

TANTAMOUNT® Low ESR, Hi-Rel COTS, Built in Fuse Conformal Coated



FEATURES

- High reliability design with reliability screening available
- Surge current testing per MIL-PRF-55365 options available
- Standard and low ESR options
- Terminations: SnPb, standard. 100 % tin available
- Circuit protection for mission or safety critical systems
- Fuse characteristics: Guaranteed fuse protection at 9 A, 100 ms
- Mounting: Surface mount
- Compliant to RoHS Directive 2002/95/EC


RoHS*
COMPLIANT

Note

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

PERFORMANCE/ELECTRICAL CHARACTERISTICS

www.vishay.com/doc?40088

Operating Temperature: - 55 °C to + 85 °C
(to + 125 °C with voltage derating)

Capacitance Range: 10 µF to 680 µF

Capacitance Tolerance: ± 20 %, ± 10 % standard

Voltage Rating: 4 V_{DC} to 50 V_{DC}

ORDERING INFORMATION								
T96	R	107	K	010	E	S	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: Sn/Pb solder/ 7" (178 mm) reels L: Sn/Pb solder/ 7" (178 mm) ½ reel C: 100 % tin/ 7" (178 mm) reels H: 100 % tin/ 7" (178 mm) ½ reel	S = 40 h burn-in Z = Non-established reliability	A = 10 cycles at + 25 °C B = 10 cycles at - 55 °C/+ 85 °C S = 3 cycles at + 25 °C	S = Std L = Low	

DIMENSIONS in inches [millimeters]							
CASE CODE	L (MAX.)	W	H1	H	F (REF.)	D (REF.)	J (MAX.)
R	0.295 [7.5]	0.243 + 0.012/- 0.024 [6.2 + 0.3/- 0.6]	0.156 ± 0.012 [4.0 ± 0.3]	0.146 ± 0.012 [3.7 ± 0.3]	0.079 [2.0]	0.248 [6.3]	0.004 [0.1]

Note

- The anode termination (D less B) will be a minimum of 0.010" (0.25 mm)



RATINGS AND CASE CODES								
CAP. (μF)	4 V	6.3 V	10 V	16 V	20 V	25 V	35 V	50 V
10								R
15							R	R
22							R	R
33						R	R	
47					R		R	
68				R		R		
100			R		R	R		
120			R		R			
150			R		R			
180		R		R				
220		R	R	R				
330	R		R	R				
390		R						
470			R					
680		R	R					

STANDARD RATINGS							
CAPACITANCE (μF)	CASE CODE	PART NUMBER	MAX. DC LEAKAGE AT + 25 °C (μA)	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)	AVAILABLE RELIABILITY LEVELS
4 V_{DC} AT + 85 °C; 2.7 V_{DC} AT + 125 °C							
330	R	T96R337(1)004(2)(3)(4)(5)	13.2	8	0.230	0.180	S, Z
6.3 V_{DC} AT + 85 °C; 4 V_{DC} AT 125 °C							
180	R	T96R187(1)6R3(2)(3)(4)(5)	10.8	8	0.230	0.180	S, Z
220	R	T96R227(1)6R3(2)(3)(4)(5)	13.2	8	0.230	0.180	S, Z
390	R	T96R397(1)6R3(2)(3)(4)(5)	23.4	8	0.230	0.145	S, Z
680	R	T96R687(1)6R3(2)(3)(4)(5)	40.8	12	0.190	0.145	S, Z
10 V_{DC} AT + 85 °C; 7 V_{DC} AT 125 °C							
100	R	T96R107(1)010(2)(3)(4)(5)	10.0	8	0.240	0.175	S, Z
120	R	T96R127(1)010(2)(3)(4)(5)	12.0	8	0.240	0.170	S, Z
150	R	T96R157(1)010(2)(3)(4)(5)	15.0	8	0.230	0.165	S, Z
220	R	T96R227(1)010(2)(3)(4)(5)	22.0	8	0.230	0.155	S, Z
330	R	T96R337(1)010(2)(3)(4)(5)	33.0	8	0.230	0.155	S, Z
470	R	T96R477(1)010(2)(3)(4)(5)	47.0	10	0.220	0.145	S, Z
680	R	T96R687(1)010(2)(3)(4)(5)	68.0	14	0.190	0.145	S, Z
16 V_{DC} AT + 85 °C; 10 V_{DC} AT + 125 °C							
68	R	T96R686(1)016(2)(3)(4)(5)	10.9	6	0.700	0.195	S, Z
180	R	T96R187(1)016(2)(3)(4)(5)	28.8	8	0.230	0.155	S, Z
220	R	T96R227(1)016(2)(3)(4)(5)	35.2	8	0.220	0.155	S, Z
330	R	T96R337(1)016(2)(3)(4)(5)	52.8	14	0.210	0.155	S, Z

Note

- Part number definitions:
 - (1) Capacitance tolerance: K, M
 - (2) Termination and packaging: C, E, H, L
 - (3) Reliability level
 - (4) Surge current: A, B, S
 - (5) ESR: L, S



STANDARD RATINGS							
CAPACITANCE (μF)	CASE CODE	PART NUMBER	MAX. DC LEAKAGE AT + 25 °C (μA)	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)	AVAILABLE RELIABILITY LEVELS
20 V_{DC} AT + 85 °C; 13 V_{DC} AT + 125 °C							
47	R	T96R476(1)020(2)(3)(4)(5)	9.4	6	0.300	0.210	S, Z
100	R	T96R107(1)020(2)(3)(4)(5)	20.0	8	0.240	0.170	S, Z
120	R	T96R127(1)020(2)(3)(4)(5)	24.0	8	0.240	0.180	S, Z
150	R	T96R157(1)020(2)(3)(4)(5)	30.0	8	0.240	0.175	S, Z
25 V_{DC} AT + 85 °C; 17 V_{DC} AT + 125 °C							
33	R	T96R336(1)025(2)(3)(4)(5)	8.3	6	0.350	0.230	S, Z
68	R	T96R686(1)025(2)(3)(4)(5)	17.0	6	0.300	0.195	S, Z
100	R	T96R107(1)025(2)(3)(4)(5)	25.0	8	0.300	0.190	S, Z
35 V_{DC} AT + 85 °C; 23 V_{DC} AT + 125 °C							
15	R	T96R156(1)035(2)(3)(4)(5)	5.3	6	0.480	0.290	S, Z
22	R	T96R226(1)035(2)(3)(4)(5)	7.7	6	0.380	0.340	S, Z
33	R	T96R336(1)035(2)(3)(4)(5)	11.6	6	0.380	0.300	S, Z
47	R	T96R476(1)035(2)(3)(4)(5)	16.5	6	0.350	0.270	S, Z
50 V_{DC} AT + 85 °C; 33 V_{DC} AT + 125 °C							
10	R	T96R106(1)050(2)(3)(4)(5)	5.0	6	0.750	0.600	S, Z
15	R	T96R156(1)050(2)(3)(4)(5)	7.5	6	0.500	0.450	S, Z
22	R	T96R226(1)050(2)(3)(4)(5)	11.0	6	0.490	0.400	S, Z

Note

- Part number definitions:
 - Capacitance tolerance: K, M
 - Termination and packaging: C, E, H, L
 - Reliability level
 - Surge current: A, B, S
 - ESR: L, S

RECOMMENDED VOLTAGE DERATING GUIDELINES (for temperature 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
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



POWER DISSIPATION	
CASE CODE	MAXIMUM PERMISSIBLE POWER DISSIPATION AT + 25 °C (W) IN FREE AIR
R	0.250

STANDARD PACKAGING QUANTITY		
CASE CODE	UNITS PER REEL	
	7" FULL REEL	7" HALF REEL
R	300	150

PRODUCT INFORMATION	
Conformal Coated Guide	www.vishay.com/doc?40150
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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