

# Solid Tantalum Surface Mount Chip Capacitors

## TANTAMOUNT®, Molded Case, Low ESR



### PERFORMANCE CHARACTERISTICS

[www.vishay.com/doc?40088](http://www.vishay.com/doc?40088)

**Operating Temperature:** - 55 °C to + 125 °C  
(above 85 °C, voltage derating is required)

**Capacitance Range:** 0.47 µF to 1000 µF

**Capacitance Tolerance:** ± 10 %, ± 20 %

**Voltage Rating:** 4 V<sub>DC</sub> to 63 V<sub>DC</sub>

### FEATURES

- Low ESR
- 100 % surge current tested (C, D, and E case sizes)
- Molded case available in seven case codes
- High ripple current carrying capability
- Terminations: 100 % matte tin, standard tin/lead available
- Compatible with “High Volume” automatic pick and place equipment
- Compliant terminations
- Meets IEC specification QC300801/US0001 and EIA535BAAC mechanical and performance requirements
- Moisture sensitivity level 1
- Material categorization: For definitions of compliance please see [www.vishay.com/doc?99912](http://www.vishay.com/doc?99912)



**RoHS\***  
Available

### Note

\* This datasheet provides information about parts that are RoHS-compliant and/or parts that are non-RoHS-compliant. For example, parts with lead (Pb) terminations are not RoHS-compliant. Please see the information/tables in this datasheet for details.

### APPLICATIONS

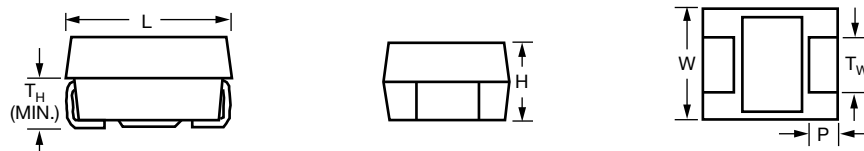
- Industrial
- Telecom infrastructure
- Consumer
- Computer
- General purpose

### ORDERING INFORMATION

TR3 TYPE	D CASE CODE	107 CAPACITANCE	K CAPACITANCE TOLERANCE	010 DC VOLTAGE RATING AT + 85 °C	C TERMINATION AND PACKAGING	0100 ESR
	See Ratings and Case Codes table	This is expressed in picofarads. The first two digits are the significant figures. The third is the number of zeros to follow.	K = ± 10 % M = ± 20 %	This is expressed in V. To complete the three-digit block, zeros precede the voltage rating. A decimal point is indicated by an “R” (6R3 = 6.3 V).	C = Matte tin/7" (178 mm) reels D = Matte tin/13" (330 mm) reels E = Tin/lead/7" (178 mm) reels F = Tin/lead/13" (330 mm) reels	Maximum 100 kHz ESR in mΩ. See note below.

### Notes

- We reserve the right to supply higher voltage ratings and tighter capacitance tolerance capacitors in the same case size. Voltage substitutions will be marked with the higher voltage rating. Low ESR solid tantalum chip capacitors allow delta ESR of 1.25 times the datasheet limit after mounting.
- Dry pack is available per request, contact regional marketing.

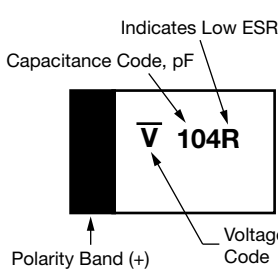
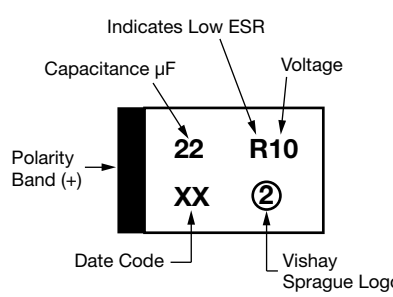
**DIMENSIONS** in inches [millimeters]


CASE CODE	EIA SIZE	L	W	H	P	TH	TH (MIN.)
A	3216-18	0.126 ± 0.008 [3.2 ± 0.20]	0.063 ± 0.008 [1.6 ± 0.20]	0.063 ± 0.008 [1.6 ± 0.20]	0.031 ± 0.012 [0.80 ± 0.30]	0.047 ± 0.004 [1.2 ± 0.10]	0.028 [0.70]
B	3528-21	0.138 ± 0.008 [3.5 ± 0.20]	0.110 ± 0.008 [2.8 ± 0.20]	0.075 ± 0.008 [1.9 ± 0.20]	0.031 ± 0.012 [0.80 ± 0.30]	0.087 ± 0.004 [2.2 ± 0.10]	0.028 [0.70]
C	6032-28	0.236 ± 0.012 [6.0 ± 0.30]	0.126 ± 0.012 [3.2 ± 0.30]	0.098 ± 0.012 [2.5 ± 0.30]	0.051 ± 0.012 [1.3 ± 0.30]	0.087 ± 0.004 [2.2 ± 0.10]	0.039 [1.0]
D	7343-31	0.287 ± 0.012 [7.3 ± 0.30]	0.170 ± 0.012 [4.3 ± 0.30]	0.110 ± 0.012 [2.8 ± 0.30]	0.051 ± 0.012 [1.3 ± 0.30]	0.094 ± 0.004 [2.4 ± 0.10]	0.039 [1.0]
E	7343-43	0.287 ± 0.012 [7.3 ± 0.30]	0.169 ± 0.012 [4.3 ± 0.30]	0.157 ± 0.012 [4.0 ± 0.30]	0.051 ± 0.012 [1.3 ± 0.30]	0.094 ± 0.004 [2.4 ± 0.10]	0.039 [1.0]
V	7343-20	0.287 ± 0.012 [7.3 ± 0.30]	0.169 ± 0.012 [4.3 ± 0.30]	0.079 max. [2.0 max.]	0.051 ± 0.012 [1.3 ± 0.30]	0.094 ± 0.004 [2.4 ± 0.10]	0.039 [1.0]
W	7361-38	0.287 ± 0.012 [7.3 ± 0.30]	0.236 ± 0.012 [6.0 ± 0.30]	0.138 ± 0.012 [3.5 ± 0.30]	0.047 ± 0.008 [1.2 ± 0.20]	0.122 ± 0.004 [3.1 ± 0.10]	0.069 [1.75]

**RATINGS AND CASE CODES**

μF	4 V	6.3 V	10 V	16 V	20 V	25 V	35 V	50 V	63 V
0.47							A		
0.68							A		
1.0					A	A	A/B	B/C	
1.5						A	B/C	B/C	
2.2			A	A	A	A/B	B/C	B/C/D	
3.3				A	A/B	A/B	B/C	C/D	
4.7			A	A/B	A/B	A/B/C	B/C/D	C/D/E	D
6.8			A	A/B	A/B	B/C	C/D/E	D/E	
10		A	A/B	A/B/C	B/C	B/C/D	C/D/E	D/E	E
15	A	A	A/B	B/C	B/C	B/C/D	D/E	E	
22	A	A/B	A/B/C	B/C/D	B/C/D	C/D/E/V	D/E		
33	A/B	A/B	B/C	B/C/D	C/D	D/E			
47	A/B	A/B/C	B/C/D	C/D	D/E	D/E			
68	B/C	B/C/D	B/C/D/E/V	D	D/E	E/W			
100	A/B/C	B/C/D/V	B/C/D/E/V	D/E/V	D/E/W	W			
150	B/C/D	C/D/E	C/D/E	D/E	W				
220	B/C/D	C/D/E/V	D/E/V	E					
330	D	D/E/W	D/E/W						
470	D/E	D/E/W	E/W						
680	D/E	E							
1000	E	E							

**MARKING**

"A" CASE VOLTAGE CODE		 <p>Indicates Low ESR Capacitance Code, pF Voltage Code Polarity Band (+) <b>A Case</b></p>
VOLTS	CODE	
4.0	G	
6.3	J	
10	A	
16	C	
20	D	
25	E	
35	V	
50	T	
		 <p>Indicates Low ESR Capacitance <math>\mu</math>F Voltage Polarity Band (+) Date Code Vishay Sprague Logo <b>B, C, D, E, V Cases</b></p>

**Marking**  
Capacitor marking includes an anode (+) polarity band, capacitance in microfarads and the voltage rating. "A" Case capacitors use a letter code for the voltage and EIA capacitance code.  
The Vishay Sprague® trademark is included if space permits. Capacitors rated at 6.3 V are marked 6 V.  
A manufacturing date code is marked on all capacitors.  
Call the factory for further explanation.

**STANDARD RATINGS**

CAPACITANCE ( $\mu$ F)	CASE CODE	PART NUMBER	MAX. DCL AT + 25 °C ( $\mu$ A)	MAX. DF AT + 25 °C 120 Hz (%)	MAX. ESR AT + 25 °C 100 kHz ( $\Omega$ )	MAX. RIPPLE 100 kHz $I_{RMS}$ (A)
4 V <sub>DC</sub> AT + 85 °C; 2.7 V <sub>DC</sub> AT + 125 °C						
15	A	TR3A156(1)004(2)1500	0.6	6	1.500	0.22
22	A	TR3A226(1)004(2)1500	0.9	6	1.500	0.22
33	A	TR3A336(1)004(2)1500	1.3	6	1.500	0.22
33	B	TR3B336(1)004(2)0500	1.3	6	0.500	0.41
47	A	TR3A476(1)004(2)0800	1.9	14	0.800	0.31
47	A	TR3A476(1)004(2)0500	1.9	14	0.500	0.39
47	B	TR3B476(1)004(2)0500	1.9	6	0.500	0.41
68	B	TR3B686(1)004(2)0500	2.7	6	0.500	0.41
68	C	TR3C686(1)004(2)0275	2.7	6	0.275	0.63
100	A	TR3A107M004(2)1000	10.0	30	1.000	0.27
100	B	TR3B107(1)004(2)0450	4.0	8	0.450	0.43
100	C	TR3C107(1)004(2)0225	4.0	6	0.225	0.70
150	B	TR3B157(1)004(2)0900	6.0	14	0.900	0.31
150	B	TR3B157(1)004(2)0500	6.0	14	0.500	0.41
150	B	TR3B157(1)004(2)0400	6.0	14	0.400	0.46
150	C	TR3C157(1)004(2)0250	6.0	12	0.250	0.66
150	D	TR3D157(1)004(2)0150	6.0	8	0.150	1.00
220	B	TR3B227M004(2)1100	8.8	18	1.100	0.28
220	B	TR3B227M004(2)0700	8.8	18	0.700	0.35
220	B	TR3B227M004(2)0500	8.8	18	0.500	0.41
220	B	TR3B227M004(2)0450	8.8	18	0.450	0.43
220	C	TR3C227(1)004(2)0200	8.8	8	0.200	0.74
220	D	TR3D227(1)004(3)0050	8.8	8	0.050	1.73
220	D	TR3D227(1)004(2)0150	8.8	8	0.150	1.00
220	D	TR3D227(1)004(2)0100	8.8	8	0.100	1.22
330	D	TR3D337(1)004(2)0100	13.2	8	0.100	1.22
330	D	TR3D337(1)004(3)0045	13.2	8	0.045	1.83
330	D	TR3D337(1)004(3)0035	13.2	8	0.035	2.07

**Note**

- Part number definitions:
  - Capacitance tolerance codes: K, M
  - Terminations and packaging codes: C, D, E, F
  - Lead (Pb)-free terminations and packaging codes: C, D



STANDARD RATINGS						
CAPACITANCE ( $\mu$ F)	CASE CODE	PART NUMBER	MAX. DCL AT + 25 °C ( $\mu$ A)	MAX. DF AT + 25 °C 120 Hz (%)	MAX. ESR AT + 25 °C 100 kHz ( $\Omega$ )	MAX. RIPPLE 100 kHz $I_{RMS}$ (A)
4 V <sub>DC</sub> AT + 85 °C; 2.7 V <sub>DC</sub> AT + 125 °C						
330	D	TR3D337(1)004(2)0150	13.2	8	0.150	1.00
470	D	TR3D477(1)004(2)0125	18.8	10	0.125	1.10
470	D	TR3D477(1)004(2)0100	18.8	10	0.100	1.22
470	D	TR3D477(1)004(2)0060	18.8	10	0.060	1.58
470	D	TR3D477(1)004(3)0045	18.8	10	0.045	1.83
470	D	TR3D477(1)004(3)0035	18.8	10	0.035	2.07
470	E	TR3E477(1)004(2)0100	18.8	10	0.100	1.28
470	E	TR3E477(1)004(3)0045	18.8	10	0.045	1.91
470	E	TR3E477(1)004(3)0035	18.8	10	0.035	2.17
680	D	TR3D687M004(2)0100	27.2	25	0.100	1.22
680	D	TR3D687M004(3)0060	27.2	25	0.060	1.58
680	E	TR3E687(1)004(2)0100	27.2	12	0.100	1.28
680	E	TR3E687(1)004(3)0040	27.2	12	0.040	1.37
1000	E	TR3E108M004(2)0100	40.0	20	0.100	1.28
6.3 V <sub>DC</sub> AT + 85 °C; 4 V <sub>DC</sub> AT 125 °C						
10	A	TR3A106(1)6R3(2)2000	0.6	6	2.000	0.19
10	A	TR3A106(1)6R3(2)1500	0.6	6	1.500	0.22
15	A	TR3A156(1)6R3(2)2000	0.9	6	2.000	0.19
15	A	TR3A156(1)6R3(2)1000	0.9	6	1.000	0.27
22	A	TR3A226(1)6R3(2)3000	1.4	6	3.000	0.16
22	A	TR3A226(1)6R3(2)2000	1.4	6	2.000	0.19
22	A	TR3A226(1)6R3(2)1000	1.4	6	1.000	0.27
22	A	TR3A226(1)6R3(2)0900	1.4	6	0.900	0.29
22	B	TR3B226(1)6R3(2)0600	1.4	6	0.600	0.38
33	A	TR3A336(1)6R3(2)2000	2.0	14	2.000	0.19
33	A	TR3A336(1)6R3(2)0800	2.0	14	0.800	0.31
33	A	TR3A336(1)6R3(2)0600	2.0	14	0.600	0.35
33	B	TR3B336(1)6R3(2)0450	2.0	6	0.450	0.43
33	B	TR3B336(1)6R3(2)0350	2.0	6	0.350	0.49
33	B	TR3B336(1)6R3(2)0600	2.0	6	0.600	0.38
33	B	TR3B336(1)6R3(2)0500	2.0	6	0.500	0.41
47	A	TR3A476(1)6R3(2)0800	3.0	12	0.800	0.31
47	B	TR3B476(1)6R3(2)0550	3.0	6	0.550	0.39
47	B	TR3B476(1)6R3(2)0500	3.0	6	0.500	0.41
47	B	TR3B476(1)6R3(2)0350	3.0	6	0.350	0.49
47	B	TR3B476(1)6R3(2)0250	3.0	6	0.250	0.58
47	C	TR3C476(1)6R3(2)0300	3.0	6	0.300	0.61
47	C	TR3C476(1)6R3(2)0250	3.0	6	0.250	0.66
68	B	TR3B686(1)6R3(2)0650	4.3	6	0.650	0.36
68	B	TR3B686(1)6R3(2)0550	4.3	6	0.550	0.39
68	B	TR3B686(1)6R3(2)0500	4.3	6	0.500	0.41
68	B	TR3B686(1)6R3(2)0350	4.3	6	0.350	0.49
68	B	TR3B686(1)6R3(2)0250	4.3	6	0.250	0.58
68	C	TR3C686(1)6R3(2)0275	4.3	6	0.275	0.63
68	C	TR3C686(1)6R3(2)0250	4.3	6	0.250	0.66
68	C	TR3C686(1)6R3(2)0200	4.3	6	0.200	0.74
68	D	TR3D686(1)6R3(2)0200	4.3	6	0.200	0.87
68	D	TR3D686(1)6R3(2)0175	4.3	4	0.175	0.93
100	B	TR3B107(1)6R3(2)1500	6.3	15	1.500	0.24
100	B	TR3B107(1)6R3(2)0500	6.3	15	0.500	0.41
100	B	TR3B107(1)6R3(2)0400	6.3	15	0.400	0.46
100	B	TR3B107(1)6R3(2)0250	6.3	15	0.250	0.58
100	C	TR3C107(1)6R3(2)0300	6.3	6	0.300	0.61
100	C	TR3C107(1)6R3(2)0250	6.3	6	0.250	0.66

**Note**

- Part number definitions:
  - Capacitance tolerance codes: K, M
  - Terminations and packaging codes: C, D, E, F
  - Lead (Pb)-free terminations and packaging codes: C, D



STANDARD RATINGS						
CAPACITANCE ( $\mu$ F)	CASE CODE	PART NUMBER	MAX. DCL AT + 25 °C ( $\mu$ A)	MAX. DF AT + 25 °C 120 Hz (%)	MAX. ESR AT + 25 °C 100 kHz ( $\Omega$ )	MAX. RIPPLE 100 kHz $I_{RMS}$ (A)
6.3 V <sub>DC</sub> AT + 85 °C; 4 V <sub>DC</sub> AT 125 °C						
100	C	TR3C107(1)6R3(2)0150	6.3	6	0.150	0.86
100	C	TR3C107(1)6R3(2)0125	6.3	6	0.125	0.94
100	C	TR3C107(1)6R3(2)0100	6.3	6	0.100	1.05
100	D	TR3D107(1)6R3(2)0150	6.3	6	0.150	1.00
100	D	TR3D107(1)6R3(2)0140	6.3	6	0.140	1.04
100	V	TR3V107(1)6R3(3)0200	6.3	8	0.200	0.79
100	V	TR3V107(1)6R3(3)0150	6.3	8	0.150	0.91
150	C	TR3C157(1)6R3(2)0300	9.4	8	0.300	0.61
150	C	TR3C157(1)6R3(2)0200	9.4	8	0.200	0.74
150	D	TR3D157(1)6R3(2)0150	9.4	8	0.150	1.00
150	D	TR3D157(1)6R3(2)0125	9.4	8	0.125	1.10
150	D	TR3D157(1)6R3(2)0075	9.4	8	0.075	1.41
150	D	TR3D157(1)6R3(2)0070	9.4	8	0.070	1.46
150	D	TR3D157(1)6R3(3)0050	9.4	8	0.050	1.73
150	E	TR3E157(1)6R3(2)0100	9.4	8	0.100	1.28
220	C	TR3C227(1)6R3(2)0300	13.9	14	0.300	0.61
220	C	TR3C227(1)6R3(2)0250	13.9	14	0.250	0.66
220	C	TR3C227(1)6R3(2)0225	13.9	14	0.225	0.70
220	D	TR3D227(1)6R3(2)0150	13.9	8	0.150	1.00
220	D	TR3D227(1)6R3(2)0100	13.9	8	0.100	1.22
220	D	TR3D227(1)6R3(3)0050	13.9	8	0.050	1.73
220	E	TR3E227(1)6R3(2)0150	13.9	8	0.150	1.05
220	E	TR3E227(1)6R3(2)0100	13.9	8	0.100	1.28
220	V	TR3V227(1)6R3(3)0100	13.9	10	0.100	1.12
220	V	TR3V227(1)6R3(3)0150	13.9	10	0.150	0.91
330	D	TR3D337(1)6R3(2)0150	20.8	8	0.150	1.00
330	D	TR3D337(1)6R3(2)0125	20.8	8	0.125	1.10
330	D	TR3D337(1)6R3(2)0100	20.8	8	0.100	1.22
330	D	TR3D337(1)6R3(2)0060	20.8	8	0.060	1.58
330	D	TR3D337(1)6R3(3)0050	20.8	8	0.050	1.73
330	D	TR3D337(1)6R3(3)0045	20.8	8	0.045	1.83
330	D	TR3D337(1)6R3(3)0035	20.8	8	0.035	2.07
330	E	TR3E337(1)6R3(2)0150	20.8	8	0.150	1.05
330	E	TR3E337(1)6R3(2)0100	20.8	8	0.100	1.28
330	E	TR3E337(1)6R3(2)0050	20.8	8	0.050	1.82
330	W	TR3W337(1)6R3(3)0100	20.8	8	0.100	1.58
330	W	TR3W337(1)6R3(3)0060	20.8	8	0.060	2.04
330	W	TR3W337(1)6R3(3)0040	20.8	8	0.040	2.50
470	D	TR3D477(1)6R3(2)0200	29.6	14	0.200	0.87
470	D	TR3D477(1)6R3(2)0150	29.6	14	0.150	1.00
470	D	TR3D477(1)6R3(2)0125	29.6	14	0.125	1.10
470	D	TR3D477(1)6R3(3)0100	29.6	14	0.100	1.22
470	E	TR3E477(1)6R3(2)0100	29.6	10	0.100	1.28
470	E	TR3E477(1)6R3(3)0065	29.6	10	0.065	1.59
470	E	TR3E477(1)6R3(3)0060	29.6	10	0.060	1.66
470	E	TR3E477(1)6R3(3)0050	29.6	10	0.050	1.82
470	W	TR3W477(1)6R3(3)0100	29.6	20	0.100	1.58
470	W	TR3W477(1)6R3(3)0060	29.6	20	0.060	2.04
470	W	TR3W477(1)6R3(3)0050	29.6	20	0.050	2.24
680	E	TR3E687(1)6R3(2)0100	42.8	20	0.100	1.28
1000	E	TR3E108M6R3(2)0200	63.0	30	0.200	0.91
1000	E	TR3E108M6R3(2)0150	63.0	30	0.150	1.05
1000	E	TR3E108M6R3(3)0100	63.0	30	0.100	1.28

**Note**

- Part number definitions:
  - Capacitance tolerance codes: K, M
  - Terminations and packaging codes: C, D, E, F
  - Lead (Pb)-free terminations and packaging codes: C, D



STANDARD RATINGS						
CAPACITANCE ( $\mu$ F)	CASE CODE	PART NUMBER	MAX. DCL AT + 25 °C ( $\mu$ A)	MAX. DF AT + 25 °C 120 Hz (%)	MAX. ESR AT + 25 °C 100 kHz ( $\Omega$ )	MAX. RIPPLE 100 kHz $I_{RMS}$ (A)
10 V <sub>DC</sub> AT + 85 °C; 7 V <sub>DC</sub> AT 125 °C						
2.2	A	TR3A225(1)010(2)6800	0.5	6	6.800	0.11
2.2	A	TR3A225(1)010(2)6000	0.5	6	6.000	0.11
2.2	A	TR3A225(1)010(2)1800	0.5	6	1.800	0.20
4.7	A	TR3A475(1)010(2)3000	0.5	6	3.000	0.16
4.7	A	TR3A475(1)010(2)1500	0.5	6	1.500	0.22
4.7	A	TR3A475(1)010(2)1400	0.5	6	1.400	0.23
4.7	A	TR3A475(1)010(2)1000	0.5	6	1.000	0.27
6.8	A	TR3A685(1)010(2)1800	0.7	6	1.800	0.20
6.8	A	TR3A685(1)010(2)3000	0.7	6	3.000	0.16
10	A	TR3A106(1)010(2)2000	1.0	6	2.000	0.19
10	A	TR3A106(1)010(2)1800	1.0	6	1.800	0.20
10	A	TR3A106(1)010(2)1000	1.0	6	1.000	0.27
10	A	TR3A106(1)010(2)0900	1.0	6	0.900	0.29
10	B	TR3B106(1)010(2)1000	1.0	6	1.000	0.29
10	B	TR3B106(1)010(2)0800	1.0	6	0.800	0.33
10	B	TR3B106(1)010(2)0750	1.0	6	0.750	0.34
15	A	TR3A156(1)010(2)2000	1.5	6	2.000	0.19
15	A	TR3A156(1)010(2)1000	1.5	6	1.000	0.27
15	B	TR3B156(1)010(2)0600	1.5	6	0.600	0.38
15	B	TR3B156(1)010(2)0450	1.5	6	0.450	0.43
15	B	TR3B156(1)010(2)0700	1.5	6	0.700	0.35
22	A	TR3A226(1)010(2)1500	2.2	8	1.500	0.22
22	A	TR3A226(1)010(2)1000	2.2	8	1.000	0.27
22	A	TR3A226(1)010(2)0900	2.2	8	0.900	0.29
22	A	TR3A226(1)010(2)0800	2.2	8	0.800	0.31
22	B	TR3B226(1)010(2)1000	2.2	6	1.000	0.29
22	B	TR3B226(1)010(2)0700	2.2	6	0.700	0.35
22	B	TR3B226(1)010(2)0500	2.2	6	0.500	0.41
22	B	TR3B226(1)010(2)0400	2.2	6	0.400	0.46
22	C	TR3C226(1)010(2)0400	2.2	6	0.400	0.52
22	C	TR3C226(1)010(2)0345	2.2	6	0.345	0.56
22	C	TR3C226(1)010(2)0300	2.2	6	0.300	0.61
33	B	TR3B336(1)010(2)0425	3.3	6	0.425	0.45
33	B	TR3B336(1)010(2)1400	3.3	6	1.400	0.25
33	B	TR3B336(1)010(2)0650	3.3	6	0.650	0.36
33	B	TR3B336(1)010(2)0600	3.3	6	0.600	0.38
33	B	TR3B336(1)010(2)0500	3.3	6	0.500	0.41
33	B	TR3B336(1)010(2)0300	3.3	6	0.300	0.53
33	C	TR3C336(1)010(2)0375	3.3	6	0.375	0.54
33	C	TR3C336(1)010(2)0300	3.3	6	0.300	0.61
47	B	TR3B476(1)010(2)0600	4.7	6	0.600	0.38
47	B	TR3B476(1)010(2)0500	4.7	6	0.500	0.41
47	B	TR3B476(1)010(2)0350	4.7	6	0.350	0.49
47	B	TR3B476(1)010(2)0650	4.7	6	0.650	0.36
47	C	TR3C476(1)010(2)0200	4.7	6	0.200	0.74
47	C	TR3C476(1)010(2)0350	4.7	6	0.350	0.56
47	C	TR3C476(1)010(2)0300	4.7	6	0.300	0.61
47	D	TR3D476(1)010(2)0220	4.7	6	0.220	0.83
47	D	TR3D476(1)010(2)0200	4.7	6	0.200	0.87
47	D	TR3D476(1)010(2)0140	4.7	6	0.140	1.04

**Note**

- Part number definitions:
  - Capacitance tolerance codes: K, M
  - Terminations and packaging codes: C, D, E, F
  - Lead (Pb)-free terminations and packaging codes: C, D



STANDARD RATINGS						
CAPACITANCE ( $\mu$ F)	CASE CODE	PART NUMBER	MAX. DCL AT + 25 °C ( $\mu$ A)	MAX. DF AT + 25 °C 120 Hz (%)	MAX. ESR AT + 25 °C 100 kHz ( $\Omega$ )	MAX. RIPPLE 100 kHz $I_{RMS}$ (A)
10 V <sub>DC</sub> AT + 85 °C; 7 V <sub>DC</sub> AT 125 °C						
47	D	TR3D476(1)010(2)0135	4.7	6	0.135	1.05
47	D	TR3D476(1)010(2)0100	4.7	6	0.100	1.22
68	B	TR3B686(1)010(2)1500	6.8	14	1.500	0.24
68	B	TR3B686(1)010(2)0900	6.8	14	0.900	0.31
68	B	TR3B686(1)010(2)0750	6.8	14	0.750	0.34
68	B	TR3B686(1)010(2)0600	6.8	14	0.600	0.38
68	C	TR3C686(1)010(2)0200	6.8	6	0.200	0.74
68	C	TR3C686(1)010(2)0300	6.8	6	0.300	0.61
68	C	TR3C686(1)010(2)0275	6.8	6	0.275	0.63
68	C	TR3C686(1)010(2)0225	6.8	6	0.225	0.70
68	D	TR3D686(1)010(2)0200	6.8	6	0.200	0.87
68	D	TR3D686(1)010(2)0150	6.8	6	0.150	1.00
68	D	TR3D686(1)010(2)0100	6.8	6	0.100	1.22
68	D	TR3D686(1)010(3)0070	6.8	6	0.070	1.46
68	E	TR3E686(1)010(2)0150	6.8	4	0.150	1.05
68	V	TR3V686(1)010(3)0700	6.8	6	0.700	0.42
68	V	TR3V686(1)010(3)0300	6.8	6	0.300	0.65
68	V	TR3V686(1)010(3)0200	6.8	6	0.200	0.79
68	V	TR3V686(1)010(3)0140	6.8	6	0.140	0.94
68	V	TR3V686(1)010(3)0100	6.8	6	0.100	1.12
100	B	TR3B107M010(2)1400	10.0	25	1.400	0.25
100	C	TR3C107(1)010(2)0200	10.0	8	0.200	0.74
100	C	TR3C107(1)010(2)0150	10.0	8	0.150	0.86
100	C	TR3C107(1)010(2)0100	10.0	8	0.100	1.05
100	D	TR3D107(1)010(2)0150	10.0	6	0.150	1.00
100	D	TR3D107(1)010(2)0100	10.0	6	0.100	1.22
100	D	TR3D107(1)010(2)0080	10.0	6	0.080	1.37
100	D	TR3D107(1)010(3)0070	10.0	6	0.070	1.52
100	D	TR3D107(1)010(3)0065	10.0	6	0.065	1.46
100	D	TR3D107(1)010(3)0050	10.0	6	0.050	1.73
100	E	TR3E107(1)010(2)0125	10.0	6	0.125	1.15
100	E	TR3E107(1)010(2)0150	10.0	6	0.150	1.05
100	E	TR3E107(1)010(2)0100	10.0	6	0.100	1.28
100	V	TR3V107(1)010(3)0400	10.0	8	0.400	0.56
100	V	TR3V107(1)010(3)0200	10.0	8	0.200	0.79
100	V	TR3V107(1)010(3)0150	10.0	8	0.150	0.91
150	C	TR3C157M010(2)0500	15.0	20	0.500	0.47
150	D	TR3D157(1)010(2)0150	15.0	8	0.150	1.00
150	D	TR3D157(1)010(2)0100	15.0	8	0.100	1.22
150	D	TR3D157(1)010(2)0075	15.0	8	0.075	1.41
150	D	TR3D157(1)010(3)0070	15.0	8	0.070	1.46
150	D	TR3D157(1)010(3)0050	15.0	8	0.050	1.73
150	E	TR3E157(1)010(2)0100	15.0	8	0.100	1.28
150	E	TR3E157(1)010(2)0080	15.0	8	0.080	1.44
220	D	TR3D227(1)010(2)0150	22.0	8	0.150	1.00
220	D	TR3D227(1)010(2)0125	22.0	8	0.125	1.10
220	D	TR3D227(1)010(2)0100	22.0	8	0.100	1.22
220	D	TR3D227(1)010(3)0050	22.0	8	0.050	1.73
220	E	TR3E227(1)010(2)0150	22.0	8	0.150	1.05
220	E	TR3E227(1)010(2)0100	22.0	8	0.100	1.28

**Note**

- Part number definitions:
  - Capacitance tolerance codes: K, M
  - Terminations and packaging codes: C, D, E, F
  - Lead (Pb)-free terminations and packaging codes: C, D





STANDARD RATINGS						
CAPACITANCE ( $\mu$ F)	CASE CODE	PART NUMBER	MAX. DCL AT + 25 °C ( $\mu$ A)	MAX. DF AT + 25 °C 120 Hz (%)	MAX. ESR AT + 25 °C 100 kHz ( $\Omega$ )	MAX. RIPPLE 100 kHz $I_{RMS}$ (A)
10 V <sub>DC</sub> AT + 85 °C; 7 V <sub>DC</sub> AT 125 °C						
220	E	TR3E227(1)010(3)0070	22.0	8	0.070	1.54
220	E	TR3E227(1)010(3)0060	22.0	8	0.060	1.66
220	E	TR3E227(1)010(3)0050	22.0	8	0.050	1.82
220	V	TR3V227(1)010(3)0200	30.0	12	0.200	0.79
220	V	TR3V227(1)010(3)0150	30.0	12	0.150	0.91
330	D	TR3D337(1)010(2)0150	33.0	15	0.150	1.00
330	D	TR3D337(1)010(2)0125	33.0	15	0.125	1.10
330	D	TR3D337(1)010(2)0100	33.0	15	0.100	1.22
330	E	TR3E337(1)010(2)0100	33.0	10	0.100	1.28
330	E	TR3E337(1)010(3)0060	33.0	10	0.060	1.66
330	W	TR3W337(1)010(3)0100	33.0	10	0.100	1.58
330	W	TR3W337(1)010(3)0060	33.0	10	0.060	2.04
330	W	TR3W337(1)010(3)0040	33.0	10	0.040	2.50
470	E	TR3E477(1)010(2)0200	47.0	15	0.200	0.91
470	E	TR3E477(1)010(2)0150	47.0	15	0.150	1.05
470	E	TR3E477(1)010(2)0100	47.0	15	0.100	1.28
470	E	TR3E477(1)010(3)0075	47.0	15	0.075	1.48
470	W	TR3W477(1)010(3)0100	47.0	20	0.100	1.58
470	W	TR3W477(1)010(3)0060	47.0	20	0.060	2.04
470	W	TR3W477(1)010(3)0050	47.0	20	0.050	2.24
16 V <sub>DC</sub> AT + 85 °C; 10 V <sub>DC</sub> AT + 125 °C						
2.2	A	TR3A225(1)016(2)4000	0.5	6	4.000	0.14
2.2	A	TR3A225(1)016(2)3500	0.5	6	3.500	0.15
2.2	A	TR3A225(1)016(2)1800	0.5	6	1.800	0.20
3.3	A	TR3A335(1)016(2)4000	0.5	6	4.000	0.14
3.3	A	TR3A335(1)016(2)3500	0.5	6	3.500	0.15
4.7	A	TR3A475(1)016(2)3000	0.8	6	3.000	0.16
4.7	A	TR3A475(1)016(2)2500	0.8	6	2.500	0.17
4.7	A	TR3A475(1)016(2)2000	0.8	6	2.000	0.19
4.7	A	TR3A475(1)016(2)1500	0.8	6	1.500	0.22
4.7	B	TR3B475(1)016(2)1500	0.8	6	1.500	0.24
4.7	B	TR3B475(1)016(2)0800	0.8	6	0.800	0.33
6.8	A	TR3A685(1)016(2)3000	1.1	6	3.000	0.16
6.8	A	TR3A685(1)016(2)1500	1.1	6	1.500	0.22
6.8	B	TR3B685(1)016(2)1200	1.1	6	1.200	0.27
6.8	B	TR3B685(1)016(2)0600	1.1	6	0.600	0.38
10	A	TR3A106(1)016(2)1700	1.6	6	1.700	0.21
10	B	TR3B106(1)016(2)0800	1.6	6	0.800	0.33
10	B	TR3B106(1)016(2)0500	1.6	6	0.500	0.41
10	C	TR3C106(1)016(2)0600	1.6	6	0.600	0.43
10	C	TR3C106(1)016(2)0500	1.6	6	0.500	0.47
10	C	TR3C106(1)016(2)0450	1.6	6	0.450	0.49
15	B	TR3B156(1)016(2)0800	2.4	6	0.800	0.33
15	B	TR3B156(1)016(2)0500	2.4	6	0.500	0.41
15	C	TR3C156(1)016(2)0400	2.4	6	0.400	0.52
22	B	TR3B226(1)016(2)1000	3.5	6	1.000	0.29
22	B	TR3B226(1)016(2)0700	3.5	6	0.700	0.35
22	B	TR3B226(1)016(2)0600	3.5	6	0.600	0.38
22	B	TR3B226(1)016(2)0400	3.5	6	0.400	0.46
22	C	TR3C226(1)016(2)0375	3.5	6	0.375	0.54
22	C	TR3C226(1)016(2)0350	3.5	6	0.350	0.56

**Note**

- Part number definitions:
  - Capacitance tolerance codes: K, M
  - Terminations and packaging codes: C, D, E, F
  - Lead (Pb)-free terminations and packaging codes: C, D





STANDARD RATINGS						
CAPACITANCE ( $\mu$ F)	CASE CODE	PART NUMBER	MAX. DCL AT + 25 °C ( $\mu$ A)	MAX. DF AT + 25 °C 120 Hz (%)	MAX. ESR AT + 25 °C 100 kHz ( $\Omega$ )	MAX. RIPPLE 100 kHz $I_{RMS}$ (A)
16 V <sub>DC</sub> AT + 85 °C; 10 V <sub>DC</sub> AT + 125 °C						
22	D	TR3D226(1)016(2)0250	3.5	6	0.250	0.77
33	B	TR3B336(1)016(2)0700	5.3	6	0.700	0.35
33	B	TR3B336(1)016(2)0500	5.3	6	0.500	0.41
33	B	TR3B336(1)016(2)0350	5.3	6	0.350	0.49
33	C	TR3C336(1)016(2)0300	5.3	6	0.300	0.61
33	C	TR3C336(1)016(2)0225	5.3	6	0.225	0.70
33	D	TR3D336(1)016(2)0250	5.3	6	0.250	0.77
33	D	TR3D336(1)016(2)0225	5.3	4	0.225	0.82
33	D	TR3D336(1)016(2)0150	5.3	6	0.150	1.00
47	C	TR3C476(1)016(2)0500	7.5	6	0.500	0.47
47	C	TR3C476(1)016(2)0350	7.5	6	0.350	0.56
47	C	TR3C476(1)016(2)0300	7.5	6	0.300	0.61
47	D	TR3D476(1)016(2)0200	7.5	6	0.200	0.87
47	D	TR3D476(1)016(2)0150	7.5	6	0.150	1.00
47	D	TR3D476(1)016(2)0100	7.5	6	0.100	1.22
47	D	TR3D476(1)016(2)0080	7.5	6	0.080	1.37
47	D	TR3D476(1)016(2)0070	7.5	6	0.070	1.46
68	D	TR3D686(1)016(2)0150	10.9	6	0.150	1.00
68	D	TR3D686(1)016(2)0100	10.9	6	0.100	1.22
68	D	TR3D686(1)016(3)0070	10.9	6	0.070	1.46
100	D	TR3D107(1)016(2)0150	16.0	8	0.150	1.00
100	D	TR3D107(1)016(2)0125	16.0	8	0.125	1.10
100	D	TR3D107(1)016(2)0100	16.0	8	0.100	1.22
100	D	TR3D107(1)016(3)0075	16.0	8	0.075	1.41
100	E	TR3E107(1)016(2)0150	16.0	8	0.150	1.05
100	E	TR3E107(1)016(2)0125	16.0	8	0.125	1.15
100	E	TR3E107(1)016(2)0100	16.0	8	0.100	1.28
100	V	TR3V107(1)016(3)0150	16.0	10	0.150	0.91
100	V	TR3V107(1)016(3)0100	16.0	10	0.100	1.12
150	D	TR3D157(1)016(2)0400	24.0	8	0.400	0.61
150	D	TR3D157(1)016(2)0150	24.0	8	0.150	1.00
150	D	TR3D157(1)016(2)0125	24.0	8	0.125	1.10
150	D	TR3D157(1)016(2)0100	24.0	8	0.100	1.22
150	D	TR3D157(1)016(2)0085	24.0	8	0.085	1.33
150	D	TR3D157(1)016(3)0075	24.0	8	0.075	1.41
150	D	TR3D157(1)016(3)0060	24.0	8	0.060	1.58
150	E	TR3E157(1)016(2)0400	24.0	8	0.400	0.64
150	E	TR3E157(1)016(2)0150	24.0	8	0.150	1.05
150	E	TR3E157(1)016(2)0100	24.0	8	0.100	1.28
150	E	TR3E157(1)016(2)0075	24.0	8	0.075	1.48
150	E	TR3E157(1)016(2)0060	24.0	8	0.060	1.66
220	E	TR3E227(1)016(2)0150	35.2	14	0.150	1.05
220	E	TR3E227(1)016(2)0125	35.2	14	0.125	1.15
220	E	TR3E227(1)016(2)0100	35.2	14	0.100	1.28
20 V <sub>DC</sub> AT + 85 °C; 13 V <sub>DC</sub> AT + 125 °C						
1.0	A	TR3A105(1)020(2)5500	0.5	4	5.500	0.12
1.0	A	TR3A105(1)020(2)3000	0.5	4	3.000	0.16
2.2	A	TR3A225(1)020(2)4000	0.5	6	4.000	0.14
2.2	A	TR3A225(1)020(2)3000	0.5	6	3.000	0.16
3.3	A	TR3A335(1)020(2)4000	0.7	6	4.000	0.14
3.3	B	TR3B335(1)020(2)1300	0.7	6	1.300	0.26
4.7	A	TR3A475(1)020(2)3500	0.9	6	3.500	0.15
4.7	A	TR3A475(1)020(2)1800	0.9	6	1.800	0.20
4.7	B	TR3B475(1)020(2)1000	0.9	6	1.000	0.29

**Note**

- Part number definitions:
  - Capacitance tolerance codes: K, M
  - Terminations and packaging codes: C, D, E, F
  - Lead (Pb)-free terminations and packaging codes: C, D



STANDARD RATINGS						
CAPACITANCE ( $\mu$ F)	CASE CODE	PART NUMBER	MAX. DCL AT + 25 °C ( $\mu$ A)	MAX. DF AT + 25 °C 120 Hz (%)	MAX. ESR AT + 25 °C 100 kHz ( $\Omega$ )	MAX. RIPPLE 100 kHz $I_{RMS}$ (A)
20 V <sub>DC</sub> AT + 85 °C; 13 V <sub>DC</sub> AT + 125 °C						
4.7	B	TR3B475(1)020(2)0750	0.9	6	0.750	0.34
6.8	A	TR3A685(1)020(2)3200	1.4	6	3.200	0.15
6.8	A	TR3A685(1)020(2)3000	1.4	6	3.000	0.16
6.8	A	TR3A685(1)020(2)2600	1.4	6	2.600	0.17
6.8	B	TR3B685(1)020(2)1000	1.4	6	1.000	0.29
6.8	B	TR3B685(1)020(2)0600	1.4	6	0.600	0.38
10	B	TR3B106(1)020(2)1000	2.0	6	1.000	0.29
10	B	TR3B106(1)020(2)0500	2.0	6	0.500	0.41
10	C	TR3C106(1)020(2)0700	2.0	6	0.700	0.40
10	C	TR3C106(1)020(2)0500	2.0	6	0.500	0.47
10	C	TR3C106(1)020(2)0475	2.0	6	0.475	0.48
10	C	TR3C106(1)020(2)0450	2.0	6	0.450	0.49
10	C	TR3C106(1)020(2)0400	2.0	6	0.400	0.52
15	B	TR3B156(1)020(2)1000	3.0	6	1.000	0.29
15	B	TR3B156(1)020(2)0500	3.0	6	0.500	0.41
15	C	TR3C156(1)020(2)0400	3.0	6	0.400	0.52
22	B	TR3B226(1)020(2)0800	4.4	6	0.800	0.33
22	B	TR3B226(1)020(2)0600	4.4	6	0.600	0.38
22	B	TR3B226(1)020(2)0400	4.4	6	0.400	0.46
22	C	TR3C226(1)020(2)0400	4.4	6	0.400	0.52
22	C	TR3C226(1)020(2)0375	4.4	6	0.375	0.54
22	D	TR3D226(1)020(2)0300	4.4	6	0.300	0.71
22	D	TR3D226(1)020(2)0225	3.5	4	0.225	0.82
22	D	TR3D226(1)020(2)0200	4.4	6	0.200	0.87
33	C	TR3C336(1)020(2)0350	6.6	6	0.350	0.56
33	C	TR3C336(1)020(2)0300	6.6	6	0.300	0.61
33	C	TR3C336(1)020(2)0200	6.6	6	0.200	0.74
33	D	TR3C336(1)020(2)0400	6.6	6	0.400	0.61
33	D	TR3D336(1)020(2)0250	6.6	6	0.250	0.77
33	D	TR3D336(1)020(2)0200	6.6	6	0.200	0.87
47	D	TR3D476(1)020(2)0200	9.4	6	0.200	0.87
47	D	TR3D476(1)020(2)0175	9.4	6	0.175	0.93
47	D	TR3D476(1)020(2)0150	9.4	6	0.150	1.00
47	D	TR3D476(1)020(3)0100	9.4	6	0.100	1.22
47	E	TR3E476(1)020(2)0150	9.4	6	0.150	1.05
47	E	TR3E476(1)020(3)0125	9.4	6	0.125	1.15
68	D	TR3D686(1)020(2)0200	13.6	6	0.200	0.87
68	D	TR3D686(1)020(2)0175	13.6	6	0.175	0.93
68	D	TR3D686(1)020(2)0150	13.6	6	0.150	1.00
68	D	TR3D686(1)020(2)0115	13.6	6	0.115	1.14
68	E	TR3E686(1)020(2)0200	13.6	6	0.200	0.91
68	E	TR3E686(1)020(2)0150	13.6	6	0.150	1.05
68	E	TR3E686(1)020(2)0125	13.6	6	0.125	1.15
68	E	TR3E686(1)020(2)0120	13.6	6	0.120	1.17
100	D	TR3D107(1)020(2)0200	20.0	8	0.200	0.87
100	D	TR3D107(1)020(2)0150	20.0	8	0.150	1.00
100	D	TR3D107(1)020(2)0100	20.0	8	0.100	1.22
100	D	TR3D107(1)020(3)0085	20.0	8	0.085	1.33
100	D	TR3D107(1)020(3)0080	20.0	8	0.080	1.37
100	E	TR3E107(1)020(2)0200	20.0	8	0.200	0.91

**Note**

- Part number definitions:
  - Capacitance tolerance codes: K, M
  - Terminations and packaging codes: C, D, E, F
  - Lead (Pb)-free terminations and packaging codes: C, D



STANDARD RATINGS						
CAPACITANCE ( $\mu$ F)	CASE CODE	PART NUMBER	MAX. DCL AT + 25 °C ( $\mu$ A)	MAX. DF AT + 25 °C 120 Hz (%)	MAX. ESR AT + 25 °C 100 kHz ( $\Omega$ )	MAX. RIPPLE 100 kHz $I_{RMS}$ (A)
20 V <sub>DC</sub> AT + 85 °C; 13 V <sub>DC</sub> AT + 125 °C						
100	E	TR3E107(1)020(2)0150	20.0	8	0.150	1.05
100	E	TR3E107(1)020(2)0100	20.0	8	0.100	1.28
100	W	TR3W107(1)020(3)0200	20.0	8	0.200	1.12
100	W	TR3W107(1)020(3)0100	20.0	8	0.100	1.58
100	W	TR3W107(1)020(3)0080	20.0	8	0.080	1.77
100	W	TR3W107(1)020(3)0060	20.0	8	0.060	2.04
150	W	TR3W157(1)020(3)0200	30.0	10	0.200	1.12
150	W	TR3W157(1)020(3)0150	30.0	10	0.150	1.29
150	W	TR3W157(1)020(3)0100	30.0	10	0.100	1.58
150	W	TR3W157(1)020(3)0080	30.0	10	0.080	1.77
25 V <sub>DC</sub> AT + 85 °C; 17 V <sub>DC</sub> AT + 125 °C						
1.0	A	TR3A105(1)025(2)4000	0.5	4	4.000	0.14
1.5	A	TR3A155(1)025(2)4000	0.5	6	4.000	0.14
1.5	A	TR3A155(1)025(2)3000	0.5	6	3.000	0.16
2.2	A	TR3A225(1)025(2)4000	0.6	6	4.000	0.14
2.2	B	TR3B225(1)025(2)1500	0.6	6	1.500	0.24
2.2	B	TR3B225(1)025(2)1200	0.6	6	1.200	0.27
2.2	B	TR3B225(1)025(2)0900	0.6	6	0.900	0.31
3.3	A	TR3A335(1)025(2)3500	0.8	6	3.500	0.15
3.3	A	TR3A335(1)025(2)3000	0.8	6	3.000	0.16
3.3	B	TR3B335(1)025(2)2000	0.8	6	2.000	0.21
3.3	B	TR3B335(1)025(2)1500	0.8	6	1.500	0.24
3.3	B	TR3B335(1)025(2)0750	0.8	6	0.750	0.34
4.7	A	TR3A475(1)025(2)3500	1.2	6	3.500	0.15
4.7	A	TR3A475(1)025(2)3000	1.2	6	3.000	0.16
4.7	B	TR3B475(1)025(2)1500	1.2	6	1.500	0.24
4.7	B	TR3B475(1)025(2)1000	1.2	6	1.000	0.29
4.7	B	TR3B475(1)025(2)0900	1.2	6	9.000	0.10
4.7	B	TR3B475(1)025(2)0700	1.2	6	0.700	0.35
4.7	C	TR3C475(1)025(2)0600	1.2	6	0.600	0.43
4.7	C	TR3C475(1)025(2)0525	1.2	6	0.525	0.46
6.8	B	TR3B685(1)025(2)2000	1.7	6	2.000	0.21
6.8	B	TR3B685(1)025(2)1500	1.7	6	1.500	0.24
6.8	B	TR3B685(1)025(2)1200	1.7	6	1.200	0.27
6.8	B	TR3B685(1)025(2)0700	1.7	6	0.700	0.35
6.8	B	TR3B685(1)025(3)0500	1.7	6	0.500	0.41
6.8	B	TR3B685(1)025(3)0400	1.7	6	0.400	0.46
6.8	C	TR3C685(1)025(2)0600	1.7	6	0.600	0.43
6.8	C	TR3C685(1)025(2)0500	1.7	6	0.500	0.47
10	B	TR3B106(1)025(2)1300	2.5	6	1.300	0.26
10	B	TR3B106(1)025(2)1100	2.5	6	1.100	0.28
10	B	TR3B106(1)025(2)0900	2.5	6	0.900	0.31
10	B	TR3B106(1)025(2)0450	2.5	6	0.450	0.43
10	C	TR3C106(1)025(2)0600	2.5	6	0.600	0.43
10	C	TR3C106(1)025(2)0500	2.5	6	0.500	0.47
10	C	TR3C106(1)025(2)0450	2.5	6	0.450	0.49
10	C	TR3C106(1)025(2)0300	2.5	6	0.300	0.61
10	D	TR3D106(1)025(2)0400	2.5	6	0.400	0.61
10	D	TR3D106(1)025(2)0300	2.5	6	0.300	0.71
15	B	TR3B156(1)025(2)1000	3.8	6	1.000	0.29
15	B	TR3B156(1)025(2)0800	3.8	6	0.800	0.33
15	B	TR3B156(1)025(2)0600	3.8	6	0.600	0.38
15	C	TR3C156(1)025(2)0900	3.8	6	0.900	0.35

**Note**

- Part number definitions:
  - Capacitance tolerance codes: K, M
  - Terminations and packaging codes: C, D, E, F
  - Lead (Pb)-free terminations and packaging codes: C, D



STANDARD RATINGS						
CAPACITANCE ( $\mu$ F)	CASE CODE	PART NUMBER	MAX. DCL AT + 25 °C ( $\mu$ A)	MAX. DF AT + 25 °C 120 Hz (%)	MAX. ESR AT + 25 °C 100 kHz ( $\Omega$ )	MAX. RIPPLE 100 kHz $I_{RMS}$ (A)
25 V <sub>DC</sub> AT + 85 °C; 17 V <sub>DC</sub> AT + 125 °C						
15	C	TR3C156(1)025(2)0425	3.8	6	0.425	0.51
15	D	TR3D156(1)025(2)0350	3.8	6	0.350	0.65
15	D	TR3D156(1)025(2)0275	3.8	6	0.275	0.74
15	D	TR3D156(1)025(2)0250	3.8	6	0.250	0.77
15	D	TR3D156(1)025(2)0200	3.8	6	0.200	0.87
22	C	TR3C226(1)025(2)1000	5.5	6	1.000	0.33
22	C	TR3C226(1)025(2)0900	5.5	6	0.900	0.35
22	C	TR3C226(1)025(2)0400	5.5	6	0.400	0.52
22	C	TR3C226(1)025(2)0425	5.5	6	0.425	0.51
22	C	TR3C226(1)025(2)0300	5.5	6	0.300	0.61
22	C	TR3C226(1)025(2)0275	5.5	6	0.275	0.63
22	C	TR3C226(1)025(2)0250	5.5	6	0.250	0.66
22	D	TR3D226(1)025(2)0300	5.5	6	0.300	0.71
22	D	TR3D226(1)025(2)0200	5.5	6	0.200	0.87
22	E	TR3E226(1)025(2)0300	5.5	6	0.300	0.74
22	E	TR3E226(1)025(2)0200	5.5	6	0.200	0.91
22	V	TR3V226(1)025(3)0500	5.5	6	0.500	0.50
22	V	TR3V226(1)025(3)0400	5.5	6	0.400	0.56
22	V	TR3V226(1)025(3)0250	5.5	6	0.250	0.71
33	D	TR3D336(1)025(2)0400	8.3	6	0.400	0.61
33	D	TR3D336(1)025(2)0300	8.3	6	0.300	0.71
33	D	TR3D336(1)025(2)0225	8.3	6	0.225	0.82
33	D	TR3D336(1)025(2)0200	8.3	6	0.200	0.87
33	E	TR3E336(1)025(2)0300	8.3	6	0.300	0.74
33	E	TR3E336(1)025(2)0200	8.3	6	0.200	0.91
33	E	TR3E336(1)025(2)0175	6.6	4	0.175	0.97
47	D	TR3D476(1)025(2)0350	11.8	8	0.350	0.65
47	D	TR3D476(1)025(2)0250	11.8	8	0.250	0.77
47	D	TR3D476(1)025(2)0200	11.8	8	0.200	0.87
47	D	TR3D476(1)025(2)0150	11.8	8	0.150	1.00
47	D	TR3D476(1)025(3)0125	11.8	8	0.125	1.10
47	D	TR3D476(1)025(3)0100	11.8	8	0.100	1.22
47	E	TR3E476(1)025(2)0300	11.8	6	0.300	0.74
47	E	TR3E476(1)025(2)0200	11.8	6	0.200	0.91
47	E	TR3E476(1)025(2)0150	11.8	8	0.150	1.05
47	E	TR3E476(1)025(3)0125	11.8	8	0.125	1.15
47	E	TR3E476(1)025(3)0100	11.8	8	0.100	1.28
68	E	TR3E686(1)025(2)0250	17.0	8	0.250	0.81
68	E	TR3E686(1)025(3)0125	17.0	8	0.125	1.15
68	W	TR3W686(1)025(3)0200	17.0	6	0.200	1.12
68	W	TR3W686(1)025(3)0150	17.0	6	0.150	1.29
68	W	TR3W686(1)025(3)0095	17.0	6	0.095	1.62
100	W	TR3W107(1)025(3)0200	25.0	15	0.200	1.12
100	W	TR3W107(1)025(3)0150	25.0	15	0.150	1.29
100	W	TR3W107(1)025(3)0100	25.0	15	0.100	1.58
35 V <sub>DC</sub> AT + 85 °C; 23 V <sub>DC</sub> AT + 125 °C						
0.47	A	TR3A474(1)035(2)4000	0.5	4	4.000	0.14
0.68	A	TR3A684(1)035(2)6000	0.5	4	6.000	0.11
0.68	A	TR3A684(1)035(2)4000	0.5	4	4.000	0.14
1.0	A	TR3A105(1)035(2)6000	0.5	4	6.000	0.11
1.0	A	TR3A105(1)035(2)4000	0.5	4	4.000	0.14
1.0	A	TR3A105(1)035(2)3000	0.5	4	3.000	0.16
1.0	B	TR3B105(1)035(2)2000	0.5	4	2.000	0.21

**Note**

- Part number definitions:
  - Capacitance tolerance codes: K, M
  - Terminations and packaging codes: C, D, E, F
  - Lead (Pb)-free terminations and packaging codes: C, D



STANDARD RATINGS						
CAPACITANCE ( $\mu$ F)	CASE CODE	PART NUMBER	MAX. DCL AT + 25 °C ( $\mu$ A)	MAX. DF AT + 25 °C 120 Hz (%)	MAX. ESR AT + 25 °C 100 kHz ( $\Omega$ )	MAX. RIPPLE 100 kHz $I_{RMS}$ (A)
35 V <sub>DC</sub> AT + 85 °C; 23 V <sub>DC</sub> AT + 125 °C						
1.0	B	TR3B105(1)035(2)1700	0.5	4	1.700	0.22
1.0	B	TR3B105(1)035(2)1500	0.5	4	1.500	0.24
1.5	B	TR3B155(1)035(2)3000	0.5	6	3.000	0.17
1.5	B	TR3B155(1)035(2)2000	0.5	6	2.000	0.21
1.5	C	TR3C155(1)035(2)2500	0.5	6	2.500	0.21
1.5	C	TR3C155(1)035(2)0900	0.5	6	0.900	0.35
2.2	B	TR3B225(1)035(2)2500	0.8	6	2.500	0.18
2.2	B	TR3B225(1)035(2)2000	0.8	6	2.000	0.21
2.2	B	TR3B225(1)035(2)1500	0.8	6	1.500	0.24
2.2	C	TR3C225(1)035(2)1500	0.8	6	1.500	0.27
2.2	C	TR3C225(1)035(2)0900	0.8	6	0.900	0.35
3.3	B	TR3B335(1)035(2)1500	1.2	6	1.500	0.24
3.3	B	TR3B335(1)035(2)1000	1.2	6	1.000	0.29
3.3	C	TR3C335(1)035(2)0800	1.2	6	0.800	0.37
3.3	C	TR3C335(1)035(2)0700	1.2	6	0.700	0.40
3.3	C	TR3C335(1)035(2)0600	1.2	6	0.600	0.43
4.7	B	TR3B475(1)035(2)1500	1.6	6	1.500	0.24
4.7	B	TR3B475(1)035(2)1000	1.6	6	1.000	0.29
4.7	B	TR3B475(1)035(2)0700	1.6	6	0.700	0.35
4.7	C	TR3C475(1)035(2)0700	1.6	6	0.700	0.40
4.7	C	TR3C475(1)035(2)0600	1.6	6	0.600	0.43
4.7	C	TR3C475(1)035(2)0500	1.6	6	0.500	0.47
4.7	D	TR3D475(1)035(2)0700	1.6	6	0.700	0.46
6.8	C	TR3C685(1)035(2)0900	2.4	6	0.900	0.35
6.8	C	TR3C685(1)035(2)0475	2.4	6	0.475	0.48
6.8	D	TR3D685(1)035(2)0500	2.4	6	0.500	0.55
6.8	D	TR3D685(1)035(2)0400	2.4	6	0.400	0.61
6.8	D	TR3D685(1)035(2)0300	2.4	6	0.300	0.71
6.8	E	TR3E685(1)035(2)0300	2.4	4	0.300	0.74
10	C	TR3C106(1)035(2)1200	3.5	6	1.200	0.30
10	C	TR3C106(1)035(2)0450	3.5	6	0.450	0.49
10	D	TR3D106(1)035(2)0400	3.5	6	0.400	0.61
10	D	TR3D106(1)035(2)0300	3.5	6	0.300	0.71
10	D	TR3D106(1)035(2)0260	3.5	6	0.260	0.76
10	D	TR3D106(1)035(2)0250	3.5	6	0.250	0.77
10	D	TR3D106(1)035(2)0200	3.5	6	0.200	0.87
10	D	TR3D106(1)035(3)0135	3.5	6	0.135	1.05
10	D	TR3D106(1)035(3)0125	3.5	6	0.125	1.10
10	E	TR3E106(1)035(2)0250	3.5	6	0.250	0.81
10	E	TR3E106(1)035(2)0200	3.5	6	0.200	0.91
15	D	TR3D156(1)035(2)0350	5.3	6	0.350	0.65
15	D	TR3D156(1)035(2)0300	5.3	6	0.300	0.71
15	D	TR3D156(1)035(2)0260	5.3	6	0.260	0.76
15	D	TR3D156(1)035(2)0225	5.3	6	0.225	0.82
15	D	TR3D156(1)035(2)0200	5.3	6	0.200	0.87
15	D	TR3D156(1)035(2)0150	5.3	6	0.150	1.00
15	E	TR3E156(1)035(2)0300	5.3	6	0.300	0.74
15	E	TR3E156(1)035(2)0225	5.3	6	0.225	0.86
15	E	TR3E156(1)035(2)0200	5.3	6	0.200	0.91
15	E	TR3E156(1)035(2)0150	5.3	6	0.150	1.05
22	D	TR3D226(1)035(2)0400	7.7	6	0.400	0.61
22	D	TR3D226(1)035(2)0300	7.7	6	0.300	0.71

**Note**

- Part number definitions:
  - Capacitance tolerance codes: K, M
  - Terminations and packaging codes: C, D, E, F
  - Lead (Pb)-free terminations and packaging codes: C, D



STANDARD RATINGS						
CAPACITANCE ( $\mu$ F)	CASE CODE	PART NUMBER	MAX. DCL AT + 25 °C ( $\mu$ A)	MAX. DF AT + 25 °C 120 Hz (%)	MAX. ESR AT + 25 °C 100 kHz ( $\Omega$ )	MAX. RIPPLE 100 kHz $I_{RMS}$ (A)
35 V <sub>DC</sub> AT + 85 °C; 23 V <sub>DC</sub> AT + 125 °C						
22	D	TR3D226(1)035(2)0275	7.7	6	0.275	0.74
22	D	TR3D226(1)035(2)0250	7.7	6	0.250	0.77
22	D	TR3D226(1)035(2)0200	7.7	6	0.200	0.87
22	E	TR3E226(1)035(2)0300	7.7	6	0.300	0.74
22	E	TR3E226(1)035(2)0275	7.7	6	0.275	0.77
22	E	TR3E226(1)035(2)0260	7.7	6	0.260	0.80
22	E	TR3E226(1)035(2)0200	7.7	6	0.200	0.91
50 V <sub>DC</sub> AT + 85 °C; 33 V <sub>DC</sub> AT + 125 °C						
1.0	B	TR3B105(1)050(2)4000	0.5	4	4.000	0.15
1.0	B	TR3B105(1)050(2)2000	0.5	4	2.000	0.21
1.0	C	TR3C105(1)050(2)1600	0.5	4	1.600	0.26
1.5	B	TR3B155(1)050(2)2000	0.8	6	2.000	0.21
1.5	C	TR3C155(1)050(2)1500	0.8	6	1.500	0.27
2.2	B	TR3B225(1)050(2)2000	1.1	6	2.000	0.21
2.2	C	TR3C225(1)050(2)1500	1.1	6	1.500	0.27
2.2	D	TR3D225(1)050(2)0800	1.1	6	0.800	0.43
3.3	C	TR3C335(1)050(2)1500	1.7	6	1.500	0.27
3.3	D	TR3D335(1)050(2)0800	1.7	6	0.800	0.43
4.7	C	TR3C475(1)050(2)1000	2.4	6	1.000	0.33
4.7	C	TR3C475(1)050(2)0700	2.4	6	0.700	0.40
4.7	C	TR3C475(1)050(2)0500	2.4	6	0.500	0.47
4.7	D	TR3D475(1)050(2)0700	2.4	6	0.700	0.46
4.7	D	TR3D475(1)050(2)0600	2.4	6	0.600	0.50
4.7	D	TR3D475(1)050(2)0500	2.4	6	0.500	0.55
4.7	D	TR3D475(1)050(2)0300	2.4	6	0.300	0.71
4.7	E	TR3E475(1)050(2)0600	2.4	4	0.600	0.52
4.7	E	TR3E475(1)050(2)0300	2.4	4	0.300	0.74
6.8	D	TR3D685(1)050(2)0700	3.4	6	0.700	0.46
6.8	D	TR3D685(1)050(2)0600	3.4	6	0.600	0.50
6.8	D	TR3D685(1)050(2)0500	3.4	6	0.500	0.55
6.8	D	TR3D685(1)050(2)0300	3.4	6	0.300	0.71
6.8	E	TR3E685(1)050(2)0550	3.4	6	0.550	0.55
6.8	E	TR3E685(1)050(2)0500	3.4	6	0.500	0.57
10	D	TR3D106(1)050(2)0700	5.0	6	0.700	0.46
10	D	TR3D106(1)050(2)0550	5.0	6	0.550	0.52
10	D	TR3D106(1)050(2)0450	5.0	6	0.450	0.58
10	E	TR3E106(1)050(2)0700	5.0	6	0.700	0.49
10	E	TR3E106(1)050(2)0550	5.0	6	0.550	0.55
10	E	TR3E106(1)050(2)0500	5.0	6	0.500	0.57
10	E	TR3E106(1)050(2)0400	5.0	6	0.400	0.64
10	E	TR3E106(1)050(2)0300	5.0	6	0.300	0.74
15	E	TR3E156(1)050(2)0400	7.5	6	0.400	0.64
15	E	TR3E156(1)050(3)0300	7.5	6	0.300	0.74
63 V <sub>DC</sub> AT + 85 °C; 40 V <sub>DC</sub> AT + 125 °C						
4.7	D	TR3D475(1)063(2)0700	3.0	6	0.700	0.46
10	E	TR3E106(1)063(2)0600	6.3	6	0.600	0.52

**Note**

- Part number definitions:
  - Capacitance tolerance codes: K, M
  - Terminations and packaging codes: C, D, E, F
  - Lead (Pb)-free terminations and packaging codes: C, D



**RECOMMENDED VOLTAGE DERATING GUIDELINES** (for temperatures below + 85 °C)

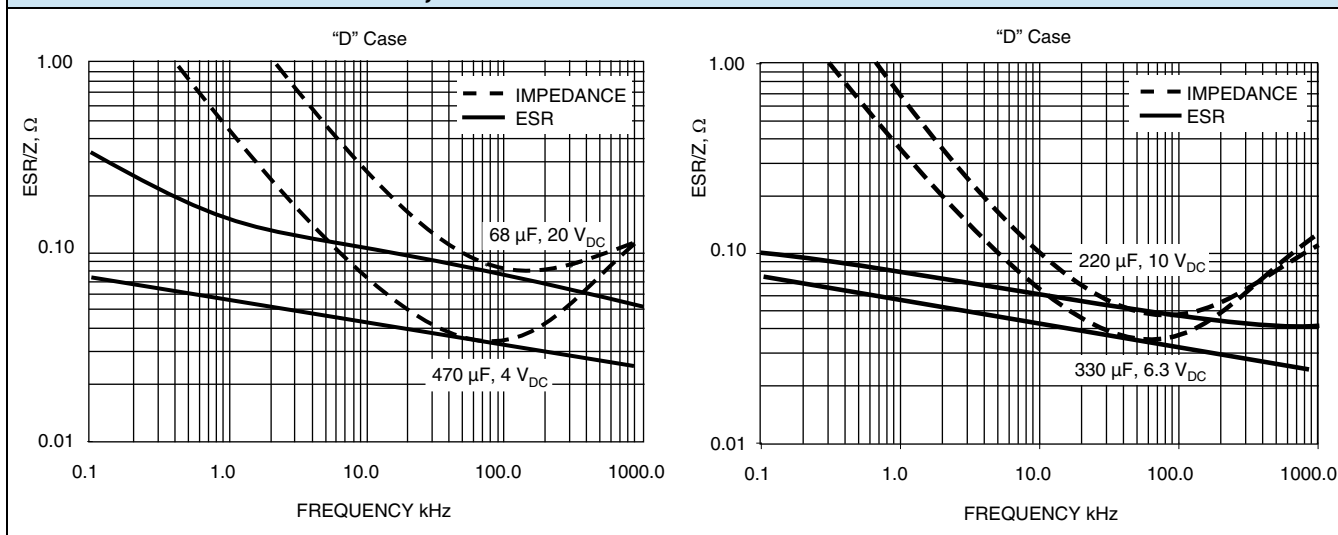
**STANDARD CONDITIONS. FOR EXAMPLE: OUTPUT FILTERS**

Capacitor Voltage Rating	Operating Voltage
4.0	2.5
6.3	3.6
10	6.0
16	10
20	12
25	15
35	24
50	28
63	38

**SEVERE CONDITIONS. FOR EXAMPLE: INPUT FILTERS**

Capacitor Voltage Rating	Operating Voltage
4.0	2.5
6.3	3.3
10	5.0
16	8.0
20	10
25	12
35	15
50	24
63	32

**TYPICAL CURVES AT + 25 °C, IMPEDANCE AND ESR VS. FREQUENCY**





**POWER DISSIPATION**

CASE CODE	MAXIMUM PERMISSIBLE POWER DISSIPATION AT + 25 °C (W) IN FREE AIR
A	0.075
B	0.085
C	0.110
D	0.150
E	0.165
V	0.125
W	0.250

**STANDARD PACKAGING QUANTITY**

CASE CODE	UNITS PER REEL	
	7" REEL	13" REEL
A	2000	9000
B	2000	8000
C	500	3000
D	500	2500
E	400	1500
V	1000	5000
W	500	2000

**PRODUCT INFORMATION**

Guide for Molded Tantalum Capacitors	<a href="http://www.vishay.com/doc?40074">www.vishay.com/doc?40074</a>
Pad Dimensions	
Packaging Dimensions	
Moisture Sensitivity	<a href="http://www.vishay.com/doc?40135">www.vishay.com/doc?40135</a>
<b>SELECTOR GUIDES</b>	
Solid Tantalum Selector Guide	<a href="http://www.vishay.com/doc?49053">www.vishay.com/doc?49053</a>
Solid Tantalum Chip Capacitors	<a href="http://www.vishay.com/doc?40091">www.vishay.com/doc?40091</a>
<b>FAQ</b>	
Frequently Asked Questions	<a href="http://www.vishay.com/doc?40110">www.vishay.com/doc?40110</a>



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**Please note that some Vishay documentation may still make reference to RoHS Directive 2002/95/EC. We confirm that all the products identified as being compliant to Directive 2002/95/EC conform to Directive 2011/65/EU.**

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