Triton100-PSiC Motor Drive Datasheet

3L Power part number
PCS-M10C30

Description

The Triton100 Motor Drive is a three-phase motor drive optimized for high frequency switching operation (>100 kHz). It is a Silicon Carbide (SiC)-based semiconductor drive that parallels modules for operating currents up to 250 Arms, with motor shaft position feedback either through a resolver or incremental encoder. The Triton100 has a 3L Power drive-to-drive high speed isolated communications (DHSC) port to allow multiple drives to be synchronized for multiple motor operation on a common shaft or electrically paralleled.

Triton drives are used to drive PMSM motors and induction motors in a variety of different applications. Because of the Triton's relatively small package and high switching frequency, the Triton drives are particularly suited to high power motor operation where acoustic and electrical noise is a concern. The switching frequency of the Triton drive can be varied within a large band of possible switching frequencies to enable optimization of system acoustic and electrical noise.

The SiC-based architecture means that Triton drives operate very efficiently and do not require elaborate heat removal considerations. The drives are built upon a thick copper heat spreader that can be bolted to a ship's hull, an aluminum portion of large machinery, the motor associated with the drive, or a heatsink. 3L Power supplies optional water-cooled heatsinks that only require about 1 gal/minute flow.

For more detailed information, including pinout information and operational guides, see the Triton100 User Manual.

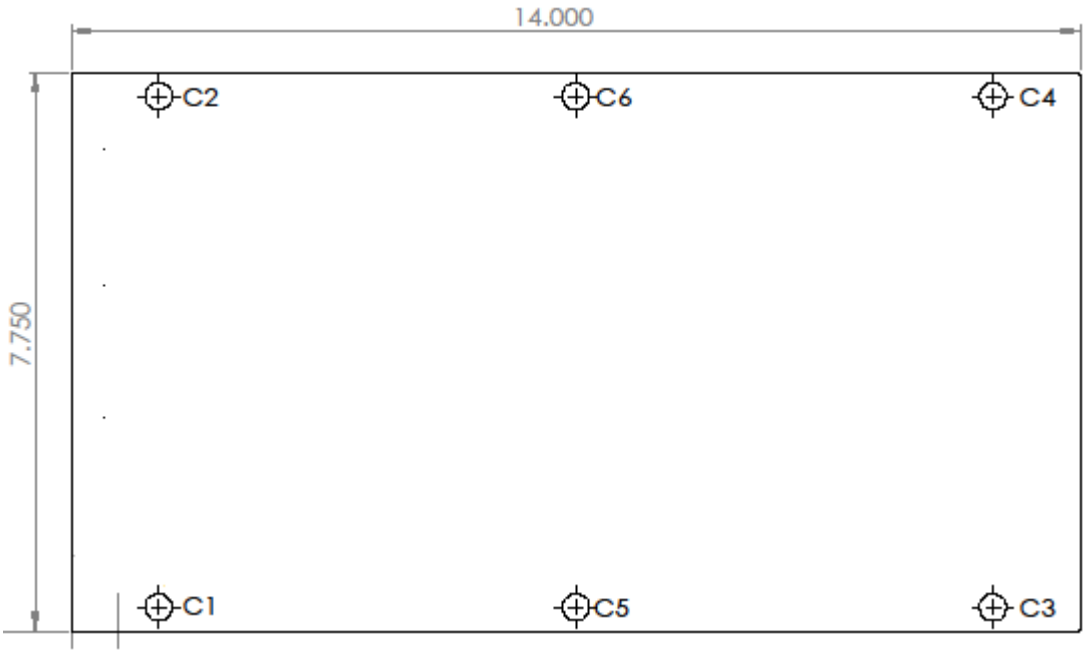
The Triton line of drives includes models with voltage ratings up to 900 Vdc. More information is available at www.3LPower.com.

Electrical

Power	100 kW
Switching Frequency	40 – 150 kHz
Voltage input	100 – 325 Vdc
Inst. Max voltage withstand	400 Vdc
Vrms out max	230 Vrms
Iout max	250 Arms
Control Power	24 Vdc nominal, 22-26V, 25W
Communications	Isolated CAN, isolated 3L DHSC, USB GUI
Position Feedback	Resolver, incremental encoder

Mechanical

Overall Length	17 Inches
Overall Width	7.75 Inches
Overall Height	5.875 Inches
Weight	25 Lbs
Cooling	Copper plate / water cooled
Copper plate temp at max power	45 °C
Copper plate thickness	0.375 Inches
Mounting hole pattern	6x 3/8” holes, 7” x 5.79” spacing (holes shown in drawing below)
Position Feedback	Resolver, incremental encoder



Environmental

Operating Environmental

Operating environmental temperature range: -40°C to 85°C (industrial) non-condensing (cold plate <45°C)

Operating shock limit: 25G