

# Wet Tantalum Capacitors, Sintered Anode Tantalum Foil Replacement



Type 285D capacitors are commercial replacements for Military Style M39006/01, 02, 03, 04, 16, 17 and are designed to meet the performance requirements of Military Specification MIL-PRF-39006. Internal cells are M39006/22 and M39006/25.

#### PERFORMANCE CHARACTERISTICS

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

**Capacitance Tolerance:** at 120 Hz, +25 °C.  $\pm$  20 % standard,  $\pm$  10 %,  $\pm$  5 % available as special

DC Leakage Current (DCL Max.):

at +25 °C, +85 °C, +125 °C: leakage current shall not exceed the values listed in the Standard Ratings Tables

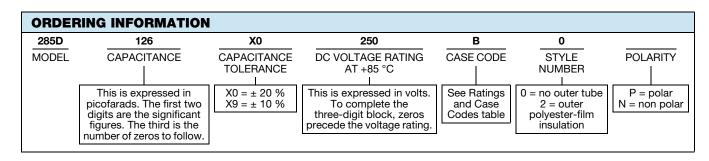
#### **FEATURES**

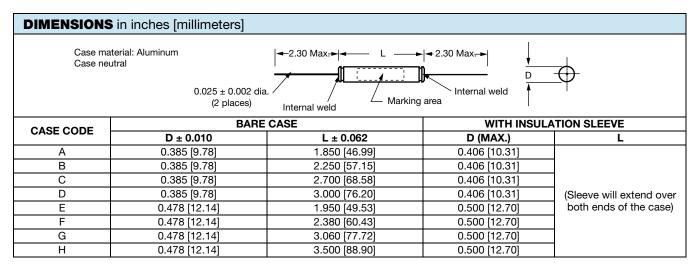
- · High ripple current capability
- Extended temperature range
- Very low impedances over wide frequency ranges
- · Long history of reliable operation
- · Mounting: axial

**Life Test:** capacitors are capable of withstanding a 2000 h life test at a temperature of +85 °C or +125 °C at the applicable DC working voltage.

Following the life test:

- 1. DCL shall not exceed the initial requirement.
- 2. Dissipation factor shall meet the initial requirement.
- 3. Change in capacitance shall not exceed 10 % from the initial measurement. For capacitors with voltage ratings of 15  $V_{DC}$  and below, change in capacitance shall not exceed + 10 %, 25 % from the initial measurement.







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RATINGS AND CASE CODES, POLAR CAPACITORS											
μF	150 V	200 V	250 V	300 V							
1.0				С							
1.5		Α									
1.8			A								
2.3		Α									
3.4			В								
11		В									
13			В	D							
14				Н							
21		F									
23			F								
41			G								
43		G									
55	В										

RATINGS AND CASE CODES, NON-POLAR CAPACITORS											
μF	6 V	15 V	25 V	30 V	50 V	75 <b>V</b>	100 V	125 V	150 V	200 V	250 V
1.2										E	
1.7											Е
1.8								Α			
5.0							Α				
7.0								В			
8.3									Е		
11						Α	В				
15							F				
23.5								F			
28								G			
34			Α		Α						
41						В					
55						G					
58				Α							
60					В						
135			В								
235				В	F						
340					G						
410	В	F									

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CAPACITANCE (µF)	CASE CODE	- DART NIIMBER	MAX. DCL (μΑ)			Z MAX. IMPEDANCE AT -55 °C	CAPACITANCE CHANGE (%)			DF (%)	RIPPLE CURRENT (1)
			25 °C	85 °C	125 °C	120 Hz (Ω)	-55 °C	85 °C	125 °C	(70)	(mA)
			150 V <sub>D</sub>	AT 85	°C; 100 V	<sub>DC</sub> AT +125 °C					
55	В	285D556(1)150B(2)P	2	10	10	48	-35	6	10	10	1650
	200 V <sub>DC</sub> AT 85 °C; 135 V <sub>DC</sub> AT +125 °C										
1.5	Α	285D155(1)200A(2)P	1	2	2	1420	-16	7	8	3	400
2.3	Α	285D235(1)200A(2)P	1	2	2	995	-16	7	8	3	565
11	В	285D116(1)200B(2)P	1	9	9	200	-16	8	8	8	970
21	F	285D216(1)200F(2)P	2	17	17	140	-20	8	8	8.5	1335
43	G	285D436(1)200G(2)P	9	36	36	60	-25	15	15	10	1800
250 V <sub>DC</sub> AT 85 °C; 165 V <sub>DC</sub> AT +125 °C											
1.8	Α	285D185(1)250A(2)P	1	2	2	1200	-16	7	8	3	520
3.4	В	285D345(1)250B(2)P	3	12	12	600	-14	10	12	6	700
13	В	285D136(1)250B(2)P	5	24	24	180	-18	12	15	7.2	1200
23	F	285D236(1)250F(2)P	10	40	40	100	-26	14	16	8	1500
41	G	285D416(1)250G(2)P	12	48	48	64	-30	15	17	17.4	1900
			300 V <sub>D</sub>	AT 85	°C; 200 V	<sub>DC</sub> AT +125 °C					
1.0	С	285D105(1)300C(2)P	1	2	2	2130	-16	7	8	2.8	400
13	D	285D136(1)300D(2)P	5	24	24	240	-20	12	15	10	1300
14	Н	285D146(1)300H(2)P	2	17	17	210	-20	8	8	8.5	1335

#### Notes

- Part number definitions:
  - (1) Capacitance tolerance:

X0 = 20 %,

X9 = 10 %

- (2) Style number or case insulation:
  - 0 = no insulation,
  - 2 = polyester film insulation
- (1) Ripple current is at 40 kHz and is govern by the ripple current multipliers associated with MIL-PRF-39006/22 and MIL-PRF-39006/25. All capacitance, DF and Z measurements are based on 120 Hz frequency and equivalent series circuit measuring equipment settings. Other ratings are available. Contact factory with inquiry.



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STANDARD	RATI	NGS NON-POLAI	R CAP	ACIT	ORS						
CAPACITANCE (μF)	CASE CODE		MAX. DCL (μA) 25 °C 85 °C 125 °C		Z MAX. IMPEDANCE AT -55 °C 120 Hz	CAPACITANCE CHANGE (%)			DF (%)	RIPPLE CURRENT <sup>(1)</sup> (mA)	
						(Ω)					
						AT +125 °C					
410	В	285D417(1)006B(2)N	3	14	14	36	-88	16	20	155	1500
440		0050447(4)0455(0)1				OC AT +125 °C	77		0.5	0.0	1000
410	F	285D417(1)015F(2)N	6	24	24	44	-77	20	25	3.6	1800
0.4		0055040(4)0054(0)14				OC AT +125 °C		- 10	45		050
34	A	285D346(1)025A(2)N	2	9	9	180	-40	12	15	22	850
135	В	285D147(1)025B(2)N	3	16	16	66	-62	13	16	55	1400
		2255524/2224/2/1				OC AT +125 °C					
58	A	285D586(1)030A(2)N	1	5	5	60	-38	8	12	12	1200
235	В	285D247(1)030B(2)N	2	10	10	30	-65	10	18	30	1800
						<sub>DC</sub> AT +125 °C					
34	Α	285D346(1)050A(2)N	1	5	5	66	-25	8	15	7.6	1050
60	В	285D606(1)050B(2)N	4	24	24	98	-42	12	15	23	1200
235	F	285D247(1)050F(2)N	3	25	25	20	-45	8	15	31	2100
340	G	285D347(1)050G(2)N	5	40	40	16	-58	10	20	35	2750
						<sub>DC</sub> AT +125 °C					
11	Α	285D116(1)075A(2)N	3	12	12	314	-19	10	12	8.5	600
41	В	285D416(1)075B(2)N	4	24	24	126	-30	12	15	15.2	1000
55	G	285D556(1)075G(2)N	9	36	36	58	-35	20	20	12	1850
			100 V <sub>I</sub>	DC AT 8	5 °C; 65 V	<sub>DC</sub> AT +125 °C					
5	Α	285D505(1)100A(2)N	3	12	12	400	-35	16	20	4.5	800
11	В	285D116(1)100B(2)N	1	9	9	200	-16	8	8	7.5	965
15	F	285D156(1)100F(2)N	2	12	12	160	-16	8	8	7	1240
			125 V <sub>I</sub>	DC AT 8	5 °C; 87 V	<sub>DC</sub> AT +125 °C					
1.8	Α	285D185(1)125A(2)N	1	2	2	1200	-16	7	8	2.7	520
7.0	В	285D705(1)125B(2)N	1	7	7	334	-16	7	8	6	860
23.5	F	285D246(1)125F(2)N	10	40	40	100	-26	14	16	7.9	1200
28	G	285D286(1)125G(2)N	10	40	40	64	-25	15	15	6.5	1800
			150 V <sub>D</sub>	C AT 85	°C; 100 \	/ <sub>DC</sub> AT +125 °C					
8.3	E	285D835(1)150E(2)N	1	5	5	264	-25	5	9	10	1050
			200 V <sub>D</sub>	<sub>C</sub> AT 85	°C; 150 \	/ <sub>DC</sub> AT +125 °C					
1.2	Е	285D125(1)200E(2)N	1	2	2	2260	-16	7	8	3	600
			250 V <sub>D</sub>	<sub>C</sub> AT 85	°C; 165 \	/ <sub>DC</sub> AT +125 °C					
1.7	E	285D175(1)250E(2)N	3	12	12	1200	-14	10	12	6	700

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