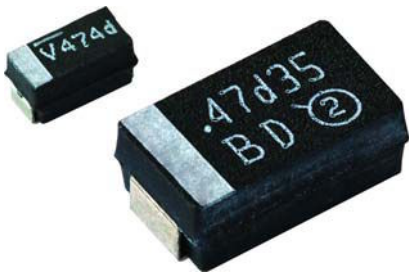
Solid Tantalum Surface Mount, TANTAMOUNT®, Molded Case, Very Low DCL



FEATURES

- Terminations: 100 % matte tin and tin/lead
- Molded case available in five case codes
- Compatible with “High Volume” automatic pick and place equipment
- 100 % surge current tested (B, C, D and E case sizes)
- Improved reliability: 0.50 %/1000 h, 85 °C, rated voltage
- Standard EIA 535BAAC case size (A through E)
- DC leakage at 0.005 CV
- Low ESR options
- Mounting: Surface mount
- Compliant to RoHS Directive 2011/65/EU
- Halogen-free according to IEC 61249-2-21 definition
- Moisture sensitivity level 1

Pb-free Available

RoHS* COMPLIANT

HALOGEN FREE Available

Note

* Pb containing terminations are not RoHS compliant, exemptions may apply

PERFORMANCE/ELECTRICAL CHARACTERISTICS

www.vishay.com/doc?40088

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

Capacitance Range: 0.1 µF to 470 µF
Capacitance Tolerance: ± 10 %, ± 20 %
Voltage Rating: 4 V to 50 V

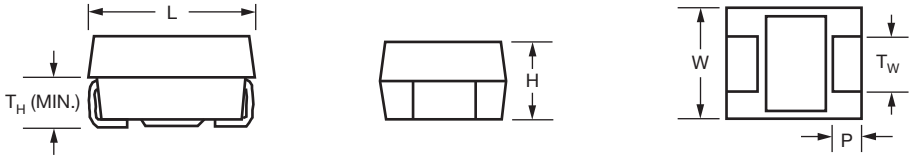
ORDERING INFORMATION

TL3	D	107	K	010	C	0100
TYPE	CASE CODE	CAPACITANCE	CAPACITANCE TOLERANCE	DC VOLTAGE RATING AT + 85 °C	TERMINATION AND PACKAGING	ESR
	See Ratings and Case Codes table.	This is expressed in picofarads. The first two digits are significant figures. The third is the number of zeros to follow.	K = ± 10 % M = ± 20 %	This is expressed in volts. 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.
- The EIA and CECC standards for 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.

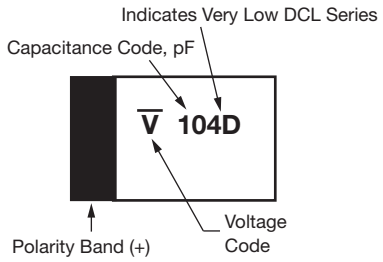
DIMENSIONS in inches [millimeters]



CASE CODE	EIA SIZE	L	W	H	P	T_W	T_H (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]	0.169 ± 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]

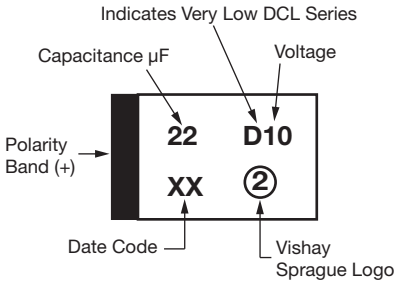
RATINGS AND CASE CODES								
µF	4 V	6.3 V	10 V	16 V	20 V	25 V	35 V	50 V
0.10							A (20.00, 10.00)	A (19.00, 10.00)
0.15							A (18.00, 6.00)	A (17.00, 10.00)/ B (14.00, 9.00)
0.22							A (15.00, 6.00)	B (12.00, 8.50)
0.33						A (14.00, 10.00)	A (13.00, 6.00)	B (10.00, 4.50)
0.47					A (12.00, 9.00)	A (12.00, 9.00)	A (10.00, 4.00)/ B (8.00, 2.50)	B (8.40, 4.00)/ C (6.70, 1.80)
0.68				A (11.00, 8.00)	A (10.00, 8.00)	B (7.00, 5.00)	B (6.50, 2.50)	C (5.90, 1.60)
1.0			A (9.30, 6.00)	A (9.30, 6.00)	A (8.40, 5.50)	A (7.60, 4.00)/ B (5.00, 2.00)	A (7.50, 6.00)/ B (5.00, 2.00)	B (6.70, 2.00)/ C (4.60, 1.60)
1.5		A (8.00, 6.00)	A (8.00, 6.00)	A (8.00, 6.00)	B (4.60, 2.50)	B (4.60, 2.00)	B (4.20, 3.00)/ C (3.80, 1.50)	C (3.40, 1.50)/ D (2.90, 1.00)
2.2	A (7.60, 6.00)	A (7.60, 6.00)		B (4.60, 2.50)	A (5.90, 4.00)/ B (3.50, 1.50)	A (6.30, 4.00)/ B (3.80, 2.30)/ C (2.90, 1.00)	B (3.80, 2.30)/ C (2.90, 0.90)	C (2.90, 1.50)/ D (2.10, 0.80)
3.3	A (7.60, 4.00)	A (6.30, 5.00)	B (3.50, 2.50)	B (3.50, 2.00)	B (3.00, 1.30)	B (3.10, 1.50)/ C (2.30, 1.00)	B (3.50, 1.50)/ C (2.10, 0.70)	D (1.70, 0.80)
4.7	A (6.30, 3.50)	A (5.50, 3.50)/ B (3.40, 1.80)	A (5.00, 3.00)/ B (3.40, 1.50)	A (3.50, 2.50)/ B (2.90, 1.50)	A (5.50, 3.50)/ B (2.90, 1.00)/ C (2.30, 0.60)	B (2.80, 1.50)/ C (2.0, 0.525)	C (1.90, 0.60)/ D (1.30, 0.60)	D (1.20, 0.60)
6.8	B (4.50, 2.00)	B (3.40, 1.20)	B (2.90, 1.20)	C (1.90, 0.60)	C (1.90, 0.55)	C (1.70, 0.50)/ D (1.20, 0.35)	C (1.80, 0.900)/ D (1.10, 0.30)	E (0.90, 0.54)
10	B (3.50, 1.20)	B (2.90, 1.00)	A (3.40, 2.00)/ C (1.80, 0.55)	A (3.00, 1.70)/ B (2.80, 0.80)/ C (1.80, 0.45)	B (2.50, 1.00)/ C (1.70, 0.45)	B (2.30, 1.30)/ C (1.50, 0.45)/ D (1.00, 0.30)	C (1.60, 0.85)/ D (0.80, 0.30)	E (0.80, 0.55)
15	B (2.90, 1.20)	C (1.80, 0.60)	A (2.90, 2.00)/ C (1.80, 0.50)	B (2.00, 0.80)	D (0.90, 0.30)	C (1.20, 0.425)/ D (0.80, 0.25)	D (0.80, 0.30)	
22		A (2.90, 2.00)/ C (1.80, 0.60)	A (2.50, 1.50)	B (1.90, 1.00)/ D (0.80, 0.25)	C (1.20, 0.375)/ D (0.70, 0.225)	D (0.70, 0.20)	D (0.70, 0.40)/ E (0.60, 0.300)	
33	A (2.90, 1.50)/ C (1.80, 050)	B (1.90, 0.60)/ C (1.50, 0.40)	B (1.90, 0.60)/ C (1.40, 0.35)/ D (0.80, 0.25)	B (1.80, 0.50)/ C (1.10, 0.30)/ D (0.70, 0.225)	D (0.70, 0.20)	D (0.70, 0.30)/ E (0.60, 0.20)		
47	B (2.50, 0.60)/ C (1.80, 0.40)	B (2.00, 0.55)/ C (1.40, 0.30)/ D (0.80, 0.20)	B (1.80, 0.60)/ C (1.10, 0.30)/ D (0.70, 0.20)	C (1.00, 0.30)/ D (0.70, 0.15)	D (0.70, 0.20)/ E (0.60, 0.15)	D (0.70, 0.35)/ E (0.60, 0.30)		
68	D (0.80, 0.175)	D (0.70, 0.20)	D (0.70, 0.15)	D (0.60, 0.15)	D (0.70, 0.175)/ E (0.60, 0.15)			
100	B (1.80, 0.45)/ D (0.70, 0.175)	B (1.70, 0.70)/ D (0.70, 0.14)	C (0.90, 0.20)/ D (0.60, 0.10)	D (0.60, 0.125)/ E (0.60, 0.10)	E (0.50, 0.15)			
150	D (0.60, 0.15)	D (0.60, 0.125)/ E (0.50, 0.10)	D (0.60, 0.10)	E (0.50, 0.15)				
220		C (0.70, 0.30)/ D (0.60, 0.10)/ E (0.50, 0.10)	D (0.60, 0.36)/ E (0.50, 0.10)					
330	E (0.50, 0.10)	E (0.50, 0.10)	E (0.50, 0.10)					
470			E (0.50, 0.20)					

MARKING



A Case

"A" CASE VOLTAGE CODE	
VOLTS	CODE
4.0	G
6.3	J
10	A
16	C
20	D
25	E
35	V
50	T



B, C, D, E Cases

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 (µF)	CASE CODE	PART NUMBER	MAX. DC LEAKAGE AT + 25 °C (µA)	MAX. DF AT + 25 °C 120 Hz (%)	MAX. ESR AT + 25 °C 100 kHz (Ω)	MAX. RIPPLE 100 kHz I_{RMS} (A)
4 V_{DC} AT + 85 °C; 2.7 V_{DC} AT + 125 °C						
2.2	A	TL3A225(1)004(2)7600	0.25	6	7.600	0.10
2.2	A	TL3A225(1)004(2)6000	0.25	6	6.000	0.11
3.3	A	TL3A335(1)004(2)7600	0.25	6	7.600	0.10
3.3	A	TL3A335(1)004(2)4000	0.25	6	4.000	0.14
4.7	A	TL3A475(1)004(2)6300	0.25	6	6.300	0.11
4.7	A	TL3A475(1)004(2)3500	0.25	6	3.500	0.15
6.8	B	TL3B685(1)004(2)4500	0.25	6	4.500	0.14
6.8	B	TL3B685(1)004(2)2000	0.25	6	2.000	0.20
10	B	TL3B106(1)004(2)3500	0.25	6	3.500	0.16
10	B	TL3B106(1)004(2)1200	0.25	6	1.200	0.27
15	B	TL3B156(1)004(2)2900	0.30	6	2.900	0.17
15	B	TL3B156(1)004(2)1200	0.30	6	1.200	0.27
33	A	TL3A336(1)004(2)2900	0.66	6	2.900	0.16
33	A	TL3A336(1)004(2)1500	0.66	6	1.500	0.22
33	C	TL3C336(1)004(2)1800	0.66	6	1.800	0.25
33	C	TL3C336(1)004(2)0500	0.66	6	0.500	0.47
47	B	TL3B476(1)004(2)2500	0.94	6	2.500	0.18
47	B	TL3B476(1)004(2)0600	0.94	6	0.600	0.38
47	C	TL3C476(1)004(2)1800	0.94	6	1.800	0.25
47	C	TL3C476(1)004(2)0400	0.94	6	0.400	0.52
68	D	TL3D686(1)004(2)0800	1.36	6	0.800	0.43
68	D	TL3D686(1)004(2)0175	1.36	6	0.175	0.93
100	B	TL3B107(1)004(2)1800	2.00	6	1.800	0.22
100	B	TL3B107(1)004(2)0450	2.00	6	0.450	0.43
100	D	TL3D107(1)004(2)0700	2.00	6	0.700	0.46
100	D	TL3D107(1)004(2)0175	2.00	6	0.175	0.93
150	D	TL3D157(1)004(2)0600	3.00	8	0.600	0.50
150	D	TL3D157(1)004(2)0150	3.00	8	0.150	1.00
330	E	TL3E337(1)004(2)0500	6.60	8	0.500	0.57
330	E	TL3E337(1)004(2)0100	6.60	8	0.100	1.28

Note
- Part number definitions:
  (1) Capacitance tolerance: K, M
  (2) Termination and packaging: C, D, E, F

STANDARD RATINGS

CAPACITANCE (µF)	CASE CODE	PART NUMBER	MAX. DC LEAKAGE AT + 25 °C (µA)	MAX. DF AT + 25 °C 120 Hz (%)	MAX. ESR AT + 25 °C 100 kHz (Ω)	MAX. RIPPLE 100 kHz I_{RMS} (A)
		6 V_{DC} AT + 85 °C; 4 V_{DC} AT + 125 °C				
1.5	A	TL3A155(1)6R3(2)8000	0.25	6	8.000	0.10
1.5	A	TL3A155(1)6R3(2)6000	0.25	6	6.000	0.11
2.2	A	TL3A225(1)6R3(2)7600	0.25	6	7.600	0.10
2.2	A	TL3A225(1)6R3(2)6000	0.25	6	6.000	0.11
3.3	A	TL3A335(1)6R3(2)6300	0.25	6	6.300	0.11
3.3	A	TL3A335(1)6R3(2)5000	0.25	6	5.000	0.12
4.7	A	TL3A475(1)6R3(2)5500	0.25	6	5.500	0.12
4.7	A	TL3A475(1)6R3(2)3500	0.25	6	3.500	0.15
4.7	B	TL3B475(1)6R3(2)3400	0.25	6	3.400	0.16
4.7	B	TL3B475(1)6R3(2)1800	0.25	6	1.800	0.22
6.8	B	TL3B685(1)6R3(2)3400	0.25	6	3.400	0.16
6.8	B	TL3B685(1)6R3(2)1200	0.25	6	1.200	0.27
10	B	TL3B106(1)6R3(2)2900	0.30	6	2.900	0.17
10	B	TL3B106(1)6R3(2)1000	0.3	6	1.000	0.29
15	C	TL3C156(1)6R3(2)1800	0.45	6	1.800	0.25
15	C	TL3C156(1)6R3(2)0600	0.45	6	0.600	0.43
22	A	TL3A226(1)6R3(2)2900	0.66	6	2.900	0.16
22	A	TL3A226(1)6R3(2)2000	0.66	6	2.000	0.19
22	C	TL3C226(1)6R3(2)1800	0.66	6	1.800	0.25
22	C	TL3C226(1)6R3(2)0600	0.66	6	0.600	0.43
33	B	TL3B336(1)6R3(2)1900	0.99	6	1.900	0.21
33	B	TL3B336(1)6R3(2)0600	0.99	6	0.600	0.38
33	C	TL3C336(1)6R3(2)1500	0.99	6	1.500	0.27
33	C	TL3C336(1)6R3(2)0400	0.99	6	0.400	0.52
47	B	TL3B476(1)6R3(2)2000	1.41	6	2.000	0.21
47	B	TL3B476(1)6R3(2)0550	1.41	6	0.550	0.39
47	C	TL3C476(1)6R3(2)1400	1.41	6	1.400	0.28
47	C	TL3C476(1)6R3(2)0300	1.41	6	0.300	0.61
47	D	TL3D476(1)6R3(2)0800	1.41	6	0.800	0.43
47	D	TL3D476(1)6R3(2)0200	1.41	6	0.200	0.87
68	D	TL3D686(1)6R3(2)0700	2.04	6	0.700	0.46
68	D	TL3D686(1)6R3(2)0200	2.04	6	0.200	0.87
100	B	TL3B107(1)6R3(2)1700	3.00	15	1.700	0.22
100	B	TL3B107(1)6R3(2)0700	3.00	15	0.700	0.35
100	D	TL3D107(1)6R3(2)0700	3.00	6	0.700	0.46
100	D	TL3D107(1)6R3(2)0140	3.00	6	0.140	1.04
150	D	TL3D157(1)6R3(2)0600	4.50	8	0.600	0.50
150	D	TL3D157(1)6R3(2)0125	4.50	8	0.125	1.10
150	E	TL3E157(1)6R3(2)0500	4.50	8	0.500	0.57
150	E	TL3E157(1)6R3(2)0100	4.50	8	0.100	1.28
220	C	TL3C227(1)6R3(2)0700	6.60	14	0.700	0.40
220	C	TL3C227(1)6R3(2)0300	6.60	14	0.300	0.61
220	D	TL3D227(1)6R3(2)0600	6.60	8	0.600	0.50
220	D	TL3D227(1)6R3(2)0100	6.60	8	0.100	1.22
220	E	TL3E227(1)6R3(2)0500	6.60	8	0.500	0.57
220	E	TL3E227(1)6R3(2)0100	6.60	8	0.100	1.28
330	E	TL3E337(1)6R3(2)0500	9.90	8	0.500	0.57
330	E	TL3E337(1)6R3(2)0100	9.90	8	0.100	1.28

Note

- Part number definitions:
  (1) Capacitance tolerance: K, M
  (2) Termination and packaging: C, D, E, F

STANDARD RATINGS

CAPACITANCE (µF)	CASE CODE	PART NUMBER	MAX. DC LEAKAGE AT + 25 °C (µA)	MAX. DF AT + 25 °C 120 Hz (%)	MAX. ESR AT + 25 °C 100 kHz (Ω)	MAX. RIPPLE 100 kHz I_{RMS} (A)
10 V_{DC} AT + 85 °C; 7 V_{DC} AT + 125 °C						
1.0	A	TL3A105(1)010(2)9300	0.25	4	9.300	0.09
1.0	A	TL3A105(1)010(2)6000	0.25	4	6.000	0.11
1.5	A	TL3A155(1)010(2)8000	0.25	6	8.000	0.10
1.5	A	TL3A155(1)010(2)6000	0.25	6	6.000	0.11
3.3	B	TL3B335(1)010(2)3500	0.25	6	3.500	0.16
3.3	B	TL3B335(1)010(2)2500	0.25	6	2.500	0.18
4.7	A	TL3A475(1)010(2)5000	0.25	6	5.000	0.12
4.7	A	TL3A475(1)010(2)3000	0.25	6	3.000	0.16
4.7	B	TL3B475(1)010(2)3400	0.25	6	3.400	0.16
4.7	B	TL3B475(1)010(2)1500	0.25	6	1.500	0.24
6.8	B	TL3B685(1)010(2)2900	0.34	6	2.900	0.17
6.8	B	TL3B685(1)010(2)1200	0.34	6	1.200	0.27
10	A	TL3A106(1)010(2)3400	0.50	6	3.400	0.15
10	A	TL3A106(1)010(2)2000	0.50	6	2.000	0.19
10	C	TL3C106(1)010(2)1800	0.50	6	1.800	0.25
10	C	TL3C106(1)010(2)0550	0.50	6	0.550	0.45
15	A	TL3A156(1)010(2)2900	0.75	6	2.900	0.16
15	A	TL3A156(1)010(2)2000	0.75	6	2.000	0.19
15	C	TL3C156(1)010(2)1800	0.75	6	1.800	0.25
15	C	TL3C156(1)010(2)0500	0.75	6	0.500	0.47
22	A	TL3A226(1)010(2)2500	1.10	8	2.500	0.17
22	A	TL3A226(1)010(2)1500	1.10	8	1.500	0.22
33	B	TL3B336(1)010(2)1900	1.65	6	1.900	0.21
33	B	TL3B336(1)010(2)0600	1.65	6	0.600	0.38
33	C	TL3C336(1)010(2)1400	1.65	6	1.400	0.28
33	C	TL3C336(1)010(2)0350	1.65	6	0.350	0.56
33	D	TL3D336(1)010(2)0800	1.65	6	0.800	0.43
33	D	TL3D336(1)010(2)0250	1.65	6	0.250	0.77
47	B	TL3B476(1)010(2)1800	2.35	6	1.800	0.22
47	B	TL3B476(1)010(2)0600	2.35	6	0.600	0.38
47	C	TL3C476(1)010(2)1100	2.35	6	1.100	0.32
47	C	TL3C476(1)010(2)0300	2.35	6	0.300	0.61
47	D	TL3D476(1)010(2)0700	2.35	6	0.700	0.46
47	D	TL3D476(1)010(2)0200	2.35	6	0.200	0.87
68	D	TL3D686(1)010(2)0700	3.40	6	0.700	0.46
68	D	TL3D686(1)010(2)0150	3.40	6	0.150	1.00
100	C	TL3C107(1)010(2)0900	5.00	8	0.900	0.35
100	C	TL3C107(1)010(2)0200	5.00	8	0.200	0.74
100	D	TL3D107(1)010(2)0600	5.00	8	0.600	0.50
100	D	TL3D107(1)010(2)0100	5.00	8	0.100	1.22
150	D	TL3D157(1)010(2)0600	7.50	8	0.600	0.50
150	D	TL3D157(1)010(2)0100	7.50	8	0.100	1.22
220	D	TL3D227(1)010(2)0600	11.00	8	0.600	0.50
220	D	TL3D227(1)010(2)0360	11.00	8	0.360	0.65
220	E	TL3E227(1)010(2)0500	11.00	8	0.500	0.57
220	E	TL3E227(1)010(2)0100	11.00	8	0.100	1.28
330	E	TL3E337(1)010(2)0500	16.50	10	0.500	0.57
330	E	TL3E337(1)010(2)0100	16.50	10	0.100	1.28
470	E	TL3E477(1)010(2)0500	23.50	15	0.500	0.57
470	E	TL3E477(1)010(2)0200	23.50	15	0.200	0.91

Note

- Part number definitions:
  (1) Capacitance tolerance: K, M
  (2) Termination and packaging: C, D, E, F

STANDARD RATINGS

CAPACITANCE (µF)	CASE CODE	PART NUMBER	MAX. DC LEAKAGE AT + 25 °C (µA)	MAX. DF AT + 25 °C 120 Hz (%)	MAX. ESR AT + 25 °C 100 kHz (Ω)	MAX. RIPPLE 100 kHz I_{RMS} (A)
16 V_{DC} AT + 85 °C; 10 V_{DC} AT + 125 °C						
0.68	A	TL3A684(1)016(2)11R0	0.25	4	11.000	0.08
0.68	A	TL3A684(1)016(2)8000	0.25	4	8.000	0.10
1.0	A	TL3A105(1)016(2)9300	0.25	4	9.300	0.09
1.0	A	TL3A105(1)016(2)6000	0.25	4	6.000	0.11
1.5	A	TL3A155(1)016(2)8000	0.25	6	8.000	0.10
1.5	A	TL3A155(1)016(2)6000	0.25	6	6.000	0.11
2.2	B	TL3B225(1)016(2)4600	0.25	6	4.600	0.14
2.2	B	TL3B225(1)016(2)2500	0.25	6	2.500	0.18
3.3	B	TL3B335(1)016(2)3500	0.26	6	3.500	0.16
3.3	B	TL3B335(1)016(2)2000	0.26	6	2.000	0.21
4.7	A	TL3A475(1)016(2)5000	0.38	6	5.000	0.12
4.7	A	TL3A475(1)016(2)3500	0.38	6	3.500	0.15
4.7	B	TL3B475(1)016(2)2900	0.38	6	2.900	0.17
4.7	B	TL3B475(1)016(2)1500	0.38	6	1.500	0.24
6.8	C	TL3C685(1)016(2)1900	0.54	6	1.900	0.24
6.8	C	TL3C685(1)016(2)0600	0.54	6	0.600	0.43
10	A	TL3A106(1)016(2)3000	0.80	6	3.000	0.16
10	A	TL3A106(1)016(2)1700	0.80	6	1.700	0.21
10	B	TL3B106(1)016(2)2800	0.80	6	2.800	0.17
10	B	TL3B106(1)016(2)0800	0.80	6	0.800	0.33
10	C	TL3C106(1)016(2)1800	0.80	6	1.800	0.25
10	C	TL3C106(1)016(2)0450	0.80	6	0.450	0.49
15	B	TL3B156(1)016(2)2000	1.20	6	2.000	0.21
15	B	TL3B156(1)016(2)0800	1.20	6	0.800	0.33
22	B	TL3B226(1)016(2)1900	1.76	6	1.900	0.21
22	B	TL3B226(1)016(2)1000	1.76	6	1.000	0.29
22	D	TL3D226(1)016(2)0800	1.76	6	0.800	0.43
22	D	TL3D226(1)016(2)0250	1.76	6	0.250	0.77
33	B	TL3B336(1)016(2)1800	2.64	6	1.800	0.22
33	B	TL3B336(1)016(2)0500	2.64	6	0.500	0.41
33	C	TL3C336(1)016(2)1100	2.64	6	1.100	1.05
33	C	TL3C336(1)016(2)0300	2.64	6	0.300	0.61
33	D	TL3D336(1)016(2)0700	2.64	6	0.700	0.46
33	D	TL3D336(1)016(2)0225	2.64	6	0.225	0.82
47	C	TL3C476(1)016(2)1000	3.76	6	1.000	0.33
47	C	TL3C476(1)016(2)0300	3.76	6	0.300	0.61
47	D	TL3D476(1)016(2)0700	3.76	6	0.700	0.46
47	D	TL3D476(1)016(2)0150	3.76	6	0.150	1.00
68	D	TL3D686(1)016(2)0600	5.44	6	0.600	0.50
68	D	TL3D686(1)016(2)0150	5.44	6	0.150	1.00
100	D	TL3D107(1)016(2)0600	8.00	8	0.600	0.50
100	D	TL3D107(1)016(2)0125	8.00	8	0.125	1.10
100	E	TL3E107(1)016(2)0600	8.00	8	0.600	0.52
100	E	TL3E107(1)016(2)0100	8.00	8	0.100	1.28
150	E	TL3E157(1)016(2)0500	12.00	8	0.500	0.57
150	E	TL3E157(1)016(2)0150	12.00	8	0.150	1.28

Note

- Part number definitions:
  (1) Capacitance tolerance: K, M
  (2) Termination and packaging: C, D, E, F

STANDARD RATINGS

CAPACITANCE (µF)	CASE CODE	PART NUMBER	MAX. DC LEAKAGE AT + 25 °C (µA)	MAX. DF AT + 25 °C 120 Hz (%)	MAX. ESR AT + 25 °C 100 kHz (Ω)	MAX. RIPPLE 100 kHz I_{RMS} (A)
20 V_{DC} AT + 85 °C; 13 V_{DC} AT + 125 °C						
0.47	A	TL3A474(1)020(2)12R0	0.25	4	12.000	0.08
0.47	A	TL3A474(1)020(2)9000	0.25	4	9.000	0.09
0.68	A	TL3A684(1)020(2)10R0	0.25	4	10.000	0.09
0.68	A	TL3A684(1)020(2)8000	0.25	4	8.000	0.10
1.0	A	TL3A105(1)020(2)8400	0.25	4	8.400	0.09
1.0	A	TL3A105(1)020(2)5500	0.25	4	5.500	0.12
1.5	B	TL3B155(1)020(2)4600	0.25	6	4.600	0.14
1.5	B	TL3B155(1)020(2)2500	0.25	6	2.500	0.18
2.2	A	TL3A225(1)020(2)5900	0.25	6	5.900	0.11
2.2	A	TL3A225(1)020(2)4000	0.25	6	4.000	0.14
2.2	B	TL3B225(1)020(2)3500	0.25	6	3.500	0.16
2.2	B	TL3B225(1)020(2)1500	0.25	6	1.500	0.24
3.3	B	TL3B335(1)020(2)3000	0.33	6	3.000	0.17
3.3	B	TL3B335(1)020(2)1300	0.33	6	1.300	0.26
4.7	A	TL3A475(1)020(2)5500	0.47	6	5.500	0.12
4.7	A	TL3A475(1)020(2)3500	0.47	6	3.500	0.15
4.7	B	TL3B475(1)020(2)2900	0.47	6	2.900	0.17
4.7	B	TL3B475(1)020(2)1000	0.47	6	1.000	0.29
4.7	C	TL3C475(1)020(2)2300	0.47	6	2.300	0.22
4.7	C	TL3C475(1)020(2)0600	0.47	6	0.600	0.43
6.8	C	TL3C685(1)020(2)1900	0.68	6	1.900	0.24
6.8	C	TL3C685(1)020(2)0550	0.68	6	0.550	0.45
10	B	TL3B106(1)020(2)2500	1.00	6	2.500	0.18
10	B	TL3B106(1)020(2)1000	1.00	6	1.000	0.29
10	C	TL3C106(1)020(2)1700	1.00	6	1.700	0.25
10	C	TL3C106(1)020(2)0450	1.00	6	0.450	0.49
15	D	TL3D156(1)020(2)0900	1.50	6	0.900	0.41
15	D	TL3D156(1)020(2)0300	1.50	6	0.300	0.71
22	C	TL3C226(1)020(2)1200	2.20	6	1.200	0.30
22	C	TL3C226(1)020(2)0375	2.20	6	0.375	0.54
22	D	TL3D226(1)020(2)0700	2.20	6	0.700	0.46
22	D	TL3D226(1)020(2)0225	2.20	6	0.225	0.82
33	D	TL3D336(1)020(2)0700	3.30	6	0.700	0.46
33	D	TL3D336(1)020(2)0200	3.30	6	0.200	0.87
47	D	TL3D476(1)020(2)0700	4.70	6	0.700	0.46
47	D	TL3D476(1)020(2)0200	4.70	6	0.200	0.87
47	E	TL3E476(1)020(2)0600	4.70	6	0.600	0.52
47	E	TL3E476(1)020(2)0150	4.70	6	0.150	1.05
68	D	TL3D686(1)020(2)0700	6.80	6	0.700	0.46
68	D	TL3D686(1)020(2)0175	6.80	6	0.175	0.93
68	E	TL3E686(1)020(2)0600	6.80	6	0.600	0.52
68	E	TL3E686(1)020(2)0150	6.80	6	0.150	1.05
100	E	TL3E107(1)020(2)0500	10.00	8	0.500	0.57
100	E	TL3E107(1)020(2)0150	10.00	8	0.150	1.05

Note

- Part number definitions:
  (1) Capacitance tolerance: K, M
  (2) Termination and packaging: C, D, E, F

STANDARD RATINGS

CAPACITANCE (µF)	CASE CODE	PART NUMBER	MAX. DC LEAKAGE AT + 25 °C (µA)	MAX. DF AT + 25 °C 120 Hz (%)	MAX. ESR AT + 25 °C 100 kHz (Ω)	MAX. RIPPLE 100 kHz I_{RMS} (A)
25 V_{DC} AT + 85 °C; 17 V_{DC} AT + 125 °C						
0.33	A	TL3A334(1)025(2)14R0	0.25	4	14.000	0.07
0.33	A	TL3A334(1)025(2)10R0	0.25	4	10.000	0.09
0.47	A	TL3A474(1)025(2)12R0	0.25	4	12.000	0.08
0.47	A	TL3A474(1)025(2)9000	0.25	4	9.000	0.09
0.68	B	TL3B684(1)025(2)7000	0.25	4	7.000	0.11
0.68	B	TL3B684(1)025(2)5000	0.25	4	5.000	0.13
1.0	A	TL3A105(1)025(2)7600	0.25	4	7.600	0.10
1.0	A	TL3A105(1)025(2)4000	0.25	4	4.000	0.14
1.0	B	TL3B105(1)025(2)5000	0.25	4	5.000	0.13
1.0	B	TL3B105(1)025(2)2000	0.25	4	2.000	0.21
1.5	B	TL3B155(1)025(2)4600	0.25	6	4.600	0.14
1.5	B	TL3B155(1)025(2)2000	0.25	6	2.000	0.21
2.2	A	TL3A225(1)025(2)6300	0.28	6	6.300	0.11
2.2	A	TL3A225(1)025(2)4000	0.28	6	4.000	0.14
2.2	B	TL3B225(1)025(2)3800	0.28	6	3.800	0.15
2.2	B	TL3B225(1)025(2)2300	0.28	6	2.300	0.19
2.2	C	TL3C225(1)025(2)2900	0.28	6	2.900	0.19
2.2	C	TL3C225(1)025(2)1000	0.28	6	1.000	0.33
3.3	B	TL3B335(1)025(2)3100	0.41	6	3.100	0.17
3.3	B	TL3B335(1)025(2)1500	0.41	6	1.500	0.24
3.3	C	TL3C335(1)025(2)2300	0.41	6	2.300	0.22
3.3	C	TL3C335(1)025(2)1000	0.41	6	1.000	0.33
4.7	B	TL3B475(1)025(2)2800	0.59	6	2.800	0.17
4.7	B	TL3B475(1)025(2)1500	0.59	6	1.500	0.24
4.7	C	TL3C475(1)025(2)2000	0.59	6	2.000	0.23
4.7	C	TL3C475(1)025(2)0525	0.59	6	0.525	0.46
6.8	C	TL3C685(1)025(2)1700	0.85	6	1.700	0.25
6.8	C	TL3C685(1)025(2)0500	0.85	6	0.500	0.47
6.8	D	TL3D685(1)025(2)1200	0.85	6	1.200	0.35
6.8	D	TL3D685(1)025(2)0350	0.85	6	0.350	0.65
10	B	TL3B106(1)025(2)2300	1.25	6	2.300	0.19
10	B	TL3B106(1)025(2)1300	1.25	6	1.300	0.26
10	C	TL3C106(1)025(2)1500	1.25	6	1.500	0.27
10	C	TL3C106(1)025(2)0450	1.25	6	0.450	0.49
10	D	TL3D106(1)025(2)1000	1.25	6	1.000	0.39
10	D	TL3D106(1)025(2)0300	1.25	6	0.300	0.71
15	C	TL3C156(1)025(2)1200	1.88	6	1.200	0.30
15	C	TL3C156(1)025(2)0425	1.88	6	0.425	0.51
15	D	TL3D156(1)025(2)0800	1.88	6	0.800	0.43
15	D	TL3D156(1)025(2)0250	1.88	6	0.250	0.77
22	D	TL3D226(1)025(2)0700	2.75	6	0.700	0.46
22	D	TL3D226(1)025(2)0200	2.75	6	0.200	0.87
33	D	TL3D336(1)025(2)0700	4.13	6	0.700	0.46
33	D	TL3D336(1)025(2)0300	4.13	6	0.300	0.71
33	E	TL3E336(1)025(2)0600	4.13	6	0.600	0.52
33	E	TL3E336(1)025(2)0200	4.13	6	0.200	0.91
47	D	TL3D476(1)025(2)0700	5.88	8	0.700	0.46
47	D	TL3D476(1)025(2)0350	5.88	8	0.350	0.65
47	E	TL3E476(1)025(2)0600	5.88	6	0.600	0.52
47	E	TL3E476(1)025(2)0300	5.88	6	0.300	0.74

Note

- Part number definitions:
  (1) Capacitance tolerance: K, M
  (2) Termination and packaging: C, D, E, F

STANDARD RATINGS

CAPACITANCE (µF)	CASE CODE	PART NUMBER	MAX. DC LEAKAGE AT + 25 °C (µA)	MAX. DF AT + 25 °C 120 Hz (%)	MAX. ESR AT + 25 °C 100 kHz (Ω)	MAX. RIPPLE 100 kHz I_{RMS} (A)
35 V_{DC} AT + 85 °C; 23 V_{DC} AT + 125 °C						
0.10	A	TL3A104(1)035(2)20R0	0.25	4	20.000	0.06
0.10	A	TL3A104(1)035(2)10R0	0.25	4	10.000	0.09
0.15	A	TL3A154(1)035(2)18R0	0.25	4	18.000	0.06
0.15	A	TL3A154(1)035(2)6000	0.25	4	6.000	0.11
0.22	A	TL3A224(1)035(2)15R0	0.25	4	15.000	0.07
0.22	A	TL3A224(1)035(2)6000	0.25	4	6.000	0.11
0.33	A	TL3A334(1)035(2)13R0	0.25	4	13.000	0.08
0.33	A	TL3A334(1)035(2)6000	0.25	4	6.000	0.11
0.47	A	TL3A474(1)035(2)10R0	0.25	4	10.000	0.09
0.47	A	TL3A474(1)035(2)4000	0.25	4	4.000	0.14
0.47	B	TL3B474(1)035(2)8000	0.25	4	8.000	0.10
0.47	B	TL3B474(1)035(2)2500	0.25	4	2.500	0.33
0.68	B	TL3B684(1)035(2)6500	0.25	4	6.500	0.11
0.68	B	TL3B684(1)035(2)2500	0.25	4	2.500	0.18
1.0	A	TL3A105(1)035(2)7500	0.25	4	7.500	0.10
1.0	A	TL3A105(1)035(2)6000	0.25	4	6.000	0.11
1.0	B	TL3B105(1)035(2)5000	0.25	4	5.000	0.13
1.0	B	TL3B105(1)035(2)2000	0.25	4	2.000	0.21
1.5	B	TL3B155(1)035(2)4200	0.26	6	4.200	0.14
1.5	B	TL3B155(1)035(2)3000	0.26	6	3.000	0.17
1.5	C	TL3C155(1)035(2)3800	0.26	6	3.800	0.17
1.5	C	TL3C155(1)035(2)1500	0.26	6	1.500	0.27
2.2	B	TL3B225(1)035(2)3800	0.39	6	3.800	0.15
2.2	B	TL3B225(1)035(2)2300	0.39	6	2.300	0.19
2.2	C	TL3C225(1)035(2)2900	0.39	6	2.900	0.19
2.2	C	TL3C225(1)035(2)0900	0.39	6	0.900	0.35
3.3	B	TL3B335(1)035(2)3500	0.58	6	3.500	0.16
3.3	B	TL3B335(1)035(2)1500	0.58	6	1.500	0.24
3.3	C	TL3C335(1)035(2)2100	0.58	6	2.100	0.23
3.3	C	TL3C335(1)035(2)0700	0.58	6	0.700	0.40
4.7	C	TL3C475(1)035(2)1900	0.82	6	1.900	0.24
4.7	C	TL3C475(1)035(2)0600	0.82	6	0.600	0.43
4.7	D	TL3D475(1)035(2)1300	0.82	6	1.300	0.34
4.7	D	TL3D475(1)035(2)0600	0.82	6	0.600	0.50
6.8	C	TL3C685(1)035(2)1800	1.19	6	1.800	0.25
6.8	C	TL3C685(1)035(2)0900	1.19	6	0.900	0.35
6.8	D	TL3D685(1)035(2)1100	1.19	6	1.100	0.37
6.8	D	TL3D685(1)035(2)0300	1.19	6	0.300	0.71
10	C	TL3C106(1)035(2)1600	1.75	6	1.600	0.26
10	C	TL3C106(1)035(2)0850	1.75	6	0.850	0.36
10	D	TL3D106(1)035(2)0800	1.75	6	0.800	0.43
10	D	TL3D106(1)035(2)0300	1.75	6	0.300	0.71
15	D	TL3D156(1)035(2)0800	2.63	6	0.800	0.43
15	D	TL3D156(1)035(2)0400	2.63	6	0.400	0.61
22	D	TL3D226(1)035(2)0600	3.85	6	0.600	0.50
22	D	TL3D226(1)035(2)0400	3.85	6	0.400	0.61
22	E	TL3E226(1)035(2)0600	3.85	6	0.600	0.52
22	E	TL3E226(1)035(2)0300	3.85	6	0.300	0.74

Note

- Part number definitions:
  (1) Capacitance tolerance: K, M
  (2) Termination and packaging: C, D, E, F

STANDARD RATINGS

CAPACITANCE (µF)	CASE CODE	PART NUMBER	MAX. DC LEAKAGE AT + 25 °C (µA)	MAX. DF AT + 25 °C 120 Hz (%)	MAX. ESR AT + 25 °C 100 kHz (Ω)	MAX. RIPPLE 100 kHz I_{RMS} (A)
50 V_{DC} AT + 85 °C; 33 V_{DC} AT + 125 °C						
0.10	A	TL3A104(1)050(2)19R0	0.25	4	19.000	0.06
0.10	A	TL3A104(1)050(2)10R0	0.25	4	10.000	0.09
0.15	A	TL3A154(1)050(2)17R0	0.25	4	17.000	0.07
0.15	A	TL3A154(1)050(2)10R0	0.25	4	10.000	0.09
0.15	B	TL3B154(1)050(2)14R0	0.25	4	14.000	0.08
0.15	B	TL3B154(1)050(2)9000	0.25	4	9.000	0.10
0.22	B	TL3B224(1)050(2)12R0	0.25	4	12.000	0.08
0.22	B	TL3B224(1)050(2)8500	0.25	4	8.500	0.10
0.33	B	TL3B334(1)050(2)10R0	0.25	4	10.000	0.09
0.33	B	TL3B334(1)050(2)4500	0.25	4	4.500	0.14
0.47	B	TL3B474(1)050(2)8400	0.25	4	8.400	0.10
0.47	B	TL3B474(1)050(2)4000	0.25	4	4.000	0.15
0.47	C	TL3C474(1)050(2)6700	0.25	4	6.700	0.13
0.47	C	TL3C474(1)050(2)1800	0.25	4	1.800	0.25
0.68	C	TL3C684(1)050(2)5900	0.25	4	5.900	0.14
0.68	C	TL3C684(1)050(2)1600	0.25	4	1.600	0.26
1.0	B	TL3B105(1)050(2)6700	0.25	4	6.700	0.11
1.0	B	TL3B105(1)050(2)2000	0.25	4	2.000	0.21
1.0	C	TL3C105(1)050(2)4600	0.25	4	4.600	0.15
1.0	C	TL3C105(1)050(2)1600	0.25	4	1.600	0.26
1.5	C	TL3C155(1)050(2)3400	0.38	6	3.400	0.18
1.5	C	TL3C155(1)050(2)1500	0.38	6	1.500	0.27
1.5	D	TL3D155(1)050(2)2900	0.38	6	2.900	0.23
1.5	D	TL3D155(1)050(2)1000	0.375	6	1.000	0.39
2.2	C	TL3C225(1)050(2)2900	0.55	6	2.900	0.19
2.2	C	TL3C225(1)050(2)1500	0.55	6	1.500	0.27
2.2	D	TL3D225(1)050(2)2100	0.55	6	2.100	0.27
2.2	D	TL3D225(1)050(2)0800	0.55	6	0.800	0.43
3.3	D	TL3D335(1)050(2)1700	0.83	6	1.700	0.30
3.3	D	TL3D335(1)050(2)0800	0.83	6	0.800	0.43
4.7	D	TL3D475(1)050(2)1200	1.18	6	1.200	0.35
4.7	D	TL3D475(1)050(2)0600	1.18	6	0.600	0.50
6.8	E	TL3E685(1)050(2)0900	1.70	6	0.900	0.43
6.8	E	TL3E685(1)050(2)0540	1.70	6	0.540	0.55
10	E	TL3E106(1)050(2)0800	2.50	6	0.800	0.45
10	E	TL3E106(1)050(2)0550	2.50	6	0.550	0.55

Note

- Part number definitions:
  (1) Capacitance tolerance: K, M
  (2) Termination and packaging: C, D, E, F

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	3.3
10	5.0
16	8.0
20	10
25	12
35	15
50	24
63	32
SEVERE CONDITIONS. FOR EXAMPLE: INPUT 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

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

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

PRODUCT INFORMATION	
Guide for Molded Tantalum Capacitors	www.vishay.com/doc?40074
Pad Dimensions	
Packaging Dimensions	
Moisture Sensitivity	www.vishay.com/doc?40135
SELECTOR GUIDES	
Solid Tantalum Selector Guide	www.vishay.com/doc?49053
Solid Tantalum Chip Capacitors	www.vishay.com/doc?40091
FAQ	
Frequently Asked Questions	www.vishay.com/doc?40110

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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.