

Quantic™ Evans



THS3 Series Hybrid Capacitors Product Datasheet

08.03.2022

Product Overview

The THS3 series capacitors utilize sintered tantalum anodes and ruthenium oxide coated cathodes operating in aqueous electrolyte with additives. The components are hermetically sealed in a welded tantalum case with a glass-to-metal anode terminal seal.

The THS3 series capacitors come in a 1.4" x 1.4" square.

Electrical Specifications

| | |
|---------------------|-----------------------------|
| Rated Voltage Range | 10VDC to 125VDC |
| Capacitance Range | 4,200uF to 200,000uF |
| Life (@85°C) | >2000 hours @ Rated Voltage |

Mechanical Specifications

| Test | Method | Condition | Remarks |
|---------------------|------------------------|--------------|-----------------------------|
| Shock | MIL-STD-202 METHOD 213 | G | 11 mS, 50g |
| Vibration | MIL-STD-202 METHOD 204 | D | 12 Sweeps/Axis, 20g peak |
| | MIL-STD-202 METHOD 214 | II, Letter D | 1.5 hours/axis, 19.64g peak |
| Moisture Resistance | MIL-STD-202 METHOD 106 | | 6V Polarity |

| | |
|-----------------------------|--|
| Solderability | To ANSI J-STD-002 |
| Operating Temperature Range | -55°C to +85°C or 125°C with voltage derating (see page 3) |
| Storage Temperature Range | -62°C to +130°C |

Thermal Dissipation

In free air, THS3 series capacitors exhibit a case temperature rise of approximately 20°C per watt dissipated.

Capacitor Life

THS3 series capacitors are rated for >2,000 hours at 85°C and rated voltage or 125°C at de-rated voltage. The effective life of a capacitor in a given application is based on the specific operating voltage and average temperature.

THS3 series capacitors have an unlimited Shelf life.

Environmental Compliance

All THS3 series capacitor ratings are RoHS 9/10 compliant to EU RoHS Directive 2011/65/EU.

- Negative terminal is 60/40 SnPb plated copper wire
- Positive Terminal is 60/40 SnPb plated Nickel Tube

Export Classification

THS series capacitors are **ECCN EAR99**

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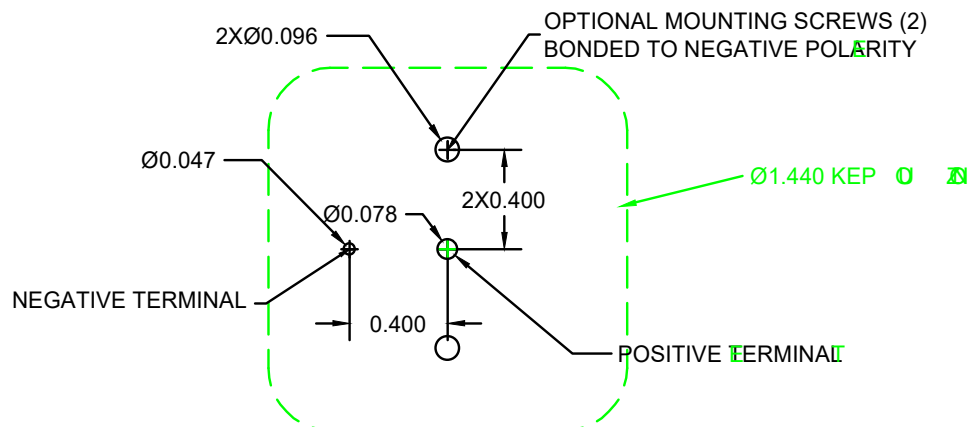
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Handling Guidelines

Attachment / Mounting by leads only is discouraged in applications exposed to mechanical shock or vibration. Always ensure capacitor is firmly secured to PWB, by either mounting studs, epoxy staking or both (preferred for vibration environments)

- Provide adequate care to protect the glass to metal seal (GTMS)
 - Avoid forces on the positive terminal, lateral, axial or torque.
 - Avoid mechanical shock to the positive terminal.
 - Secure the part to PWB before soldering
- Mounting with studs
 - #2-56 CDA-752 studs are available as a standard option.
 - Use spacers (provided) to fill the gap between PWB and leaded surface of capacitor.
 - Tighten Studs to 30-40 in-oz.
 - Secure nuts (provided) with red Loctite. Do not use lock washers.
- Potting / Epoxy Staking
 - We advise epoxy staking capacitor to PWB even when using studs, for maximum vibration tolerance.
 - In some applications it may be advisable to pot the cavity between the PWB and leaded surface.
 - Highest shock/vibration applications may require the capacitor to be fully potted.
- Soldering
 - Rim of capacitor is intended to mate directly to PWB. Advise using "no-clean" flux.
 - Utilize ANSI J-STD 001 Standard Through hole Soldering methods.
- Lead trimming
 - Provide adequate care if leads must be trimmed.
 - Trimming the positive terminal is not recommended.
 - Lead lengths available in 1/32" increments from 0.125" when measured from the rim of the capacitor.

Recommended PWB Layout with Minimum PTH Diameters



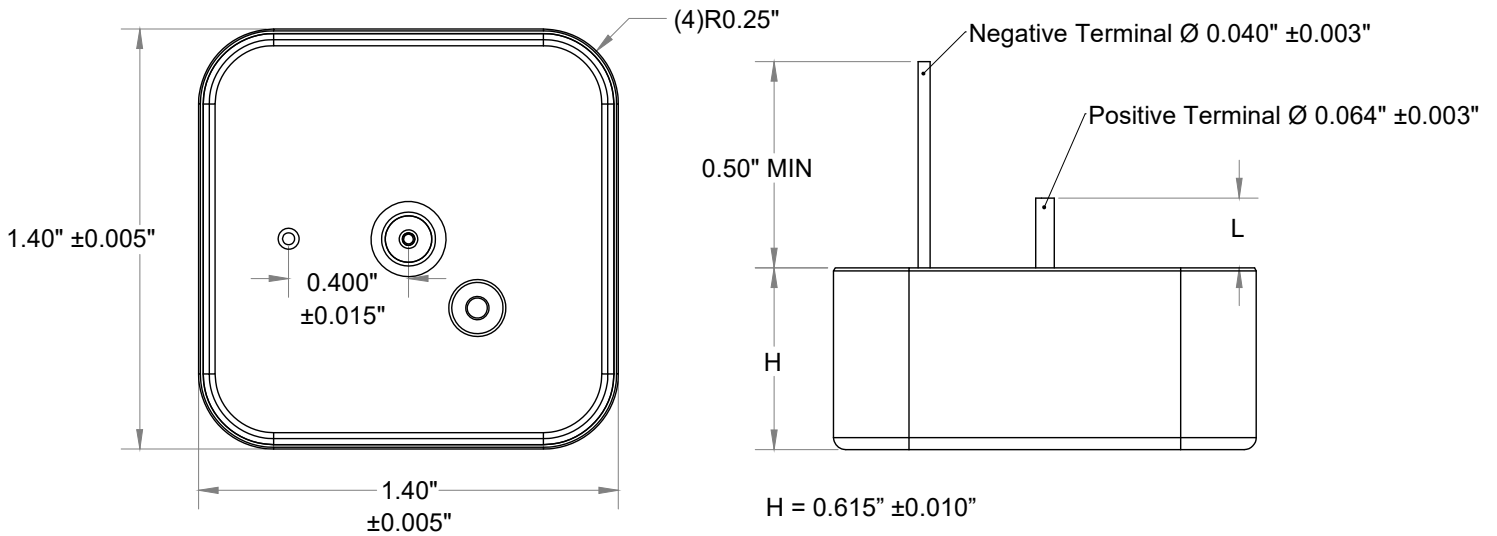
Part Number Description

| <i>Product Series</i> | <i>Voltage Rating</i> | <i>Cap Rating</i> | <i>Option: Custom Center Lead</i> | <i>Option: ±10% Rating</i> | <i>Option: Stud Mount</i> |
|-----------------------|-----------------------|-------------------|---------------------------------------|--------------------------------|-------------------------------|
| THS3 | XXX | XXX | LX | K# | SMXX |

Ratings Table

| Part Number | DLA PN | Voltage_85°C | Voltage_125°C | Cap (µF) | ESR (mΩ) | Height (in) | Mass (g) |
|--------------------|---------------|---------------------|----------------------|-----------------|-----------------|--------------------|-----------------|
| THS3010204 | 09021-01 | 10 | 6 | 200,000 | 25 | 0.615 | 104 |
| THS3016124 | 09021-02 | 16 | 9.5 | 130,000 | 25 | 0.615 | 104 |
| THS3025753 | 09021-03 | 25 | 15 | 75,000 | 35 | 0.615 | 104 |
| THS3035503 | 09021-04 | 35 | 20 | 50,000 | 35 | 0.615 | 104 |
| THS3050303 | 09021-05 | 50 | 30 | 30,000 | 35 | 0.615 | 104 |
| THS3063143 | 09021-06 | 63 | 38 | 14,000 | 35 | 0.615 | 128 |
| THS3080103 | 09021-07 | 80 | 48 | 10,000 | 40 | 0.615 | 128 |
| THS3085902 | 09021-08 | 85 | 51 | 9,000 | 50 | 0.615 | 128 |
| THS3100702 | 09021-09 | 100 | 60 | 7,000 | 50 | 0.615 | 128 |
| THS3110602 | 09021-10 | 110 | 65 | 6,000 | 65 | 0.615 | 128 |
| THS3125422 | 09021-11 | 125 | 75 | 4,200 | 65 | 0.615 | 128 |

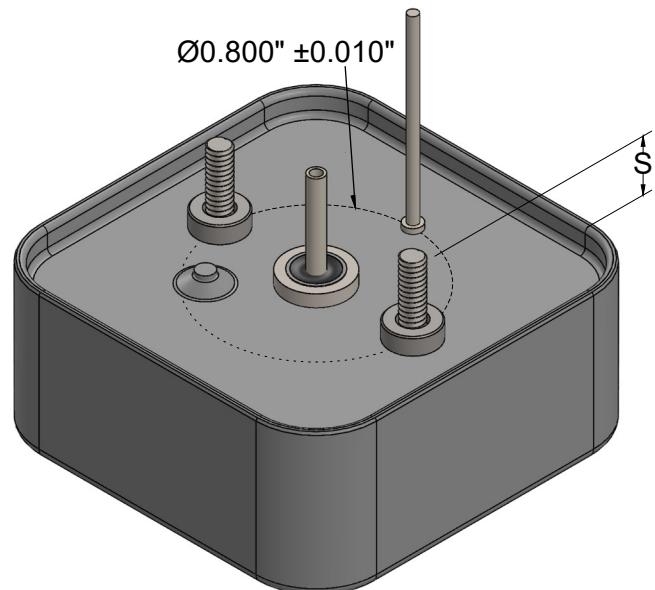
2D Drawing



| | L0 | L1 | L2 | L3 | Standard | L4 | L5 | L6 |
|-------------|----------|----------|----------|----------|----------|----------|----------|----------|
| Length L(x) | 2.0347"± | 2.0378"± | 2.0388"± | 2.0433"± | 2.0452"± | 2.0472"± | 2.0483"± | 2.0535"± |

*If unspecified, standard center lead length is 0.230+/-0.030"

L(x) dimensions are +/-0.010"



STUD MOUNT OPTION

CDA752 #2-56

EXAMPLE: TDDXXXXXXSM00

| SUFFIX | SM00 | SM01 | SM02 | SM03 | SM04 | SM05 |
|-------------------------------|-------|-------|-------|-------|-------|-------|
| Stud Height (S) +/- 0.020" | 0.21" | 0.27" | 0.40" | 0.15" | 0.18" | 0.35" |