

Solid Tantalum Surface Mount TANTAMOUNT®, Molded Case, Hi-Rel COTS



FEATURES

- Terminations Tin/Lead and 100 % Matte Tin
- Standard EIA535BAAC case sizes (A through E)
- Weibull Grading and Surge Current Test options
- Standard and Low ESR options
- Compliant Terminations
- Meets EIA 535BAAC and IEC QC 300801/DSCC mechanical and performance requirements



RoHS*
COMPLIANT

PERFORMANCE/ELECTRICAL CHARACTERISTICS

Operating Temperature: - 55 °C to + 125 °C

Capacitance Range: 0.1 µF to 330 µF

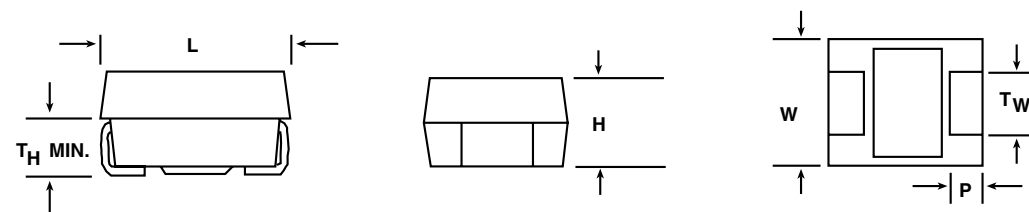
Capacitance Tolerance: ± 10 %, ± 20 %

Voltage Rating: 4 VDC to 50 VDC

ORDERING INFORMATION

T83	D	107	K	010	E	A	A	S
TYPE	CASE CODE	CAPACITANCE	CAPACITANCE TOLERANCE	DC VOLTAGE RATING AT + 85 °C	TERMINATION AND PACKAGING	RELIABILITY LEVEL	SURGE CURRENT	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 volts. To complete the three-digit block, zeros precede the voltage rating. A decimal point is indicated by an "R" (6R3 = 6.3 V).	E: Tin/lead /7" (178 mm) reel L: Tin/lead/7" (178 mm), ½ reel C: Matte Tin/7" (178 mm) reels H: Matte Tin/7" (178 mm), ½ reel	A = 1.0 % B = 0.1 % S = Hi-Rel Standard Z = Non-ER	A = 10 cycles at + 25 °C B = 10 cycles at - 55 °C/+ 85 °C Z = None	S = Std L = Low

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]	0.095 ± 0.004 [2.4 ± 0.10]	0.039 [1.0]
E	7343-43	0.287 ± 0.012 [7.3 ± 0.30]	0.170 ± 0.012 [4.3 ± 0.30]	0.158 ± 0.012 [4.0 ± 0.30]	0.051 ± 0.012 [1.3 ± 0.30]	0.095 ± 0.004 [2.4 ± 0.10]	0.039 [1.0]

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



Solid Tantalum Surface Mount Capacitors
TANTAMOUNT®, Molded Case, Hi-Rel COTS

Vishay Sprague

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	A
0.15							A	A/B
0.22							A	B
0.33						A	A	B
0.47					A	A	B	B/C
0.68				A	A	B	B	C
1.0			A	A	A	B	A/B	B/C
1.5		A	A	A	B	B	B/C	C/D
2.2	A	A		B	B	A/C	C	C/D
3.3	A	A	B	B	B	B/C	B/C	D
4.7	A	A/B	A/B	B	A/B/C	A/C	C/D	D
6.8	B	B	B	B/C	C	C/D	C/D	
10	B	B	A/C	B/C	B/C	B/C/D	C/D	E
15	B	C	A/C		D	D	D	
22		A/C		D	C/D	D	D/E	
33	A/B/C	B/C	B/C/D	B/C/D	D	D/E		
47	B/C	B/C/D	B/C/D	C/D	D/E	E		
68	D	D	D	D	E			
100	D	B/D	C/D	D/E	E			
150	D	D/E	D					
220		C/E	E					
330	E	E	E					
470			E					

MARKING

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

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.

RATINGS AND PART NUMBER REFERENCE						
CAPACITANCE (μ F)	CASE CODE	PART NUMBER	MAX. DC LEAKAGE AT + 25 °C (μ A)	MAX. DF AT + 25 °C 120 Hz (%)	STD. (S) MAX. ESR AT + 25 °C 100 kHz (Ω)	LOW (L) MAX. ESR AT + 25 °C 100 kHz (Ω)
4 VDC AT + 85 °C, 2.7 VDC AT + 125 °C						
2.2	A	T83A225(1)004(2)(3)(4)(5)	0.5	6	7.600	6.000
3.3	A	T83A335(1)004(2)(3)(4)(5)	0.5	6	7.600	4.000
4.7	A	T83A475(1)004(2)(3)(4)(5)	0.5	6	6.300	3.500
6.8	B	T83B685(1)004(2)(3)(4)(5)	0.5	6	4.500	2.000
10	B	T83B106(1)004(2)(3)(4)(5)	0.5	6	3.500	1.200
15	B	T83B156(1)004(2)(3)(4)(5)	0.6	6	2.900	1.200
33	A	T83A336(1)004(2)(3)(4)(5)	1.3	6	2.900	1.500
33	C	T83C336(1)004(2)(3)(4)(5)	1.3	6	1.800	0.500
47	B	T83B476(1)004(2)(3)(4)(5)	1.9	6	2.500	0.600
47	C	T83C476(1)004(2)(3)(4)(5)	1.9	6	1.800	0.400
68	D	T83D686(1)004(2)(3)(4)(5)	2.7	6	0.800	0.175
100	D	T83D107(1)004(2)(3)(4)(5)	4.0	6	0.700	0.175
150	D	T83D157(1)004(2)(3)(4)(5)	6.0	8	0.600	0.150
330	E	T83E337(1)004(2)(3)(4)(5)	13.2	8	0.500	0.100
6.3 VDC AT + 85 °C, 4 VDC AT 125 °C						
1.5	A	T83A155(1)6R3(2)(3)(4)(5)	0.5	6	8.000	6.000
2.2	A	T83A225(1)6R3(2)(3)(4)(5)	0.5	6	7.600	6.000
3.3	A	T83A335(1)6R3(2)(3)(4)(5)	0.5	6	6.300	5.000
4.7	A	T83A475(1)6R3(2)(3)(4)(5)	0.5	6	5.500	3.500
4.7	B	T83B475(1)6R3(2)(3)(4)(5)	0.5	6	3.400	1.800
6.8	B	T83B685(1)6R3(2)(3)(4)(5)	0.5	6	3.400	1.200
10	B	T83B106(1)6R3(2)(3)(4)(5)	0.6	6	2.900	1.000
15	C	T83C156(1)6R3(2)(3)(4)(5)	0.9	6	1.800	0.600
22	A	T83A226(1)6R3(2)(3)(4)(5)	1.3	6	2.900	2.000
22	C	T83C226(1)6R3(2)(3)(4)(5)	1.3	6	1.800	0.500
33	B	T83B336(1)6R3(2)(3)(4)(5)	2.0	6	1.900	0.600
33	C	T83C336(1)6R3(2)(3)(4)(5)	2.0	6	1.500	0.400
47	B	T83B476(1)6R3(2)(3)(4)(5)	2.8	6	2.000	0.550
47	C	T83C476(1)6R3(2)(3)(4)(5)	2.8	6	1.400	0.300
47	D	T83D476(1)6R3(2)(3)(4)(5)	2.8	6	0.800	0.200
68	D	T83D686(1)6R3(2)(3)(4)(5)	4.1	6	0.700	0.200
100	B	T83B107(1)6R3(2)(3)(4)(5)	6.0	15	1.700	0.700
100	D	T83D107(1)6R3(2)(3)(4)(5)	6.0	6	0.700	0.140
150	D	T83D157(1)6R3(2)(3)(4)(5)	9.0	8	0.600	0.125
150	E	T83E157(1)6R3(2)(3)(4)(5)	9.0	8	0.500	0.100
220	C	T83C227(1)6R3(2)(3)(4)(5)	13.9	14	0.700	0.300
220	E	T83E227(1)6R3(2)(3)(4)(5)	13.2	8	0.500	0.100
330	E	T83E337(1)6R3(2)(3)(4)(5)	19.8	8	0.500	0.100
10 VDC AT + 85 °C, 7 VDC AT 125 °C						
1.0	A	T83A105(1)010(2)(3)(4)(5)	0.5	4	9.300	6.000
1.5	A	T83A155(1)010(2)(3)(4)(5)	0.5	6	8.000	6.000
3.3	B	T83B335(1)010(2)(3)(4)(5)	0.5	6	3.500	2.500
4.7	A	T83A475(1)010(2)(3)(4)(5)	0.5	6	5.000	3.000
4.7	B	T83B475(1)010(2)(3)(4)(5)	0.5	6	3.400	1.500
6.8	B	T83B685(1)010(2)(3)(4)(5)	0.7	6	2.900	1.200
10	A	T83A106(1)010(2)(3)(4)(5)	1.0	6	3.400	2.000
10	C	T83C106(1)010(2)(3)(4)(5)	1.0	6	1.800	0.550
15	A	T83A156(1)010(2)(3)(4)(5)	1.5	6	2.900	2.000
15	C	T83C156(1)010(2)(3)(4)(5)	1.5	6	1.800	0.500

Notes

(1) Capacitance Tolerance: K, M

(2) Termination and Packaging: C, E, H, L

(3) Reliability Level: A, B, S, Z

(4) Surge Current: A, B, Z

(5) ESR: L, S

Solid Tantalum Surface Mount Capacitors
TANTAMOUNT®, Molded Case, Hi-Rel COTS

Vishay Sprague

RATINGS AND PART NUMBER REFERENCE						
CAPACITANCE (μ F)	CASE CODE	PART NUMBER	MAX. DC LEAKAGE AT + 25 °C (μ A)	MAX. DF AT + 25 °C 120 Hz (%)	STD. (S) MAX. ESR AT + 25 °C 100 kHz (Ω)	LOW (L) MAX. ESR AT + 25 °C 100 kHz (Ω)
10 VDC AT + 85 °C, 7 VDC AT 125 °C						
33	B	T83B336(1)010(2)(3)(4)(5)	3.3	6	1.900	0.600
33	C	T83C336(1)010(2)(3)(4)(5)	3.3	6	1.400	0.350
33	D	T83D336(1)010(2)(3)(4)(5)	3.3	6	0.800	0.250
47	B	T83B476(1)010(2)(3)(4)(5)	4.7	6	1.800	0.600
47	C	T83C476(1)010(2)(3)(4)(5)	4.7	6	1.100	0.300
47	D	T83D476(1)010(2)(3)(4)(5)	4.7	6	0.700	0.200
68	D	T83D686(1)010(2)(3)(4)(5)	6.8	6	0.700	0.150
100	C	T83C107(1)010(2)(3)(4)(5)	10.0	8	0.900	0.200
100	D	T83D107(1)010(2)(3)(4)(5)	10.0	8	0.600	0.100
150	D	T83D157(1)010(2)(3)(4)(5)	15.0	8	0.600	0.100
220	E	T83E227(1)010(2)(3)(4)(5)	22.0	8	0.500	0.100
330	E	T83E337(1)010(2)(3)(4)(5)	33.0	10	0.500	0.100
470	E	T83E477(1)010(2)(3)(4)(5)	47.0	15	0.500	0.100
16 VDC AT + 85 °C, 10 VDC AT + 125 °C						
0.68	A	T83A684(1)016(2)(3)(4)(5)	0.5	4	11.000	8.000
1.0	A	T83A105(1)016(2)(3)(4)(5)	0.5	4	9.300	6.000
1.5	A	T83A55(1)016A(2)(3)(4)(5)	0.5	6	6.700	6.000
2.2	B	T83B225(1)016(2)(3)(4)(5)	0.5	6	4.600	2.500
3.3	B	T83B335(1)016(2)(3)(4)(5)	0.5	6	3.500	2.000
4.7	B	T83B475(1)016(2)(3)(4)(5)	0.8	6	2.900	1.500
6.8	C	T83C685(1)016(2)(3)(4)(5)	1.1	6	1.900	0.600
10	B	T83B106(1)016(2)(3)(4)(5)	1.6	6	2.800	0.800
10	C	T83C106(1)016(2)(3)(4)(5)	1.6	6	1.800	0.450
22	D	T83D226(1)016(2)(3)(4)(5)	3.5	6	0.800	0.250
33	B	T83B336(1)016(2)(3)(4)(5)	5.3	6	1.800	0.500
33	C	T83C336(1)016(2)(3)(4)(5)	5.3	6	1.100	0.300
33	D	T83D336(1)016(2)(3)(4)(5)	5.3	6	0.700	0.225
47	C	T83C476(1)016(2)(3)(4)(5)	1.5	6	1.000	0.300
47	D	T83D476(1)016(2)(3)(4)(5)	7.5	6	0.700	0.150
68	D	T83D686(1)016(2)(3)(4)(5)	10.9	6	0.600	0.150
100	D	T83D107(1)016(2)(3)(4)(5)	16.0	8	0.600	0.125
100	E	T83E107(1)016(2)(3)(4)(5)	16.0	8	0.600	0.100
150	E	T83E157(1)016(2)(3)(4)(5)	24.0	8	0.500	0.150
20 VDC AT + 85 °C, 13 VDC AT + 125 °C						
0.47	A	T83A474(1)020(2)(3)(4)(5)	0.5	4	12.000	9.000
0.68	A	T83A684(1)020(2)(3)(4)(5)	0.5	4	10.000	8.000
1.0	A	T83A105(1)020(2)(3)(4)(5)	0.5	4	8.400	5.500
1.5	B	T83B155(1)020(2)(3)(4)(5)	0.5	6	4.600	2.500
2.2	B	T83B225(1)020(2)(3)(4)(5)	0.5	6	3.500	1.500
3.3	B	T83B335(1)020(2)(3)(4)(5)	0.7	6	3.000	1.300
4.7	A	T83A475(1)020(2)(3)(4)(5)	0.9	6	5.000	3.500
4.7	B	T83B475(1)020(2)(3)(4)(5)	0.9	6	2.900	1.000
4.7	C	T83C475(1)020(2)(3)(4)(5)	0.9	6	2.300	0.600
6.8	C	T83C685(1)020(2)(3)(4)(5)	1.4	6	1.900	0.550
10	B	T83B106(1)020(2)(3)(4)(5)	2.0	6	2.500	1.000
10	C	T83C106(1)020(2)(3)(4)(5)	2.0	6	1.700	0.450
15	D	T83D156(1)020(2)(3)(4)(5)	3.0	6	0.900	0.300
22	C	T83C226(1)020(2)(3)(4)(5)	4.4	6	1.100	0.375
22	D	T83D226(1)020(2)(3)(4)(5)	4.4	6	0.700	0.225
33	D	T83D336(1)020(2)(3)(4)(5)	6.6	6	0.700	0.200

Notes

- (1) Capacitance Tolerance: K, M
(2) Termination and Packaging: C, E, H, L

(3) Reliability Level: A, B, S, Z

(4) Surge Current: A, B, Z

(5) ESR: L, S

RATINGS AND PART NUMBER REFERENCE						
CAPACITANCE (μ F)	CASE CODE	PART NUMBER	MAX. DC LEAKAGE AT + 25 °C (μ A)	MAX. DF AT + 25 °C 120 Hz (%)	STD. (S) MAX. ESR AT + 25 °C 100 kHz (Ω)	LOW (L) MAX. ESR AT + 25 °C 100 kHz (Ω)
20 VDC AT + 85 °C, 13 VDC AT + 125 °C						
47	D	T83D476(1)020(2)(3)(4)(5)	9.4	6	0.700	0.200
47	E	T83E476(1)020(2)(3)(4)(5)	9.4	6	0.600	0.150
68	E	T83E686(1)020(2)(3)(4)(5)	13.6	6	0.600	0.150
100	E	T83E107(1)020(2)(3)(4)(5)	20.0	8	0.500	0.150
25 VDC AT + 85 °C, 17 VDC AT + 125 °C						
0.33	A	T83A334(1)025(2)(3)(4)(5)	0.5	4	14.000	10.000
0.47	A	T83A474(1)025(2)(3)(4)(5)	0.5	4	12.000	9.000
0.68	B	T83B684(1)025(2)(3)(4)(5)	0.5	4	7.000	5.000
1.0	B	T83B105(1)025(2)(3)(4)(5)	0.5	4	5.000	2.000
1.5	B	T83B155(1)025(2)(3)(4)(5)	0.5	6	4.600	2.000
2.2	A	T83A225(1)025(2)(3)(4)(5)	0.6	6	6.300	4.000
2.2	C	T83C225(1)025(2)(3)(4)(5)	0.6	6	2.900	1.000
3.3	B	T83B335(1)025(2)(3)(4)(5)	0.8	6	3.100	1.500
3.3	C	T83C335(1)025(2)(3)(4)(5)	0.8	6	2.300	1.000
4.7	B	T83B475(1)025(2)(3)(4)(5)	1.2	6	2.800	1.500
4.7	C	T83C475(1)025(2)(3)(4)(5)	1.2	6	2.000	0.525
6.8	C	T83C685(1)025(2)(3)(4)(5)	1.7	6	1.700	0.500
6.8	D	T83D685(1)025(2)(3)(4)(5)	1.7	6	1.200	0.350
10	B	T83B106(1)025(2)(3)(4)(5)	2.5	6	2.300	1.300
10	C	T83C106(1)025(2)(3)(4)(5)	2.5	6	1.500	0.450
10	D	T83D106(1)025(2)(3)(4)(5)	2.5	6	1.000	0.300
15	D	T83D156(1)025(2)(3)(4)(5)	3.8	6	0.800	0.250
22	D	T83D226(1)025(2)(3)(4)(5)	5.5	6	0.700	0.200
33	D	T83D336(1)025(2)(3)(4)(5)	8.3	6	0.700	0.300
33	E	T83E336(1)025(2)(3)(4)(5)	8.3	6	0.600	0.200
47	E	T83E476(1)025(2)(3)(4)(5)	11.8	6	0.600	0.300
35 VDC AT + 85 °C, 23 VDC AT + 125 °C						
0.10	A	T83A104(1)035(2)(3)(4)(5)	0.5	4	20.000	10.000
0.15	A	T83A154(1)035(2)(3)(4)(5)	0.5	4	18.000	6.000
0.22	A	T83A224(1)035(2)(3)(4)(5)	0.5	4	15.000	6.000
0.33	A	T83A334(1)035(2)(3)(4)(5)	0.5	4	13.000	6.000
0.47	A	T83A474(1)035(2)(3)(4)(5)	0.5	4	10.000	4.000
0.47	B	T83B474(1)035(2)(3)(4)(5)	0.5	4	8.000	2.500
0.68	B	T83B684(1)035(2)(3)(4)(5)	0.5	4	6.500	2.500
1.0	A	T83A105(1)035(2)(3)(4)(5)	0.5	4	7.500	6.000
1.0	B	T83B105(1)035(2)(3)(4)(5)	0.5	4	5.000	2.000
1.5	B	T83B155(1)035(2)(3)(4)(5)	0.5	6	4.200	3.000
1.5	C	T83C155(1)035(2)(3)(4)(5)	0.5	6	3.800	1.500
2.2	C	T83C225(1)035(2)(3)(4)(5)	0.8	6	2.900	0.900
3.3	B	T83B335(1)035(2)(3)(4)(5)	1.2	6	3.500	1.500
3.3	C	T83C335(1)035(2)(3)(4)(5)	1.2	6	2.100	0.700
4.7	C	T83C475(1)035(2)(3)(4)(5)	1.6	6	1.900	0.600
4.7	D	T83D475(1)035(2)(3)(4)(5)	1.6	6	1.300	0.600
6.8	C	T83C685(1)035(2)(3)(4)(5)	2.4	6	1.800	0.900
6.8	D	T83D685(1)035(2)(3)(4)(5)	2.4	6	1.100	0.300
10	C	T83C106(1)035(2)(3)(4)(5)	3.5	6	1.600	0.850
10	D	T83D106(1)035(2)(3)(4)(5)	3.5	6	0.800	0.300
15	D	T83D156(1)035(2)(3)(4)(5)	5.3	6	0.800	0.300
22	D	T83D226(1)035(2)(3)(4)(5)	7.7	6	0.600	0.400
22	E	T83E226(1)035(2)(3)(4)(5)	7.7	6	0.600	0.300

Notes

- (1) Capacitance Tolerance: K, M
 (2) Termination and Packaging: C, E, H, L

- (3) Reliability Level: A, B, S, Z
 (4) Surge Current: A, B, Z
 (5) ESR: L, S

RATINGS AND PART NUMBER REFERENCE						
CAPACITANCE (μ F)	CASE CODE	PART NUMBER	MAX. DC LEAKAGE AT + 25 °C (μ A)	MAX. DF AT + 25 °C 120 Hz (%)	STD. (S) MAX. ESR AT + 25 °C 100 kHz (Ω)	LOW (L) MAX. ESR AT + 25 °C 100 kHz (Ω)
50 VDC AT + 85 °C, 33 VDC AT + 125 °C						
0.10	A	T83A104(1)050(2)(3)(4)(5)	0.5	4	19.000	10.000
0.15	A	T83A154(1)050(2)(3)(4)(5)	0.5	4	17.000	10.000
0.15	B	T83B154(1)050(2)(3)(4)(5)	0.5	4	14.000	9.000
0.22	B	T83B224(1)050(2)(3)(4)(5)	0.5	4	12.000	8.500
0.33	B	T83B334(1)050(2)(3)(4)(5)	0.5	4	10.000	4.500
0.47	B	T83B474(1)050(2)(3)(4)(5)	0.5	4	8.400	4.000
0.47	C	T83C474(1)050(2)(3)(4)(5)	0.5	4	6.700	1.800
0.68	C	T83C684(1)050(2)(3)(4)(5)	0.5	4	5.900	1.600
1.0	B	T83B105(1)050(2)(3)(4)(5)	0.5	4	6.700	2.000
1.0	C	T83C105(1)050(2)(3)(4)(5)	0.5	4	4.600	1.600
1.5	C	T83C155(1)050(2)(3)(4)(5)	0.8	6	3.400	1.500
1.5	D	T83D155(1)050(2)(3)(4)(5)	0.8	6	2.900	1.000
2.2	C	T83C225(1)050(2)(3)(4)(5)	1.1	6	2.900	1.500
2.2	D	T83D225(1)050(2)(3)(4)(5)	1.1	6	2.100	0.800
3.3	D	T83D335(1)050(2)(3)(4)(5)	1.7	6	1.700	0.800
4.7	D	T83D475(1)050(2)(3)(4)(5)	2.4	6	1.200	0.600
10	E	T83E106(1)050(2)(3)(4)(5)	5.0	6	0.800	0.550

Notes

(1) Capacitance Tolerance: K, M

(2) Termination and Packaging: C, E, H, L

(3) Reliability Level: A, B, S, Z

(4) Surge Current: A, B, Z

(5) ESR: L, S



Disclaimer

All product specifications and data are subject to change without notice.

Vishay Intertechnology, Inc., its affiliates, agents, and employees, and all persons acting on its or their behalf (collectively, "Vishay"), disclaim any and all liability for any errors, inaccuracies or incompleteness contained herein or in any other disclosure relating to any product.

Vishay disclaims any and all liability arising out of the use or application of any product described herein or of any information provided herein to the maximum extent permitted by law. The product specifications do not expand or otherwise modify Vishay's terms and conditions of purchase, including but not limited to the warranty expressed therein, which apply to these products.

No license, express or implied, by estoppel or otherwise, to any intellectual property rights is granted by this document or by any conduct of Vishay.

The products shown herein are not designed for use in medical, life-saving, or life-sustaining applications unless otherwise expressly indicated. Customers using or selling Vishay products not expressly indicated for use in such applications do so entirely at their own risk and agree to fully indemnify Vishay for any damages arising or resulting from such use or sale. Please contact authorized Vishay personnel to obtain written terms and conditions regarding products designed for such applications.

Product names and markings noted herein may be trademarks of their respective owners.