

# Quantic™ Evans



## CHQ Series Hybrid Capacitors Product Datasheet

08.03.2022

## Product Overview

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

CHQ series capacitors comes in a 1.4” round case. They are available in 5 heights ranging from 0.312” to 0.765”.

## Electrical Specifications

Rated Voltage Range	10VDC to 100VDC
Capacitance Range	1,100uF to 200,000uF
Life (@85°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, CHQ Series exhibit a case temperature rise of approximately 20°C per watt dissipated.

## Capacitor Life

CHQ 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

CHQ Series Capacitors have an unlimited Shelf life.

## RoHS

CHQ Series are RoHS 9/10 compliant to EU RoHS Directive 2015/863

- 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.

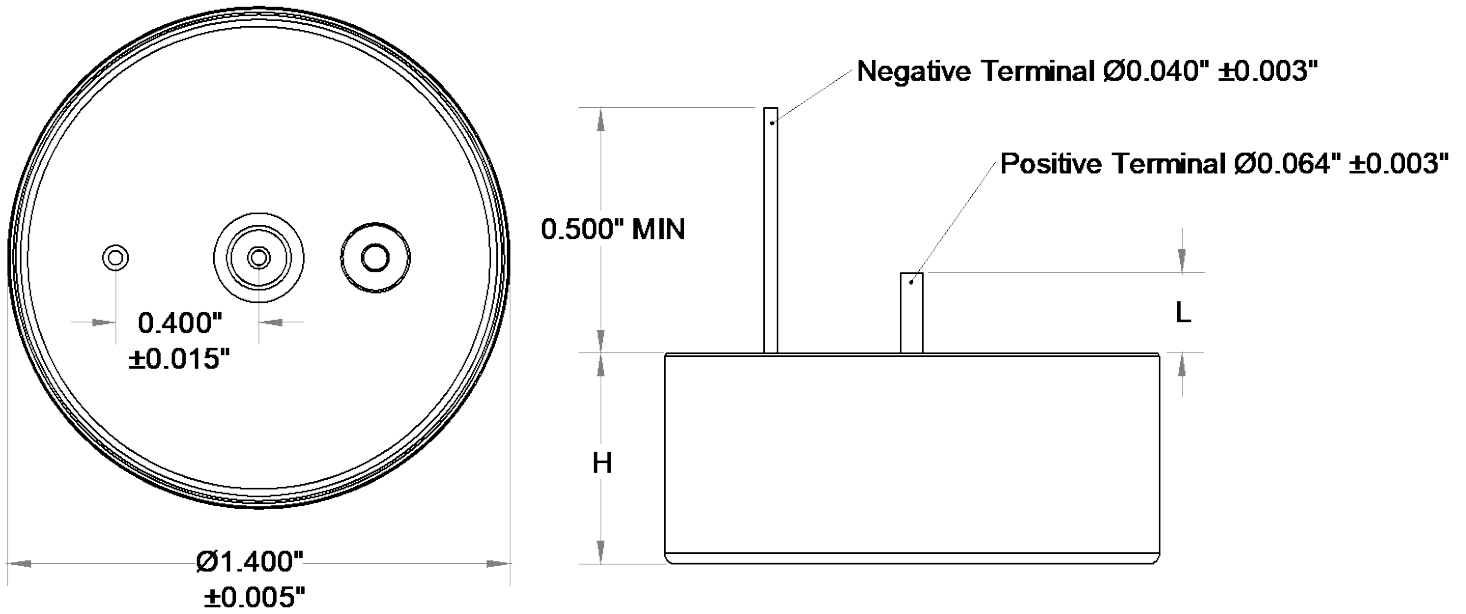
## Part Number Description

Product Series	Voltage Rating	Cap Rating	Option: Custom Center Lead	Option: ±10% Rating	Option: Stud Mount
CHQ#	XXX	XXX	LX	K	SMXX

## Ratings Table

Part Number	Voltage_105°C	Voltage_125°C	Cap (µF)	ESR (mΩ)	Height (in)	Mass (g)
CHQ1008503	8	6	50000	50	0.312	44
CHQ2008104	8	6	100000	37	0.46	65
CHQ3008154	8	6	150000	25	0.608	84
CHQ4008204	8	6	200000	25	0.725	103
CHQ5008204	8	6	200000	12	0.76	106
CHQ1012303	12	9.6	30000	50	0.312	44
CHQ2012603	12	9.6	60000	37	0.46	65
CHQ3012903	12	9.6	90000	25	0.608	84
CHQ4012124	12	9.6	120000	25	0.725	103
CHQ5012124	12	9.6	120000	15	0.76	106
CHQ1020183	20	15	18000	50	0.312	44
CHQ2020363	20	15	36000	50	0.46	65
CHQ3020543	20	15	54000	35	0.608	84
CHQ4020703	20	15	70000	25	0.725	103
CHQ5020703	20	15	70000	15	0.76	106
CHQ1028123	28	21	12000	50	0.312	44
CHQ2028243	28	21	24000	50	0.46	65
CHQ3028363	28	21	36000	35	0.608	84
CHQ4028503	28	21	50000	25	0.725	103
CHQ5028503	28	21	50000	15	0.76	106
CHQ1040802	40	30	8000	60	0.312	44
CHQ2040163	40	30	16000	60	0.46	65
CHQ3040243	40	30	24000	35	0.608	84
CHQ4040323	40	30	32000	25	0.725	103
CHQ5040323	40	30	32000	15	0.76	106
CHQ1050402	50	38	4000	100	0.312	50
CHQ2050802	50	38	8000	70	0.46	78
CHQ3050123	50	38	12000	35	0.608	102
CHQ4050163	50	38	16000	35	0.725	128
CHQ5050163	50	38	16000	20	0.76	128
CHQ1064282	64	48	2800	100	0.312	50
CHQ2064562	64	48	5600	70	0.46	78
CHQ3064822	64	48	8200	40	0.608	102
CHQ4064113	64	48	11000	35	0.725	128
CHQ5064113	64	48	11000	25	0.76	128
CHQ1080192	80	60	1900	125	0.312	50
CHQ2080382	80	60	3800	70	0.46	78
CHQ3080572	80	60	5700	50	0.608	102
CHQ4080752	80	60	7500	35	0.725	128
CHQ5080752	80	60	7500	32	0.76	128
CHQ1088152	88	65	1500	200	0.312	50
CHQ2088302	88	65	3000	140	0.46	78
CHQ3088452	88	65	4500	75	0.608	102
CHQ4088602	88	65	6000	35	0.725	128
CHQ5088602	88	65	6000	32	0.76	128
CHQ1100112	100	75	1100	200	0.312	50
CHQ2100222	100	75	2200	140	0.46	78
CHQ3100332	100	75	3300	75	0.608	102
CHQ4100452	100	75	4500	50	0.725	128
CHQ5100452	100	75	4500	40	0.76	128

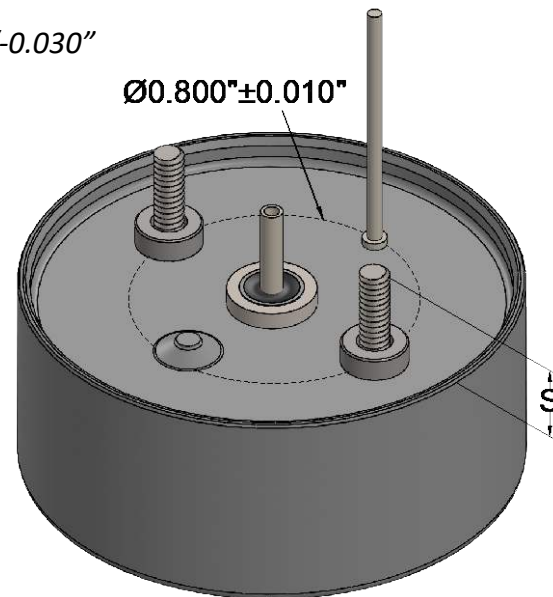
## 2D Drawing



	CHQ1	CHQ2	CHQ3	CHQ4	CHQ5
Case Height (H)	0.312"	0.460"	0.608"	0.725"	0.775"

	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  $0.230 \pm 0.030''$   
 L(x) dimensions are  $\pm 0.010''$



**STUD MOUNT OPTION**  
**CDA 752 # 2-56**  
**EXAMPLE: CHQXXXXXXSM00**

SUFFIX	SM00	SM01	SM02	SM03	SM04	SM05
HEIGHT (S)	0.22"	0.28"	0.41"	0.16"	0.19"	0.36"