Voltage Monitor
Circuit Configuration

Design Note 014
Flex Power Modules
In some applications it is necessary to monitor the output voltages and shut down all converters if any of these fails. The enclosed example shows how to monitor two outputs. Increasing the number of monitored outputs is simply done by adding an optocoupler for each additional output in series with the base of Q1. R5 and C1 in the circuit diagram are used to set a time constant delaying the voltage monitoring during start-up. The values used in the example provide approximately 60 ms delay. Consult the converter’s datasheet to determine the required delay for your application. The circuit is latching and requires that the input voltage be toggled off-on to restart the converters.

Component Values

- R1: 1.8 kΩ
- R2: 3.6 kΩ
- R3: 1 MΩ
- R4: 510 kΩ
- R5: 1 MΩ
- R6: 12 ohm
- C1: 4.7 µF
- D1, D2: BAS 70
- Q1, Q2: MMBTA 42L
Formed in the late seventies, Flex Power Modules is a division of Flex that primarily designs and manufactures isolated DC/DC converters and non-isolated voltage regulators such as point-of-load units ranging in output power from 1 W to 700 W. The products are aimed at (but not limited to) the new generation of ICT (information and communication technology) equipment where systems' architects are designing boards for optimized control and reduced power consumption.