

Modular MMC Tank Capacitors

DT-200 (TH/HD/UC)

Stackable capacitor modules for high frequency, high current resonators



Features and Specifications

- Compact & stackable for unlimited capacitance
- M3 screw connection & mounting holes
- High frequency & high current capable
- Integrated passive cooling with large surface area
- Quadruple 2oz copper layers
- Addon module for the CRO-SM3 induction heater
- Up to 200V DC

Typical Usage

The DT-200 range of modular tank capacitors are ideal for use in high current resonant systems such as **induction heaters** where small size and high frequency capability are critical. The TH model is for low-cost options, while the HD and HC versions are for space saving and high frequency applications.




DT-200-TH Low Cost MMC Tank Capacitor DT-200-TH	DT-200-HD High Density MMC Tank Capacitor DT-200-HD	DT-200-UC Ultra Compact MMC Tank Capacitor DT-200-UC
		
Stackable tank capacitors for compact resonant systems Only 50mm x 50mm x 18mm 330nF to 2.6µF per module. Unlimited parallel capacity.	Stackable tank capacitors for compact resonant systems Only 50mm x 50mm x 4.4mm (>1.7µF 7.2mm) 100nF to 3.4µF per module. Unlimited parallel capacity.	Stackable tank capacitors for compact resonant systems Only 50mm x 50mm x 2.7mm (>170nF 3.5mm) 10nF to 340nF per module. Unlimited parallel capacity.
Highest capacitance vs cost	Highest capacitance vs size	Smallest size
330nF to 2.6µF	100nF to 3.4µF	10nF to 340nF
Polypropylene dielectric	C0G / NP0 dielectric	C0G / NP0 dielectric
10kHz to 200kHz ¹	10kHz to 300kHz ¹	50kHz to 1000kHz ¹
Low cost and good all-round use	For highly compact systems	Great for high frequency use

Table 1: Comparison of DT-200 versions

¹ Frequency range is a guide only

Modular Design

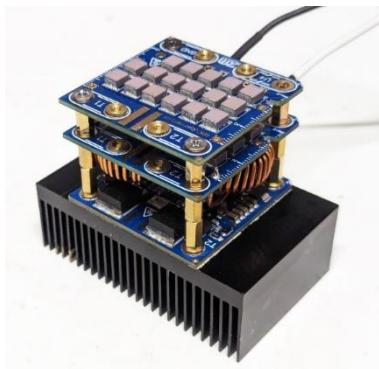


Figure 1: Stacked Modules Example

The DT-200 modules are designed for use with our CRO-SM3 induction heater module. These boards can be mounted to the CRO-SM3 module using standoffs with a spacing to suit your application. With a variety of capacitances available, it is simple to add or change the working capacitance and therefore the resonant frequency of an induction heating system. By simply adding or removing modules, the frequency can be reduced or increased accordingly.

Connections

Main power connections are made using the integrated M3 nuts so that they can be screwed to standard M3 standoffs and stacked together. There are also several solder points available for those wanting to fix chokes to the board. The chokes (shown in green) need to connect between the power supply and the T1/T2 connections. This can be done in a variety of ways. Some examples are shown below. The red lines represent the internal wiring of the PCB, while the green ones represent external connections for adding chokes.

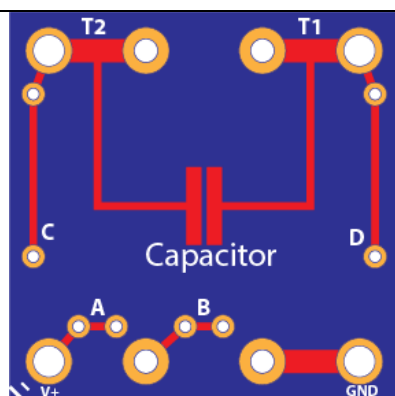


Figure 2: Wiring diagram

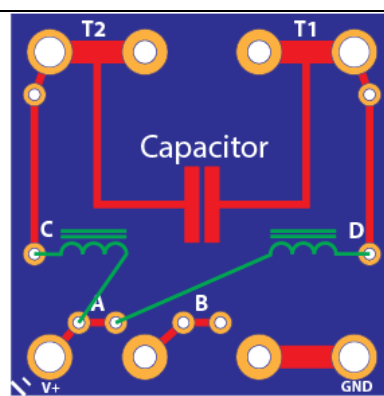


Figure 3: Single PSU choke connections

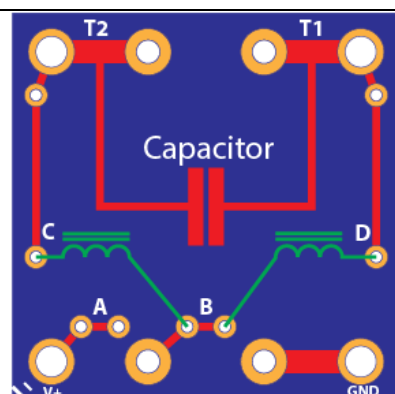


Figure 4: Dual PSU choke connections

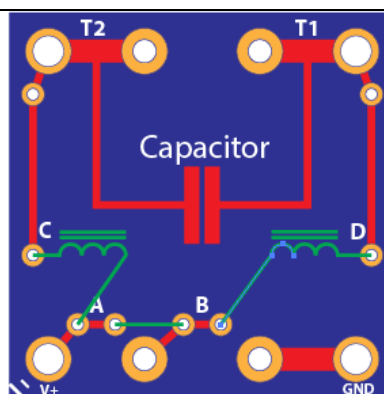


Figure 5: Alternative single PSU choke connections

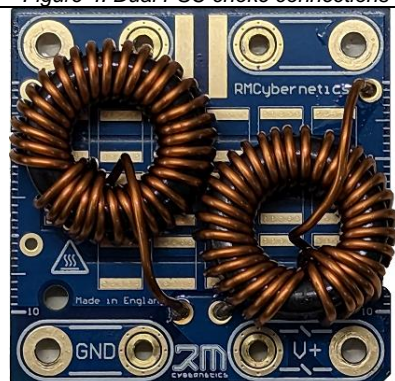


Figure 6: Example of chokes mounted to the back of DT-200 for dual PSU

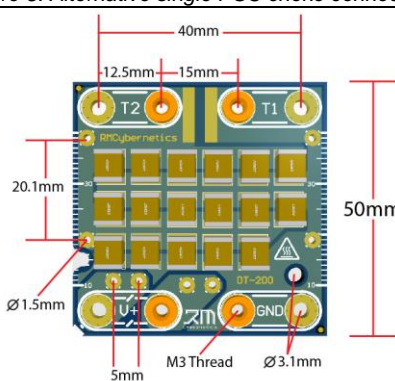


Figure 7: Hole & Layout Dimensions

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CHK-15A

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