Using the LTM2881 as an Isolated 5V Power Supply
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2500V_{RMS} Isolated 5V 1W Power With No External Components

The LTM®2881 is an isolated RS485 transceiver that guards against large ground-to-ground differentials. An onboard DC/DC converter provides isolated 5V power to the output. Figure 1 shows the LTM2881 configured as a dedicated isolated power supply with the RS485 transceiver disabled, providing a simple powerful general purpose isolated power supply capable of delivering 1W at 5V. Figure 2 shows a logically-controlled switched output by taking advantage of the isolated RS485 driver to control a discrete PMOSFET. The controlling signal DI operates relative to the V_L supply, which supports voltages from 1.62V to 5.5V. In both configurations, observation of a V_{CC2} fault is accomplished by observing a high impedance condition on RO or D_OUT. When V_{CC2} is greater than 2.6V, RO and D_OUT are driven to the appropriate logic level based on the inputs A and B and DIN. When V_{CC2} is less than 2.4V, RO and D_OUT are high impedance.

Features:
- 5V (LTM2881-5) or 3.3V (LTM2881-3) Input Supply Voltage
- 5V DC Output Delivers 200mA at 62% Efficiency with a 5V Input (LTM2881-5) or 120mA at 52% Efficiency with a 3.3V Input (LTM2881-3)
- Zero Current (Typical) Shutdown Mode When ON Pin is Low.
- Overcurrent and Overtemperature Protection
- No External Components Required. Decoupling Capacitors are Integrated.
- Small Package: 15mm × 11.25mm × 2.8mm

Figure 1. LTM2881 Configured as a Dedicated Isolated 5V Power Supply

Figure 2. Switched 5V Power with Isolated CMOS Logic Connection to V_L Voltage Interface
Typical Performance Characteristics

$T_A = 25^\circ\text{C}$, LTM2881-3 $V_{CC} = 3.3\text{V}$, LTM2881-5 $V_{CC} = 5\text{V}$, $V_L = 3.3\text{V}$, GND = GND2 = 0V, ON = $V_L$ unless otherwise noted.

- **VCC Supply Current vs Temperature at IOUT = 100mA on VCC2**
- **IOUT Current vs Temperature; RS485 Disabled: DE = TE = 0, VCC2 = 4.75V**
- **VCC2 Output Voltage vs IOUT Load Current**
- **VCC2 Power Efficiency**
- **VCC2 Load Step (100mA)**
- **VCC2 Noise**