

Wet Tantalum Capacitors, Sintered Anode TANTALEX™, Tantalum Foil Replacement



FEATURES

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

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: ± 20 % standard, ± 10 %, ± 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

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.

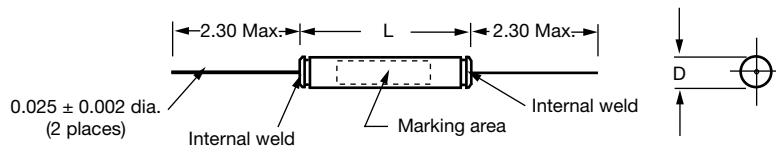
Following the life test:

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.

ORDERING INFORMATION						
285D	126	X0	250	B	0	
MODEL	CAPACITANCE	CAPACITANCE TOLERANCE	DC VOLTAGE RATING AT +85 °C	CASE CODE	STYLE NUMBER	POLARITY
	This is expressed in picofarads. The first two digits are the significant figures. The third is the number of zeros to follow.	X0 = ± 20 % X9 = ± 10 %	This is expressed in volts. To complete the three-digit block, zeros precede the voltage rating.	See Ratings and Case Codes table	0 = no outer tube 2 = outer polyester-film insulation	P = polar N = non polar

DIMENSIONS in inches [millimeters]

Case material: Aluminum
Case neutral



CASE CODE	BARE CASE		WITH INSULATION SLEEVE	
	D ± 0.010	L ± 0.062	D (MAX.)	L
A	0.385 [9.78]	1.850 [46.99]	0.406 [10.31]	(Sleeve will extend over both ends of the case)
B	0.385 [9.78]	2.250 [57.15]	0.406 [10.31]	
C	0.385 [9.78]	2.700 [68.58]	0.406 [10.31]	
D	0.385 [9.78]	3.000 [76.20]	0.406 [10.31]	
E	0.478 [12.14]	1.950 [49.53]	0.500 [12.70]	
F	0.478 [12.14]	2.380 [60.43]	0.500 [12.70]	
G	0.478 [12.14]	3.060 [77.72]	0.500 [12.70]	
H	0.478 [12.14]	3.500 [88.90]	0.500 [12.70]	



STANDARD RATINGS POLAR CAPACITORS												
CAPACITANCE (μ F)	CASE CODE	PART NUMBER	MAX. DCL (μ A)			Z MAX. IMPEDANCE AT -55 °C 120 Hz (Ω)	CAPACITANCE CHANGE (%)			DF (%)	RIPPLE CURRENT ⁽¹⁾ (mA)	
			25 °C	85 °C	125 °C		-55 °C	85 °C	125 °C			
150 V_{DC} AT 85 °C; 100 V_{DC} AT +125 °C												
55	B	285D556(1)150B(2)P	2	10	10	48	-35	6	10	10	1650	
200 V_{DC} AT 85 °C; 135 V_{DC} AT +125 °C												
1.5	A	285D155(1)200A(2)P	1	2	2	1420	-16	7	8	3	400	
2.3	A	285D235(1)200A(2)P	1	2	2	995	-16	7	8	3	565	
11	B	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_{DC} AT 85 °C; 165 V_{DC} AT +125 °C												
1.8	A	285D185(1)250A(2)P	1	2	2	1200	-16	7	8	3	520	
3.4	B	285D345(1)250B(2)P	3	12	12	600	-14	10	12	6	700	
13	B	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_{DC} AT 85 °C; 200 V_{DC} AT +125 °C												
1.0	C	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	H	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.



STANDARD RATINGS NON-POLAR CAPACITORS											
CAPACITANCE (μ F)	CASE CODE	PART NUMBER	MAX. DCL (μ A)			Z MAX. IMPEDANCE AT -55 °C 120 Hz (Ω)	CAPACITANCE CHANGE (%)			DF (%)	RIPPLE CURRENT ⁽¹⁾ (mA)
			25 °C	85 °C	125 °C		-55 °C	85 °C	125 °C		
6 V_{DC} AT 85 °C; 4 V_{DC} AT +125 °C											
410	B	285D417(1)006B(2)N	3	14	14	36	-88	16	20	155	1500
15 V_{DC} AT 85 °C; 10 V_{DC} AT +125 °C											
410	F	285D417(1)015F(2)N	6	24	24	44	-77	20	25	3.6	1800
25 V_{DC} AT 85 °C; 15 V_{DC} AT +125 °C											
34	A	285D346(1)025A(2)N	2	9	9	180	-40	12	15	22	850
135	B	285D147(1)025B(2)N	3	16	16	66	-62	13	16	55	1400
30 V_{DC} AT 85 °C; 20 V_{DC} AT +125 °C											
58	A	285D586(1)030A(2)N	1	5	5	60	-38	8	12	12	1200
235	B	285D247(1)030B(2)N	2	10	10	30	-65	10	18	30	1800
50 V_{DC} AT 85 °C; 30 V_{DC} AT +125 °C											
34	A	285D346(1)050A(2)N	1	5	5	66	-25	8	15	7.6	1050
60	B	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
75 V_{DC} AT 85 °C; 50 V_{DC} AT +125 °C											
11	A	285D116(1)075A(2)N	3	12	12	314	-19	10	12	8.5	600
41	B	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_{DC} AT 85 °C; 65 V_{DC} AT +125 °C											
5	A	285D505(1)100A(2)N	3	12	12	400	-35	16	20	4.5	800
11	B	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_{DC} AT 85 °C; 87 V_{DC} AT +125 °C											
1.8	A	285D185(1)125A(2)N	1	2	2	1200	-16	7	8	2.7	520
7.0	B	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_{DC} AT 85 °C; 100 V_{DC} AT +125 °C											
8.3	E	285D835(1)150E(2)N	1	5	5	264	-25	5	9	10	1050
200 V_{DC} AT 85 °C; 150 V_{DC} AT +125 °C											
1.2	E	285D125(1)200E(2)N	1	2	2	2260	-16	7	8	3	600
250 V_{DC} AT 85 °C; 165 V_{DC} AT +125 °C											
1.7	E	285D175(1)250E(2)N	3	12	12	1200	-14	10	12	6	700

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.



Disclaimer

ALL PRODUCT, PRODUCT SPECIFICATIONS AND DATA ARE SUBJECT TO CHANGE WITHOUT NOTICE TO IMPROVE RELIABILITY, FUNCTION OR DESIGN OR OTHERWISE.

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 in any datasheet or in any other disclosure relating to any product.

Vishay makes no warranty, representation or guarantee regarding the suitability of the products for any particular purpose or the continuing production of any product. To the maximum extent permitted by applicable law, Vishay disclaims (i) any and all liability arising out of the application or use of any product, (ii) any and all liability, including without limitation special, consequential or incidental damages, and (iii) any and all implied warranties, including warranties of fitness for particular purpose, non-infringement and merchantability.

Statements regarding the suitability of products for certain types of applications are based on Vishay's knowledge of typical requirements that are often placed on Vishay products in generic applications. Such statements are not binding statements about the suitability of products for a particular application. It is the customer's responsibility to validate that a particular product with the properties described in the product specification is suitable for use in a particular application. Parameters provided in datasheets and / or specifications may vary in different applications and performance may vary over time. All operating parameters, including typical parameters, must be validated for each customer application by the customer's technical experts. Product specifications do not expand or otherwise modify Vishay's terms and conditions of purchase, including but not limited to the warranty expressed therein.

Except as expressly indicated in writing, Vishay products are not designed for use in medical, life-saving, or life-sustaining applications or for any other application in which the failure of the Vishay product could result in personal injury or death. Customers using or selling Vishay products not expressly indicated for use in such applications do so at their own risk. Please contact authorized Vishay personnel to obtain written terms and conditions regarding products designed for such applications.

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