



# Product Change Notification



**Product Group:** TC **Issue Date:** October 9, 2008 **PCN:** TC-010-2008, Rev 0

## Add ESR Values to TH3 Part Numbers

**DESCRIPTION OF CHANGE:** Original TH3 part numbers did not include maximum 100kHz ESR values. TH3 part numbers have been updated to include maximum the 100kHz ESR specification values.

**CLASSIFICATION OF CHANGE:** Part numbers from Vishay Product Series TH3.

**REASON FOR CHANGE:** Capacitance and ESR are critical design parameters for tantalum capacitor applications. Adding the ESR value to the TH3 part numbers will save designers time.

**EXPECTED INFLUENCE ON QUALITY/RELIABILITY/PERFORMANCE:** This part number change does not affect processing or final test inspection. Quality, Reliability, Environmental and Electrical performance is not affected by this change.

**PRODUCT CATEGORY:** Tantalum Capacitors

**PART NUMBERS/SERIES/FAMILIES AFFECTED:** Original and Current TH3 Part Numbers are shown on the attached sheet.

**VISHAY BRAND(s):** VISHAY SPRAGUE

**TIME SCHEDULE:**

**Conversion Start Date:** All original capacitor ratings are now available with updated part number.

**Last Time Buy Date:** All original capacitor ratings are now available with updated part number.

**Last Time Shipment Date:** All original capacitor ratings are now available with updated part number.

**SAMPLE AVAILABILITY:** October 9, 2008

**PRODUCT IDENTIFICATION:** Reel labels and shipping containers are marked with the TH3 part number.

**QUALIFICATION DATA:** N/A.

**This PCN is for notification purposes only. No approvals are required.**

**ISSUED BY:** Dave Toomey

| For further questions refer to Regional Marketing at the VISHAY Tantalum Capacitor Division   |  |   |
|---|--|---|
| <b>VISHAY</b><br><b>Regional Marketing Europe</b><br>Industrial Park, P.O.B 87<br>Dimona 86100<br>Israel<br>Att: Albert Mallet<br>Phone: +972-8-656-1112<br>Fax: +972-8-655-8360<br>Email: Albert.Mallet@Vishay.com | <b>VISHAY</b><br><b>Regional Marketing Asia</b><br>25 Tampines Street 92<br>Keppel Building #02-00<br>Singapore 528877<br>Att: Song Hee Lau<br>Phone: +65-780-7711<br>Fax: +65-780-7778<br>Email: Songhee.Lau@Vishay.com | <b>VISHAY</b><br><b>Regional Marketing Americas</b><br>15 Daigle Lane, Suite 103<br>Sanford, ME 04073<br>USA<br>Att: Jack Culloton<br>Phone: +1-207-490-7208<br>Fax: +1-207-490-7213<br>Email: Jack.Culloton@Vishay.com |

Vishay Intertechnology, Inc.

Corporate Headquarters 63 Lincoln Highway, Malvern, PA 19355-2143 U.S.A. Phone (610) 644-1300 Fax (610) 296-0657 [www.vishay.com](http://www.vishay.com)

ONE OF THE WORLD'S LARGEST MANUFACTURERS OF DISCRETE SEMICONDUCTORS AND PASSIVE COMPONENT

# Add ESR to TH3 Part Number

## PCN: TC-010-2008, Rev 0

| Original Part Number | Current Part Number<br>with ESR Values | Capacitance | Voltage | 100kHz ESR | Case<br>Code | EIA<br>Code | Comments  |
|----------------------|--|-------------|---------|------------|--------------|-------------|-----------|
|                      |  | ( $\mu$ F)  | (Volts) | (Ohms)     |              |             |           |
| NA                   | TH3A106(1)6R3(2)2700                   | 10          | 6.3     | 2.70       | A            | 3216-18     | New Value |
| NA                   | TH3B156(1)6R3(2)1800                   | 15          | 6.3     | 1.80       | B            | 3528-21     | New Value |
| NA                   | TH3B226(1)6R3(2)1500                   | 22          | 6.3     | 1.50       | B            | 3528-21     | New Value |
| NA                   | TH3B336(1)6R3(2)1700                   | 33          | 6.3     | 1.70       | B            | 3528-21     | New Value |
| NA                   | TH3B476(1)6R3(2)1800                   | 47          | 6.3     | 1.80       | B            | 3528-21     | New Value |
| NA                   | TH3C476(1)6R3(2)0800                   | 47          | 6.3     | 0.80       | C            | 6032-28     | New Value |
| TH3A225(1)010(2)     | TH3A225(1)010(2)4600                   | 2.2         | 10      | 4.60       | A            | 3216-18     |           |
| TH3A475(1)010(2)     | TH3A475(1)010(2)2900                   | 4.7         | 10      | 2.90       | A            | 3216-18     |           |
| TH3B475(1)010(2)     | TH3B475(1)010(2)2700                   | 4.7         | 10      | 2.70       | B            | 3528-21     |           |
| TH3A106(1)010(2)     | TH3A106(1)010(2)3400                   | 10          | 10      | 3.40       | A            | 3216-18     |           |
| TH3B106(1)010(2)     | TH3B106(1)010(2)1800                   | 10          | 10      | 1.80       | B            | 3528-21     |           |
| TH3C106(1)010(2)     | TH3C106(1)010(2)1700                   | 10          | 10      | 1.70       | C            | 6032-28     |           |
| NA                   | TH3B156(1)010(2)1500                   | 15          | 10      | 1.50       | B            | 3528-21     | New Value |
| NA                   | TH3C156(1)010(2)1400                   | 15          | 10      | 1.40       | C            | 6032-28     | New Value |
| TH3B226(1)010(2)     | TH3B226(1)010(2)1500                   | 22          | 10      | 1.50       | B            | 3528-21     |           |
| NA                   | TH3C226(1)010(2)1100                   | 22          | 10      | 1.10       | C            | 6032-28     | New Value |
| NA                   | TH3D336(1)010(2)0800                   | 33          | 10      | 0.80       | D            | 7343-31     | New Value |
| NA                   | TH3B476(1)010(2)1800                   | 47          | 10      | 1.80       | B            | 3528-21     | New Value |
| NA                   | TH3C476(1)010(2)0800                   | 47          | 10      | 0.80       | C            | 6032-28     | New Value |
| NA                   | TH3C476(1)010(2)0500                   | 47          | 10      | 0.50       | C            | 6032-28     | New Value |
| TH3D476(1)010(2)     | TH3D476(1)010(2)0600                   | 47          | 10      | 0.60       | D            | 7343-31     |           |
| TH3C686(1)010(2)     | TH3C686(1)010(2)0800                   | 68          | 10      | 0.80       | C            | 6032-28     |           |
| TH3D686(1)010(2)     | TH3D686(1)010(2)0600                   | 68          | 10      | 0.60       | D            | 7343-31     |           |
| NA                   | TH3D686(1)010(2)0400                   | 68          | 10      | 0.40       | D            | 7343-31     | New Value |
| TH3D107(1)010(2)     | TH3D107(1)010(2)0600                   | 100         | 10      | 0.60       | D            | 7343-31     |           |
| TH3E227(1)010(2)     | TH3E227(1)010(2)0500                   | 220         | 16      | 0.50       | E            | 7343-43     |           |
| TH3A105(1)016(2)     | TH3A105(1)016(2)6500                   | 1.0         | 16      | 6.50       | A            | 3216-18     |           |
| TH3A225(1)016(2)     | TH3A225(1)016(2)4300                   | 2.2         | 16      | 4.30       | A            | 3216-18     |           |
| TH3A335(1)016(2)     | TH3A335(1)016(2)3400                   | 3.3         | 16      | 3.40       | A            | 3216-18     |           |
| TH3B335(1)016(2)     | TH3B335(1)016(2)3000                   | 3.3         | 16      | 3.00       | B            | 3528-21     |           |
| TH3B475(1)016(2)     | TH3B475(1)016(2)2100                   | 4.7         | 16      | 2.10       | B            | 3528-21     |           |
| TH3B685(1)016(2)     | TH3B685(1)016(2)1800                   | 6.8         | 16      | 1.80       | B            | 3528-21     |           |
| TH3C685(1)016(2)     | TH3C685(1)016(2)1700                   | 6.8         | 16      | 1.70       | C            | 6032-28     |           |
| NA                   | TH3B106(1)016(2)2000                   | 10          | 16      | 2.00       | B            | 3528-21     | New Value |
| TH3C106(1)016(2)     | TH3C106(1)016(2)1400                   | 10          | 16      | 1.40       | C            | 6032-28     |           |
| TH3B226(1)016(2)     | TH3B226(1)016(2)1900                   | 22          | 16      | 1.90       | B            | 3528-21     |           |
| TH3C226(1)016(2)     | TH3C226(1)016(2)1000                   | 22          | 16      | 1.00       | C            | 6032-28     |           |
| TH3D226(1)016(2)     | TH3D226(1)016(2)0800                   | 22          | 16      | 0.80       | D            | 7343-31     |           |
| TH3D336(1)016(2)     | TH3D336(1)016(2)0600                   | 33          | 16      | 0.60       | D            | 7343-31     |           |
| NA                   | TH3C476(1)016(2)0800                   | 47          | 16      | 0.80       | C            | 6032-28     | New Value |
| TH3D476(1)016(2)     | TH3D476(1)016(2)0600                   | 47          | 16      | 0.60       | D            | 7343-31     |           |
| TH3D686(1)016(2)     | TH3D686(1)016(2)0600                   | 68          | 16      | 0.60       | D            | 7343-31     |           |
| NA                   | TH3D107(1)016(2)0600                   | 100         | 16      | 0.60       | D            | 7343-31     | New Value |
| TH3E107(1)016(2)     | TH3E107(1)016(2)0600                   | 100         | 16      | 0.60       | E            | 7343-43     |           |
| TH3E107(1)016(2)T150 | TH3E107(1)016(2)0150                   | 100         | 16      | 0.15       | E            | 7343-43     |           |
| TH3A105(1)020(2)     | TH3A105(1)020(2)5900                   | 1.0         | 20      | 5.90       | A            | 3216-18     |           |
| TH3A225(1)020(2)     | TH3A225(1)020(2)5900                   | 2.2         | 20      | 5.90       | A            | 3216-18     |           |
| TH3B225(1)020(2)     | TH3B225(1)020(2)3500                   | 2.2         | 20      | 3.50       | B            | 3528-21     |           |
| NA                   | TH3B335(1)020(2)2700                   | 3.3         | 20      | 2.70       | B            | 3528-21     | New Value |
| NA                   | TH3B475(1)020(2)1900                   | 4.7         | 20      | 1.90       | B            | 3528-21     | New Value |
| TH3C475(1)020(2)     | TH3C475(1)020(2)1700                   | 4.7         | 20      | 1.70       | C            | 6032-28     |           |
| TH3C106(1)020(2)     | TH3C106(1)020(2)1100                   | 10          | 20      | 1.10       | C            | 6032-28     |           |
| NA                   | TH3C156(1)020(2)1000                   | 15          | 20      | 1.00       | C            | 6032-28     | New Value |

# Add ESR to TH3 Part Number

## PCN: TC-010-2008, Rev 0

| Original Part Number | Current Part Number<br>with ESR Values | Capacitance | Voltage | 100kHz ESR | Case<br>Code | EIA<br>Code | Comments  |
|----------------------|--|-------------|---------|------------|--------------|-------------|-----------|
|                      |  | ( $\mu$ F)  | (Volts) | (Ohms)     |              |             |           |
| NA                   | TH3D156(1)020(2)0900                   | 15          | 20      | 0.90       | D            | 7343-31     | New Value |
| NA                   | TH3C226(1)020(2)1000                   | 22          | 20      | 1.00       | C            | 6032-28     | New Value |
| TH3D226(1)020(2)     | TH3D226(1)020(2)0700                   | 22          | 20      | 0.70       | D            | 7343-31     |           |
| TH3D336(1)020(2)     | TH3D336(1)020(2)0600                   | 33          | 20      | 0.60       | D            | 7343-31     |           |
| TH3D476(1)020(2)     | TH3D476(1)020(2)0700                   | 47          | 20      | 0.70       | D            | 7343-31     |           |
| TH3E476(1)020(2)     | TH3E476(1)020(2)0600                   | 47          | 20      | 0.60       | E            | 7343-43     |           |
| NA                   | TH3A474(1)025(2)8500                   | 0.47        | 25      | 8.50       | A            | 3216-18     | New Value |
| TH3A105(1)025(2)     | TH3A105(1)025(2)5200                   | 1.0         | 25      | 5.20       | A            | 3216-18     |           |
| NA                   | TH3A105(1)025(2)3000                   | 1.0         | 25      | 3.00       | A            | 3216-18     | New Value |
| TH3B105(1)025(2)     | TH3B105(1)025(2)5000                   | 1.0         | 25      | 5.00       | B            | 3528-21     |           |
| TH3B225(1)025(2)     | TH3B225(1)025(2)3000                   | 2.2         | 25      | 3.00       | B            | 3528-21     |           |
| NA                   | TH3B335(1)025(2)3000                   | 3.3         | 25      | 3.00       | B            | 3528-21     | New Value |
| TH3C335(1)025(2)     | TH3C335(1)025(2)2000                   | 3.3         | 25      | 2.00       | C            | 6032-28     |           |
| NA                   | TH3B475(1)025(2)2800                   | 4.7         | 25      | 2.80       | B            | 3528-21     | New Value |
| TH3C475(1)025(2)     | TH3C475(1)025(2)1600                   | 4.7         | 25      | 1.60       | C            | 6032-28     |           |
| NA                   | TH3B685(1)025(2)2400                   | 6.8         | 25      | 2.40       | B            | 3528-21     | New Value |
| NA                   | TH3C685(1)025(2)1400                   | 6.8         | 25      | 1.40       | C            | 6032-28     | New Value |
| TH3C106(1)025(2)     | TH3C106(1)025(2)1100                   | 10          | 25      | 1.10       | C            | 6032-28     |           |
| TH3D106(1)025(2)     | TH3D106(1)025(2)0900                   | 10          | 25      | 0.90       | D            | 7343-31     |           |
| TH3C156(1)025(2)     | TH3C156(1)025(2)1200                   | 15          | 25      | 1.20       | C            | 6032-28     |           |
| TH3D156(1)025(2)     | TH3D156(1)025(2)0700                   | 15          | 25      | 0.70       | D            | 7343-31     |           |
| TH3D226(1)025(2)     | TH3D226(1)025(2)0600                   | 22          | 25      | 0.60       | D            | 7343-31     |           |
| TH3D336(1)025(2)     | TH3D336(1)025(2)0500                   | 33          | 25      | 0.50       | D            | 7343-31     |           |
| TH3E476(1)025(2)     | TH3E476(1)025(2)0600                   | 47          | 25      | 0.60       | E            | 7343-43     |           |
| TH3A334(1)035(2)     | TH3A334(1)035(2)11R0                   | 0.33        | 35      | 11.00      | A            | 3216-18     |           |
| NA                   | TH3A105(1)035(2)6600                   | 1.0         | 35      | 6.60       | A            | 3216-18     | New Value |
| TH3B105(1)035(2)     | TH3B105(1)035(2)4400                   | 1.0         | 35      | 4.40       | B            | 3528-21     |           |
| NA                   | TH3B155(1)035(2)4200                   | 1.5         | 35      | 4.20       | B            | 3528-21     | New Value |
| TH3C155(1)035(2)     | TH3C155(1)035(2)3300                   | 1.5         | 35      | 3.30       | C            | 6032-28     |           |
| TH3C225(1)035(2)     | TH3C225(1)035(2)2200                   | 2.2         | 35      | 2.20       | C            | 6032-28     |           |
| TH3C335(1)035(2)     | TH3C335(1)035(2)1700                   | 3.3         | 35      | 1.70       | C            | 6032-28     |           |
| NA                   | TH3B475(1)035(2)3100                   | 4.7         | 35      | 3.10       | B            | 3528-21     | New Value |
| TH3C475(1)035(2)     | TH3C475(1)035(2)1300                   | 4.7         | 35      | 1.30       | C            | 6032-28     |           |
| TH3D475(1)035(2)     | TH3D475(1)035(2)1000                   | 4.7         | 35      | 1.00       | D            | 7343-31     |           |
| TH3D685(1)035(2)     | TH3D685(1)035(2)0900                   | 6.8         | 35      | 0.90       | D            | 7343-31     |           |
| NA                   | TH3C106(1)035(2)1600                   | 10          | 35      | 1.60       | C            | 6032-28     | New Value |
| TH3D106(1)035(2)     | TH3D106(1)035(2)0700                   | 10          | 35      | 0.70       | D            | 7343-31     |           |
| TH3D156(1)035(2)     | TH3D156(1)035(2)0700                   | 15          | 35      | 0.70       | D            | 7343-31     |           |
| TH3D226(1)035(2)     | TH3D226(1)035(2)0600                   | 22          | 35      | 0.60       | D            | 7343-31     |           |
| NA                   | TH3D226(1)035(2)0300                   | 22          | 35      | 0.30       | D            | 7343-31     | New Value |
| TH3E226(1)035(2)     | TH3E226(1)035(2)0500                   | 22          | 35      | 0.50       | E            | 7343-43     |           |
| TH3C105(1)050(2)     | TH3C105(1)050(2)3300                   | 1.0         | 50      | 3.30       | C            | 6032-28     |           |
| TH3D475(1)050(2)     | TH3D475(1)050(2)0900                   | 4.7         | 50      | 0.90       | D            | 7343-31     |           |
| TH3D106(1)050(2)     | TH3D106(1)050(2)0800                   | 10          | 50      | 0.80       | D            | 7343-31     |           |
| TH3E106(1)050(2)     | TH3E106(1)050(2)0500                   | 10          | 50      | 0.50       | E            | 7343-43     |           |

(1) Capacitance Tolerance: K = 10%; M = 20%

(2) Termination and Packaging: C = 7" reel, matte tin terminations; D = 13" reel, matte tin terminations