3-phase motor drive board using EPC23102 power stage

Optional DC Link Current sense

DC Link Voltage sense

15 Vmin. to 65 Vmax. limited by capacitors

High Voltage

5 V Supply

3V3 Supply

PWM Buffer & Disconnect

Temperature Sense

Bulk Capacitors

For evaluation only; not FCC approved for resale

Shaft encoder input

Quadrature with Index

Supports optical and hall

Motor Connection

Heat sink Kit

OCP fault

OCP disconnect

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Bi-Directional 80 V Current Sense Amplifier

Offset Voltage = 1.65 V

Gain 50V/V
Default = 5 V

Source Selection

Shaft encoder connection
Quadrature with Index
Supports optical and hall
Motor drive filter

Phase Current sense

\([-33A \rightarrow +33A]\) scales to \([0V \rightarrow 3.3V]\) with gain 50x

Kelvin connections are placed on SHNT2
Use SHNT2 for single-shunt configuration

Phase Voltage sense

\(112.9V\) scale to \(3.3V\)
Temperature sense using AD590 with separate GND

-55C scale to 1.7V
25C scale to 2.3V
150C scale to 3.3V

R40 7.87k
R41 0.1uF, 25V
C40
C41 0.1uF, 25V

U40 AD590JCPZ-R5

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80 V to 5 V Housekeeping Power Supply

UVLO Settings:
- 8 V on, 1.73 V hysteresis

5 V 300 mA max.

Power indicator

9 V min. to 80 V max.
Over-Current Protection

Title: AP1025 Rev. 2.0

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Basic 4 screw heatsink kit

SC1 M2 Screw
SC2 M2 Screw
SC3 M2 Screw
SC4 M2 Screw

IP1
Land: A14692-30
Custom cut
Generic Isolation pad

TM1
Global Technology
TG-A1780-10-10-0.5
10x10mm_A1780_TIM

TM2
Global Technology
TG-A1780-10-10-0.5
10x10mm_A1780_TIM

TM3
Custom cut

S1 Standoff M2 9774010243R
S2 Standoff M2 9774010243R
S3 Standoff M2 9774010243R
S4 Standoff M2 9774010243R

H heatsink K it
5 V to 3.3 V LDO power supply

Power indicator