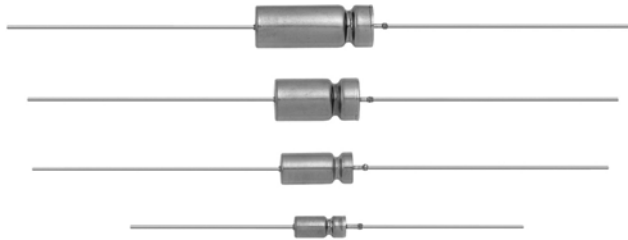


Wet Tantalum HI-TMP[®] Capacitors Tantalum-Case with Glass-to-Tantalum Hermetic Seal for - 55 °C to + 200 °C Operation



FEATURES

- High capacitance
- All tantalum, hermetically sealed, tantalum case
- + 200 °C high temperature
- Terminations: Axial, standard tin/lead (SnPb)
- 100 % tin (RoHS compliant) available
- Material categorization: For definitions of compliance please see www.vishay.com/doc?99912


RoHS*
COMPLIANT

Note

* Lead (Pb)-containing terminations are not RoHS-compliant. Exemptions may apply.

APPLICATIONS

- Industrial
- Petroleum exploration
- High temperature/high stress environment

PERFORMANCE CHARACTERISTICS

Operating Temperature: - 55 °C to + 85 °C (to + 200 °C with voltage derating)

Capacitance Tolerance: At 120 Hz, + 25 °C; ± 20 % standard; ± 10 %

DC Leakage Current (DCL Max.): At + 25 °C and above: Leakage current shall not exceed the values listed in the Standard Ratings tables.

Life Test: Capacitors are capable of withstanding a 500 h life test at a temperature of + 200 °C at the applicable derated DC working voltage.

ORDERING INFORMATION						
134D	227	X0	100	K	6	E3
TYPE	CAPACITANCE	CAPACITANCE TOLERANCE	DC VOLTAGE RATING AT + 85 °C	CASE CODE	STYLE NUMBER	RoHS COMPLIANT
	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. A decimal point is indicated by an "R" (6R3 = 6.3 V)	See Ratings and Case Codes table	High temperature 8 = No outer insulating sleeve 6 = High temperature film insulation (above + 125 °C)	E3 = 100 % tin termination (RoHS compliant design) Blank = SnPb termination (standard design)

Note

- Packaging: The use of formed plastic trays for packaging these axial lead components is standard. Tape and reel is not available due to the unit weight.

DIMENSIONS in inches [millimeters]						
CASE CODE		D	L ₁ ⁽¹⁾	L ₂ (Max.)	E	WEIGHT (g) (Max.)
TYPE 134D	CLR 79/81 EQUIV.					
C	T1	0.188 ± 0.016 [4.78 ± 0.41]	0.453 + 0.031/- 0.016 [11.51 + 0.79/- 0.41]	0.734 [18.64]	1.500 ± 0.250 [38.10 ± 6.35]	2.6
F	T2	0.281 ± 0.016 [7.14 ± 0.41]	0.641 + 0.031/- 0.016 [16.28 + 0.79/- 0.41]	0.922 [23.42]	2.250 ± 0.250 [57.15 ± 6.35]	6.2
T	T3	0.375 ± 0.016 [9.53 ± 0.41]	0.766 + 0.031/- 0.016 [19.46 + 0.79/- 0.41]	1.047 [26.59]	2.250 ± 0.250 [57.15 ± 6.35]	11.6
K	T4	0.375 ± 0.016 [9.53 ± 0.41]	1.062 + 0.031/- 0.016 [26.97 + 0.79/- 0.41]	1.343 [34.11]	2.250 ± 0.250 [57.15 ± 6.35]	17.7

Note

⁽¹⁾ For insulated parts, add 0.015 inches [0.38 mm] to the diameter. The insulation shall lap over the ends of the capacitor body.



STANDARD RATINGS												
CAPACITANCE AT 25 °C 120 Hz (μ F)	CASE CODE	MAX. 120 Hz ESR (Ω)	MAX. DCL (μ A)		MAX. IMP., Z AT - 25 °C (Ω)	MAX. Δ CAP. AT - 25 °C (%)	TYP. IMP., Z AT - 55 °C (Ω)	TYP. Δ CAP. AT - 55 °C (%)	TYP. Δ CAP. (%)		AC RIPPLE 85 °C 40 kHz (mA) RMS	PART NUMBER
			25 °C	85 °C/ 125 °C					85 °C	125 °C		
50 V_{DC} AT 85 °C; 30 V_{DC} AT 125 °C; 30 V_{DC} AT 200 °C												
68	C	1.50	1	5	22	- 6	25	- 11	12	55	1400	134D686(1)050C(2)(3)
220	F	0.90	2	10	9	- 15	10	- 25	13	50	2300	134D227(1)050F(2)(3)
470	T	0.75	3	25	6	- 24	8	- 50	10	25	2650	134D477(1)050T(2)(3)
680	K	0.70	5	40	4	- 22	5	- 40	12	40	2900	134D687(1)050K(2)(3)
60 V_{DC} AT 85 °C; 40 V_{DC} AT 125 °C; 36 V_{DC} AT 200 °C												
47	C	2.00	1	5	34	- 8	40	- 20	8	12	1250	134D476(1)060C(2)(3)
150	F	1.10	2	10	13	- 11	15	- 25	10	30	2050	134D157(1)060F(2)(3)
390	T	0.90	3	25	7	- 27	10	- 50	10	25	2450	134D397(1)060T(2)(3)
560	K	0.80	5	40	5	- 21	6	- 40	12	40	2700	134D567(1)060K(2)(3)
75 V_{DC} AT 85 °C; 50 V_{DC} AT 125 °C; 45 V_{DC} AT 200 °C												
33	C	2.50	1	5	45	- 3.5	50	- 6	8	25	1100	134D336(1)075C(2)(3)
110	F	1.30	2	10	16	- 8	20	- 18	8	30	1900	134D117(1)075F(2)(3)
330	T	1.00	3	30	8	- 30	12	- 50	10	25	2300	134D337(1)075T(2)(3)
470	K	0.90	5	50	6	- 20	7	- 40	10	40	2550	134D477(1)075K(2)(3)
100 V_{DC} AT 85 °C; 65 V_{DC} AT 125 °C; 60 V_{DC} AT 200 °C												
15	C	3.50	1	5	95	- 2.5	100	- 4	8	25	950	134D156(1)100C(2)(3)
68	F	2.10	2	10	25	- 6	30	- 14	8	25	1500	134D686(1)100F(2)(3)
150	T	1.60	3	25	14	- 12	18	- 30	8	22	1800	134D157(1)100T(2)(3)
220	K	1.20	5	50	13	- 44	16	- 55	8	15	2200	134D227(1)100K(2)(3)
125 V_{DC} AT 85 °C; 85 V_{DC} AT 125 °C; 75 V_{DC} AT 200 °C												
10	C	5.50	1	5	145	- 2.5	150	- 4	8	20	750	134D106(1)125C(2)(3)
47	F	2.30	2	10	35	- 5	40	- 12	7	20	1450	134D476(1)125F(2)(3)
50	F	2.30	3	10	35	- 5	40	- 12	7	20	1450	134D506(1)125F(2)(3)
100	T	1.80	3	25	24	- 20	30	- 35	8	20	1700	134D107(1)125T(2)(3)
150	K	1.60	5	50	13	- 10	16	- 28	6	12	1900	134D157(1)125K(2)(3)

Note

- Part number definitions:
 - Capacitance tolerance: X9 = 10 %, X0 = 20 %
 - Style number: 8 = No film insulation, 6 = High temperature film insulation
 - Termination: Blank = Standard tin/lead, E3 = RoHS compliant 100 % tin



EXTENDED RATINGS												
CAPACITANCE AT 25 °C 120 Hz (μF)	CASE CODE	MAX. 120 Hz ESR (Ω)	MAX. DCL (μA)		MAX. IMP, Z AT - 25 °C (Ω)	MAX. ΔCAP. AT - 25 °C (%)	TYP. IMP., Z AT - 55 °C (Ω)	TYP. ΔCAP. AT - 55 °C (%)	TYP. ΔCAP. (%)		AC RIPPLE 85 °C 40 kHz (mA) RMS	PART NUMBER
			25 °C	85 °C/ 125 °C					85 °C	125 °C		
50 V_{DC} AT 85 °C; 30 V_{DC} AT 125 °C; 30 V_{DC} AT 200 °C												
	C											
	F											
	T											
	K											
60 V_{DC} AT 85 °C; 40 V_{DC} AT 125 °C; 36 V_{DC} AT 200 °C												
	C											
	F											
	T											
1000	K	0.50	20	120	3	- 25	< 4.5	< - 55	< 12	< 15	3500	134D108(1)060K(2)(3)
75 V_{DC} AT 85 °C; 50 V_{DC} AT 125 °C; 45 V_{DC} AT 200 °C												
	C											
180	F	1.50	5	25			30	- 35	15	20	2000	134D187(1)075C(2)(3)
	T											
750	K	0.60	20	120	3	- 25	< 6.0	< - 60	< 10	< 15	3500	134D757(1)075K(2)(3)
100 V_{DC} AT 85 °C; 65 V_{DC} AT 125 °C; 60 V_{DC} AT 200 °C												
	C											
	F											
220	T	1.60	5	30	15	- 40	15	- 45	10	15	1800	134D227(1)100T(2)(3)
400	K	0.70	10	120	5	- 15	15	- 55	10	15	3250	134D407(1)100K(2)(3)
125 V_{DC} AT 85 °C; 85 V_{DC} AT 125 °C; 75 V_{DC} AT 200 °C												
	C											
	F											
	T											
	K											

Note

- Part number definitions:
 - Capacitance tolerance: X9 = 10 %, X0 = 20 %
 - Style number: 8 = No film insulation, 6 = High temperature film insulation
 - Termination: Blank = Standard tin/lead, E3 = RoHS compliant 100 % tin



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.

Material Category Policy

Vishay Intertechnology, Inc. hereby certifies that all its products that are identified as RoHS-Compliant fulfill the definitions and restrictions defined under Directive 2011/65/EU of The European Parliament and of the Council of June 8, 2011 on the restriction of the use of certain hazardous substances in electrical and electronic equipment (EEE) - recast, unless otherwise specified as non-compliant.

Please note that some Vishay documentation may still make reference to RoHS Directive 2002/95/EC. We confirm that all the products identified as being compliant to Directive 2002/95/EC conform to Directive 2011/65/EU.

Vishay Intertechnology, Inc. hereby certifies that all its products that are identified as Halogen-Free follow Halogen-Free requirements as per JEDEC JS709A standards. Please note that some Vishay documentation may still make reference to the IEC 61249-2-21 definition. We confirm that all the products identified as being compliant to IEC 61249-2-21 conform to JEDEC JS709A standards.