Bi-Directional Over Current Detection

**Title**: Bi-Directional Over Current Detection

**Size**: 3V3

**Date**: 25-May-22

**File**: AP1034_Rev1_2_OverCurrentProtection.SCHDOC

**Revision**: 1.2

**Sheet of**: A

---

0.45 V threshold for +50A (including spikes)

2.85 V threshold for ±50A (including spikes)

rail to rail common mode comparator

rail to rail common mode comparator

in case of multiple repetition of this scheme, mount only one pull up resistor and capacitor

---

**© Copyright EPC 2022**
Temperature sense using AD590 with separate AGND

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

Do not mount the zener diode
Shaft encoder connection

Quadrature with Index

Supports optical and hall

Quadrature Encoder Interface without 5V regulator
Bi-Directional Leg Current Sense Amplifier

Offset Voltage = 1.65 V
Gain 20 V/V

© Copyright EPC 2021

Efficient Power Conversion

www.epc-co.com

El Segundo, CA 90245
909 N. Pacific Coast Hwy, Ste. 230

Efficient Power Conversion
4010 Cabot Way, Unit 1
San Diego, CA 92121
United States

www.epc-co.com
Bi-Directional 80 V Current Sense Amplifier

IN240A1PWR Gain 20V/V
Offset Voltage = 1.65 V
Phase Shunt and phase voltage sense

113.3 V scale to 3.3V

© Copyright EPC 2022
80 V to 5 V Housekeeping Power Supply

UVLO Settings:
- Vin min. to 80 V max.
- 8 V on, 1.73 V hysteresis
- fs: 402 kHz

Power indicator

© Copyright EPC 2021
3V3 500 mA max.

Power indicator

5V to 3.3V

© Copyright EPC 2021
5 V to 3.3 V LDO power supply
Efficient Power Conversion
909 N. Pacific Coast Hwy, Ste. 230

2.7mE Upper FET HB driver IC with UVLO & ESDs. EPC23101
UL EPC23101

DC Input
80 Vmax.