

TBC Series



HRC5000 Medical Grade



The TBC HRC5000 Medical Grade series is designed for use in medical implantable applications. These are some of the smallest surface mount tantalum capacitors available on the market which feature extremely low DC leakage limits well below typical values.

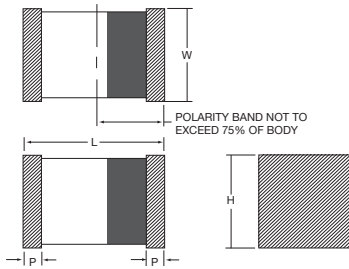


These components are manufactured and tested in the AVX Biddeford Maine factory which is ISO 13485 certified. Weibull grading and surge current testing options per MIL-PRF-55365 are available along with several plating options including tin/lead solder, 100% tin, or gold terminations.

To request a specific rating or for more information on HRC5000 testing details please contact the factory.

CASE DIMENSIONS: millimeters (inches)

Case Code	EIA Code	Length (L)	Width (W)	Height (H)	Term. Width (P) min.
A	1206	3.20±0.20 (0.126±0.008)	1.60±0.20 (0.063±0.008)	1.60±0.20 (0.063±0.008)	0.15 (0.006)
B	1411	3.60±0.20 (0.141±0.008)	2.90±0.15 (0.114±0.006)	1.50 max (0.06 max)	0.15 (0.006)
L	0603	1.60 ^{+0.25} _{-0.15} (0.063 ^{+0.010} _{-0.006})	0.85 ^{+0.20} _{-0.10} (0.033 ^{+0.008} _{-0.004})	0.85 ^{+0.20} _{-0.10} (0.033 ^{+0.008} _{-0.004})	0.15 (0.006)
R	0805	2.00 ^{+0.25} _{-0.15} (0.079 ^{+0.010} _{-0.006})	1.35 ^{+0.20} _{-0.10} (0.053 ^{+0.008} _{-0.004})	1.35 ^{+0.20} _{-0.10} (0.053 ^{+0.008} _{-0.004})	0.15 (0.006)
S	1207	3.20±0.20 (0.126±0.008)	1.80±0.20 (0.071±0.008)	1.50 max (0.06 max)	0.15 (0.006)



TECHNICAL SPECIFICATIONS

Technical Data:	Unless otherwise specified, all technical data relate to an ambient temperature of 25°C						
Capacitance Range:	0.47 μF to 47 μF						
Capacitance Tolerance:	±5%; ±10%; ±20%						
Rated Voltage (V _R)	≧ +85°C:	4	6	10	16	20	40
Category Voltage (V _C)	≧ +125°C:	2.7	4	6.7	10.7	13.3	26.7
Surge Voltage (V _S)	≧ +85°C:	5.3	8	13.3	20.8	26.7	52
Surge Voltage (V _S)	≧ +125°C:	3.5	5.3	8.7	13.9	17.8	34.7
Temperature Range:	-55°C to +125°C						



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CAPACITANCE AND RATED VOLTAGE, V_R (VOLTAGE CODE) RANGE (LETTER DENOTES CASE SIZE)

Capacitance		Rated Voltage							
μF	Code	4V	6V	10V	16V	20V	25V	35V	40V
0.10	104								
0.22	224								
0.33	334								
0.47	474			L					
0.68	684								
1	105			L		R			A
1.5	155								
2.2	225			L					
3.3	335		L	R					
4.7	475			R	R				
6.8	685			R					
10	106			R	R/A (17v)				
15	156	R							
22	226								
33	336								
47	476		S	B					
68	686								

HOW TO ORDER

TBC	R	106	*	010	C	□	L	@	5	^	++
Type	Case Size	Capacitance Code	Capacitance Tolerance	Voltage Code	ESR	Packaging	Inspection Level	Reliability Grade	Qualification Level	Termination Finish	Surge Test Option
		pF code: 1st two digits represent significant figures 3rd digit represents multiplier (number of zeros to follow)	J = $\pm 5\%$ K = $\pm 10\%$ M = $\pm 20\%$	004 = 4Vdc 006 = 6Vdc 010 = 10Vdc 016 = 16Vdc 017 = 17Vdc 020 = 20Vdc 040 = 40Vdc	C = Std ESR	B = Bulk R = 7" T&R W = Waffle	L = Group A	Weibull: B = 0.1%/1000 hrs. 90% conf. C = 0.01%/1000 hrs. 90% conf.	5 = HRC5000	0 = Solder Fused 9 = Gold Plated 7 = 100% Tin	00 = None 23 = 10 Cycles, +25°C 24 = 10 Cycles, -55°C & +85°C 45 = 10 Cycles, -55°C & +85°C before Weibull

*Contact factory for AVX HRC5000 Medical Grade SCD details.

Not RoHS Compliant



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RATING & PART NUMBER REFERENCE		Parametric Specifications by Rating									Typical Ripple Data by Rating						
		Cap @ 120Hz	DC Rated Voltage	ESR @ 100kHz	DCL max			DF max			Power Dissipation	25°C Ripple Current	85°C Ripple Current	125°C Ripple Current	25°C Ripple Voltage	85°C Ripple Voltage	125°C Ripple Voltage
					+25°C	+85°C	+125°C	+25°C	+85/125°C	-55°C							
AVX HRC5000 P/N	Case	µF @ 25°C	V @ +85°C	Ohms @ +25°C	(µA)	(µA)	(µA)	(%)	(%)	(%)							
TBCR156*004C□L@5^++	R	15	4	6	0.150	1.500	1.800	8	16	12	0.045	0.087	0.078	0.035	0.014	0.013	0.006
TBCL335*006C□L@5^++	L	3.3	6	10	0.100	1.000	1.200	6	12	9	0.025	0.050	0.045	0.020	0.005	0.005	0.002
TBCS476*006C□L@5^++	S	47	6	4	0.470	4.7	5.64	6	8	9	0.040	0.100	0.090	0.040	0.025	0.023	0.010
TBCL474*010C□L@5^++	L	0.47	10	12	0.100	1.000	1.200	6	12	9	0.025	0.046	0.041	0.018	0.004	0.003	0.002
TBCL105*010C□L@5^++	L	1	10	10	0.100	1.000	1.200	6	12	9	0.025	0.050	0.045	0.020	0.005	0.005	0.002
TBCL225*010C□L@5^++	L	2.2	10	10	0.100	1.000	1.200	6	12	9	0.025	0.050	0.045	0.020	0.005	0.005	0.002
TBCR335*010C□L@5^++	R	3.3	10	6	0.100	1.000	1.200	8	16	12	0.045	0.087	0.078	0.035	0.014	0.013	0.006
TBCR475*010C□L@5^++	R	4.7	10	6	0.118	1.175	1.410	8	16	12	0.045	0.087	0.078	0.035	0.014	0.013	0.006
TBCR685*010C□L@5^++	R	6.8	10	6	0.170	1.700	2.040	8	16	12	0.045	0.087	0.078	0.035	0.014	0.013	0.006
TBCR106*010C□L@5^++	R	10	10	6	0.250	2.500	3.000	8	16	12	0.045	0.087	0.078	0.035	0.014	0.013	0.006
TBCB476*010C□L@5^++	B	47	10	1	1.175	11.750	14.100	15	30	23	0.040	0.200	0.180	0.080	0.200	0.180	0.080
TBCR475*016C□L@5^++	R	4.7	16	6	0.188	1.880	2.256	8	10	12	0.045	0.087	0.078	0.035	0.014	0.013	0.006
TBCR106*016C□L@5^++	R	10	16	5	0.400	4.000	4.800	8	16	12	0.045	0.095	0.085	0.038	0.019	0.017	0.008
TBCA106*017C□L@5^++	A	10	17	3	0.425	4.250	5.100	8	16	12	0.040	0.115	0.104	0.046	0.038	0.035	0.015
TBCR105*020C□L@5^++	R	1	20	6	0.100	1.000	1.200	8	16	12	0.045	0.087	0.078	0.035	0.014	0.013	0.006
TBCA105*040C□L@5^++	A	1	40	6	0.100	1.000	1.200	8	16	12	0.040	0.082	0.073	0.033	0.014	0.012	0.005

All technical data relates to an ambient temperature of +25°C. Capacitance and DF are measured at 120Hz, 0.5V RMS with a maximum DC bias of 2.2 volts. DCL is measured at rated voltage after 5 minutes.

NOTE: AVX reserves the right to supply a higher voltage rating or tighter tolerance part in the same case size, to the same reliability standards.

