

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



FEATURES

- High capacitance
- Hermetically sealed, tantalum case
- + 200 °C high temperature
- Terminations: Axial, standard tin/lead (SnPb)
- 100 % tin (RoHS-compliant) available
- Mounting: Through-hole
- 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



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