6.5
		3.3	A	TA-016TCMS3R3M-AR	0.53	6	5.0
		4.7	A	TA-016TCMS4R7M-AR	0.75	6	4.5
		4.7	B2	TA-016TCMS4R7M-B2R	0.75	6	3.5
		6.8	A	TA-016TCMS6R8M-AR	1.09	8	5.0
		6.8	B2	TA-016TCMS6R8M-B2R	1.09	8	3.3
10		A	TA-016TCMS100M-AR	1.60	8	5.0	
10		B2	TA-016TCMS100M-B2R	1.60	8	2.8	
15		B2	TA-016TCMS150M-B2R	2.40	8	2.5	
15		C1	TA-016TCMS150M-C1R	2.40	8	1.8	
22		B2	TA-016TCMS220M-B2R	3.52	8	2.5	
22		C1	TA-016TCMS220M-C1R	3.52	8	1.6	
33		B2	TA-016TCMS330M-B2R	5.28	8	2.5	
33		C1	TA-016TCMS330M-C1R	5.28	8	1.6	
33	E	TA-016TCMS330M-ER	5.28	8	0.9		
47	C1	TA-016TCMS470M-C1R	7.52	8	1.4		
47	E	TA-016TCMS470M-ER	7.52	8	0.8		
68	E	TA-016TCMS680M-ER	10.88	8	0.7		
100	E	TA-016TCMS101M-ER	16.00	10	0.7		
20	1.5	A	TA-020TCMS1R5M-AR	0.50	6	6.5	
	2.2	A	TA-020TCMS2R2M-AR	0.50	6	5.0	
	3.3	A	TA-020TCMS3R3M-AR	0.66	6	5.0	
	3.3	B2	TA-020TCMS3R3M-B2R	0.66	6	3.0	
	4.7	B2	TA-020TCMS4R7M-B2R	0.94	6	3.0	
	6.8	B2	TA-020TCMS6R8M-B2R	1.39	8	2.8	
	10	B2	TA-020TCMS100M-B2R	2.00	8	2.8	
	10	C1	TA-020TCMS100M-C1R	2.00	8	1.9	
	15	C1	TA-020TCMS150M-C1R	3.00	8	1.7	
	22	C1	TA-020TCMS220M-C1R	4.40	8	1.8	
25	1.0	A	TA-025TCMS1R0M-AR	0.50	6	8.0	
	1.5	A	TA-025TCMS1R5M-AR	0.50	6	5.0	
	2.2	A	TA-025TCMS2R2M-AR	0.55	6	5.0	
	2.2	B2	TA-025TCMS2R2M-B2R	0.55	6	3.5	
	3.3	B2	TA-025TCMS3R3M-B2R	0.83	6	3.5	
	4.7	B2	TA-025TCMS4R7M-B2R	1.18	6	3.5	
	6.8	C1	TA-025TCMS6R8M-C1R	1.70	8	2.0	
	10	C1	TA-025TCMS100M-C1R	2.50	8	1.8	
35	0.47	A	TA-035TCMSR47M-AR	0.50	6	12.0	
	0.68	A	TA-035TCMSR68M-AR	0.50	6	5.0	
	1.0	A	TA-035TCMS1R0M-AR	0.50	6	5.0	
	1.5	B2	TA-025TCMS1R5M-B2R	0.53	6	3.5	
	2.2	B2	TA-035TCMS2R2M-B2R	0.77	6	3.5	
	3.3	B2	TA-035TCMS3R3M-B2R	1.16	6	3.5	
	4.7	C1	TA-035TCMS4R7M-C1R	1.65	6	2.2	
6.8	C1	TA-035TCMS6R8M-C1R	2.38	8	2.2		