

# Type THF Solid Tantalum Capacitors

## Hermetically Sealed Axial Lead Solid Tantalum Capacitors



The Type THF is ideal for use in switching regulators and high frequency power supplies because of its high ripple current and low ESR capabilities. It is an axial lead solid tantalum capacitor constructed with a rugged hermetically sealed metal case, insulated with an outer polyester wrap. The THF assures a small case size for high capacitance, and is extremely stable over the rated temperature range.

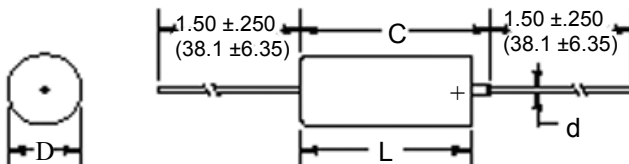
### Highlights

- ♦ High Ripple Current
- ♦ Low ESR
- ♦ Lower Impedance at High Frequency
- ♦ Extremely Stable Capacitance
- ♦ Long Life
- ♦ Moisture & Solvent Resistant
- ♦ Small Size

### Specifications

|                               |                                                                     |
|-------------------------------|---------------------------------------------------------------------|
| <b>Capacitance Range:</b>     | 5.6 $\mu$ F to 330 $\mu$ F                                          |
| <b>Voltage Range:</b>         | 6 WVdc to 50 WVdc @ 85 °C                                           |
| <b>Capacitance Tolerance:</b> | -55 °C to +125 °C ( With proper derating)                           |
| <b>Operating Temperature:</b> | $\pm 10\%$ (K), $\pm 20\%$ (M)<br>At +25 °C - (See Ratings)         |
| <b>DC Leakage:</b>            | At +85 °C - 10 x Ratings limit<br>At +125 °C - 12.5 x Ratings limit |

### Outline Drawing



|      | Uninsulated   |               | Insulated     |               | Inches (mm) |               |          |
|------|---------------|---------------|---------------|---------------|-------------|---------------|----------|
|      | D             | L             | D             | L             | C           | d             | Quantity |
| Case | $\pm .005$    | $\pm .031$    | $\pm .010$    | $\pm .031$    |             | $\pm .001$    |          |
| Code | ( $\pm .13$ ) | ( $\pm .79$ ) | ( $\pm .25$ ) | ( $\pm .79$ ) | Maximum     | ( $\pm .03$ ) | Per Reel |
| F    | .279(7.09)    | .650(16.51)   | .289(7.34)    | .686(17.42)   | .822(20.88) | .025(.64)     | 500      |
| G    | .341(8.66)    | .750(19.05)   | .351(8.92)    | .786(19.96)   | .922(23.42) | .025(.64)     | 400      |

### Part Numbering System

|      |                                                              |                                  |                                             |           |              |           |
|------|--------------------------------------------------------------|----------------------------------|---------------------------------------------|-----------|--------------|-----------|
| THF  | 157                                                          | M                                | 006                                         | P         | 1            | F         |
| Type | Capacitance                                                  | Tolerance                        | Voltage                                     | Polar     | Mylar Sleeve | Case Code |
| THF  | 565 = 5.6 $\mu$ F<br>186 = 18.6 $\mu$ F<br>157 = 150 $\mu$ F | K = $\pm 10\%$<br>M = $\pm 20\%$ | 006 = 6 Vdc<br>020 = 20 Vdc<br>050 = 50 Vdc | P = Polar | 1            | F<br>G    |

# Type THF Solid Tantalum Capacitors

## Ratings

| Cap<br>(µF)                         | Catalog<br>Part Number | Case<br>Code | Max<br>DCL<br>@ +25 °C<br>(µA) | Max<br>DF %<br>@ +25 °C<br>1 kHz | Max<br>ESR (ohms)<br>@ +25 °C<br>100 kHz | Max Ripple<br>RMS Amps<br>@ 40 kHz<br>+25°C |
|-------------------------------------|------------------------|--------------|--------------------------------|----------------------------------|------------------------------------------|---------------------------------------------|
| 6 WVdc @ 85 °C<br>4 WVdc @ 125 °C   |                        |              |                                |                                  |                                          |                                             |
| 150                                 | THF157K006P1F          | F            | 4.5                            | 10                               | 0.065                                    | 3.3                                         |
| 180                                 | THF187K006P1F          | F            | 5.5                            | 10                               | 0.060                                    | 3.4                                         |
| 270                                 | THF277K006P1G          | G            | 6.5                            | 10                               | 0.050                                    | 4.1                                         |
| 330                                 | THF337K006P1G          | G            | 7.5                            | 12                               | 0.045                                    | 4.3                                         |
| 10 WVdc @ 85 °C<br>7 WVdc @ 125 °C  |                        |              |                                |                                  |                                          |                                             |
| 82                                  | THF826K010P1F          | F            | 4                              | 8                                | 0.085                                    | 2.9                                         |
| 100                                 | THF107K010P1F          | F            | 5                              | 8                                | 0.075                                    | 3.0                                         |
| 120                                 | THF127K010P1F          | F            | 6                              | 8                                | 0.070                                    | 3.2                                         |
| 180                                 | THF187K010P1G          | G            | 9                              | 8                                | 0.060                                    | 3.7                                         |
| 220                                 | THF227K010P1G          | G            | 10                             | 10                               | 0.055                                    | 3.9                                         |
| 15 WVdc @ 85 °C<br>10 WVdc @ 125 °C |                        |              |                                |                                  |                                          |                                             |
| 56                                  | THF566K015P1F          | F            | 4                              | 6                                | 0.100                                    | 2.6                                         |
| 68                                  | THF686K015P1F          | F            | 5                              | 6                                | 0.095                                    | 2.7                                         |
| 120                                 | THF127K015P1G          | G            | 9                              | 8                                | 0.070                                    | 3.5                                         |
| 150                                 | THF157K015P1G          | G            | 10                             | 8                                | 0.065                                    | 3.6                                         |
| 20 WVdc @ 85 °C<br>13 WVdc @ 125 °C |                        |              |                                |                                  |                                          |                                             |
| 27                                  | THF276K020P1F          | F            | 2.5                            | 5                                | 0.145                                    | 2.2                                         |
| 33                                  | THF336K020P1F          | F            | 3.5                            | 5                                | 0.130                                    | 2.3                                         |
| 39                                  | THF396K020P1F          | F            | 4.0                            | 5                                | 0.120                                    | 2.4                                         |
| 47                                  | THF476K020P1F          | F            | 4.5                            | 6                                | 0.110                                    | 2.5                                         |
| 56                                  | THF566K020P1G          | G            | 5.5                            | 6                                | 0.100                                    | 2.9                                         |
| 68                                  | THF686K020P1G          | G            | 7.0                            | 6                                | 0.095                                    | 3.0                                         |
| 82                                  | THF826K020P1G          | G            | 8.0                            | 6                                | 0.085                                    | 3.1                                         |
| 100                                 | THF107K020P1G          | G            | 10.0                           | 8                                | 0.075                                    | 3.3                                         |
| 35 WVdc @ 85 °C<br>23 WVdc @ 125 °C |                        |              |                                |                                  |                                          |                                             |
| 10                                  | THF106K035P1F          | F            | 4.0                            | 4                                | 0.161                                    | 1.5                                         |
| 22                                  | THF226K035P1F          | F            | 4.0                            | 4                                | 0.160                                    | 2.1                                         |
| 27                                  | THF276K035P1G          | G            | 4.5                            | 4                                | 0.145                                    | 2.4                                         |
| 33                                  | THF336K035P1G          | G            | 5.5                            | 5                                | 0.130                                    | 2.5                                         |
| 39                                  | THF396K035P1G          | G            | 7.0                            | 5                                | 0.120                                    | 2.6                                         |
| 47                                  | THF476K035P1G          | G            | 8.0                            | 5                                | 0.110                                    | 2.7                                         |
| 50 WVdc @ 85 °C<br>33 WVdc @ 125 °C |                        |              |                                |                                  |                                          |                                             |
| 5.6                                 | THF565K050P1F          | F            | 2.2                            | 3                                | 0.300                                    | 1.5                                         |
| 6.8                                 | THF685K050P1F          | F            | 2.2                            | 3                                | 0.275                                    | 1.6                                         |
| 8.2                                 | THF825K050P1F          | F            | 2.5                            | 3                                | 0.250                                    | 1.6                                         |
| 10.0                                | THF106K050P1F          | F            | 2.5                            | 3                                | 0.230                                    | 1.7                                         |
| 12.0                                | THF126K050P1F          | F            | 3.0                            | 3                                | 0.210                                    | 1.8                                         |
| 15.0                                | THF156K050P1F          | F            | 4.0                            | 3                                | 0.190                                    | 1.9                                         |
| 18.0                                | THF186K050P1F          | F            | 4.5                            | 4                                | 0.175                                    | 2.0                                         |
| 22.0                                | THF226K050P1G          | G            | 5.5                            | 4                                | 0.160                                    | 2.3                                         |

## Type THF Solid Tantalum Capacitors

---

**Notice and Disclaimer:** All product drawings, descriptions, specifications, statements, information and data (collectively, the "Information") in this datasheet or other publication are subject to change. The customer is responsible for checking, confirming and verifying the extent to which the Information contained in this datasheet or other publication is applicable to an order at the time the order is placed. All Information given herein is believed to be accurate and reliable, but it is presented without any guarantee, warranty, representation or responsibility of any kind, expressed or implied. Statements of suitability for certain applications are based on the knowledge that the Cornell Dubilier company providing such statements ("Cornell Dubilier") has of operating conditions that such Cornell Dubilier company regards as typical for such applications, but are not intended to constitute any guarantee, warranty or representation regarding any such matter – and Cornell Dubilier specifically and expressly disclaims any guarantee, warranty or representation concerning the suitability for a specific customer application, use, storage, transportation, or operating environment. The Information is intended for use only by customers who have the requisite experience and capability to determine the correct products for their application. Any technical advice inferred from this Information or otherwise provided by Cornell Dubilier with reference to the use of any Cornell Dubilier products is given gratis (unless otherwise specified by Cornell Dubilier), and Cornell Dubilier assumes no obligation or liability for the advice given or results obtained. Although Cornell Dubilier strives to apply the most stringent quality and safety standards regarding the design and manufacturing of its products, in light of the current state of the art, isolated component failures may still occur. Accordingly, customer applications which require a high degree of reliability or safety should employ suitable designs or other safeguards (such as installation of protective circuitry or redundancies or other appropriate protective measures) in order to ensure that the failure of an electrical component does not result in a risk of personal injury or property damage. Although all product-related warnings, cautions and notes must be observed, the customer should not assume that all safety measures are indicated in such warnings, cautions and notes, or that other safety measures may not be required.