

# Quantic™ Evans



## CDD Series Hybrid Capacitors Product Datasheet

08.03.2022

## Product Overview

The capacitor shall utilize sintered tantalum anodes and ruthenium oxide coated cathodes operating in aqueous electrolyte. The components shall be hermetically sealed in a welded tantalum case with a glass-to-metal seal.

The CDD Series comes in a 1.4" x 1.4" square case and has the highest power density of any tantalum capacitor technology.

## Electrical Specifications

Rated Voltage Range	8VDC to 100VDC
Capacitance Range	1,500uF to 240,000uF
Life (@105°C)	>2000 hours @ Rated Voltage

## Mechanical Specifications

Test	Method	Condition	Remarks
Shock	MIL-STD-202 METHOD 213	G	Tested for 11ms at 50g
Vibration	MIL-STD-202 METHOD 204	D	12 sweeps/axis, 20g peak
	MIL-STD-202 METHOD 214	II, Letter E	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 +105°C or 125°C with voltage derating (see page 3)
Storage Temperature Range	-62°C to +130°C

## Thermal Dissipation

In free air, CDD SERIES exhibit a case temperature rise of approximately 20°C per watt dissipated.

## Capacitor Life

CDD Series capacitors are rated for >2,000 hours at 105°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.

CDD Series Capacitors have an unlimited Shelf life.

## Environmental Compliance

All CDD ratings are RoHS 5/6 compliant to EU RoHS Directive 2011/65/EU.

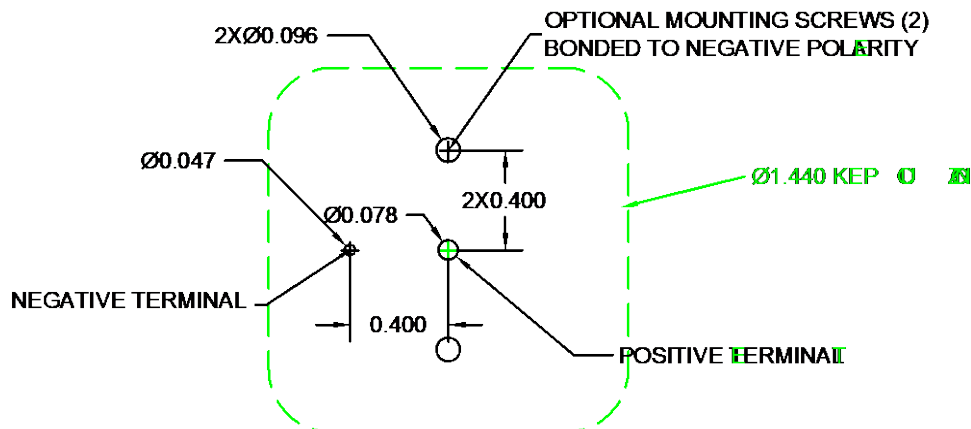
- Negative terminal is 60/40 SnPb plated copper wire
- Positive Terminal is 60/40 SnPb plated Nickel Tube

## 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



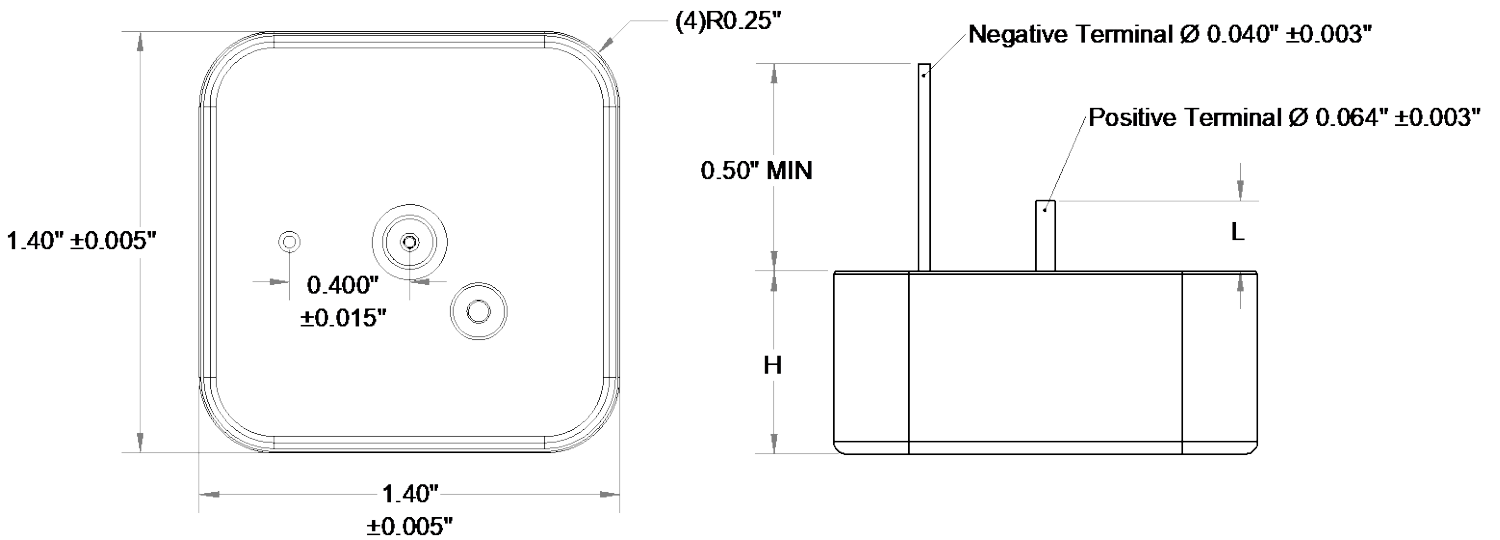
**Part Number Description**

<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>
CDD#	XXX	XXX	LX	K	SMXX

**Ratings Table**

<b>Part Number</b>	<b>Voltage_105°C</b>	<b>Voltage_125°C</b>	<b>Cap (µF)</b>	<b>ESR (mΩ)</b>	<b>Height (in)</b>	<b>Mass (g)</b>
CDD1008603	8	6	60,000	30	0.312	55
CDD2008124	8	6	120,000	20	0.45	80
CDD3008184	8	6	180,000	15	0.6	108
CDD4008244	8	6	240,000	12	0.755	134
CDD5008304	8	6	300,000	10	0.905	160
CDD1012403	12.8	9.6	40,000	30	0.312	55
CDD2012803	12.8	9.6	80,000	20	0.45	80
CDD3012124	12.8	9.6	120,000	15	0.6	108
CDD4012164	12.8	9.6	160,000	12	0.755	134
CDD5012204	12.8	9.6	200,000	10	0.905	160
CDD1020243	20	15	24,000	30	0.312	55
CDD2020483	20	15	48,000	20	0.45	80
CDD3020723	20	15	72,000	15	0.6	108
CDD4020963	20	15	96,000	12	0.755	134
CDD5020124	20	15	120,000	10	0.905	160
CDD1028163	28	21	16,000	40	0.312	55
CDD2028323	28	21	32,000	20	0.45	80
CDD3028483	28	21	48,000	15	0.6	108
CDD4028643	28	21	64,000	12	0.755	134
CDD5028803	28	21	80,000	10	0.905	160
CDD1040113	40	30	11,000	50	0.312	55
CDD2040223	40	30	22,000	25	0.45	80
CDD3040333	40	30	33,000	17	0.6	108
CDD4040443	40	30	44,000	15	0.755	134
CDD5040553	40	30	55,000	12	0.905	160
CDD1050472	50	38	4,700	50	0.312	60
CDD2050942	50	38	9,400	25	0.45	86
CDD3050143	50	38	14,000	17	0.6	115
CDD4050183	50	38	18,000	15	0.755	145
CDD5050223	50	38	22,700	12	0.905	170
CDD1064302	64	48	3,000	55	0.312	60
CDD2064602	64	48	6,000	27	0.45	86
CDD3064902	64	48	9,000	18	0.6	115
CDD4064123	64	48	12,000	15	0.755	145
CDD5064153	64	48	15,000	12	0.905	170
CDD1080222	80	60	2,200	65	0.312	60
CDD2080442	80	60	4,400	30	0.45	86
CDD3080662	80	60	6,600	20	0.6	115
CDD4080882	80	60	8,800	15	0.755	145
CDD50800113	80	60	11,000	12	0.905	170
CDD1088202	88	66	2,000	85	0.312	60
CDD2088402	88	66	4,000	40	0.45	86
CDD3088602	88	66	6,000	27	0.6	115
CDD4088802	88	66	8,000	20	0.755	150
CDD5088103	88	66	10,000	15	0.905	175
CDD1100152	100	75	1,500	100	0.312	60
CDD2100302	100	75	3,000	50	0.45	90
CDD3100452	100	75	4,500	35	0.6	122
CDD4100602	100	75	6,000	25	0.755	155
CDD5100752	100	75	75,000	15	0.905	1800

## 2D Drawing

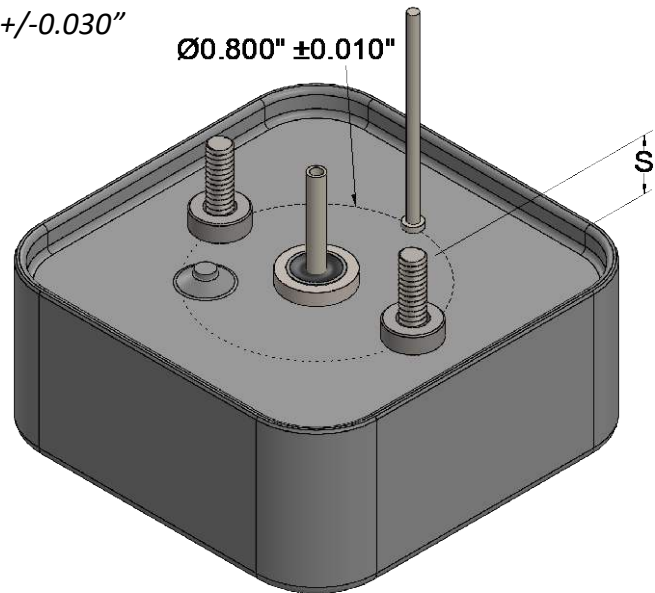


	CDD1	CDD2	CDD3	CDD4
Case Height (H)	0.312"	0.450"	0.600"	0.755"

	L0	L1	L2	L3	Standard	L4	L5	L6
Length L(x)	0.125"	0.156"	0.188"	0.219"	*0.230"	0.250"	0.281"	0.313"

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

L(x) dimensions are +/-0.010"



### STUD MOUNT OPTION

CDA752 #2-56

EXAMPLE: CDDXXXXXXSM00

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