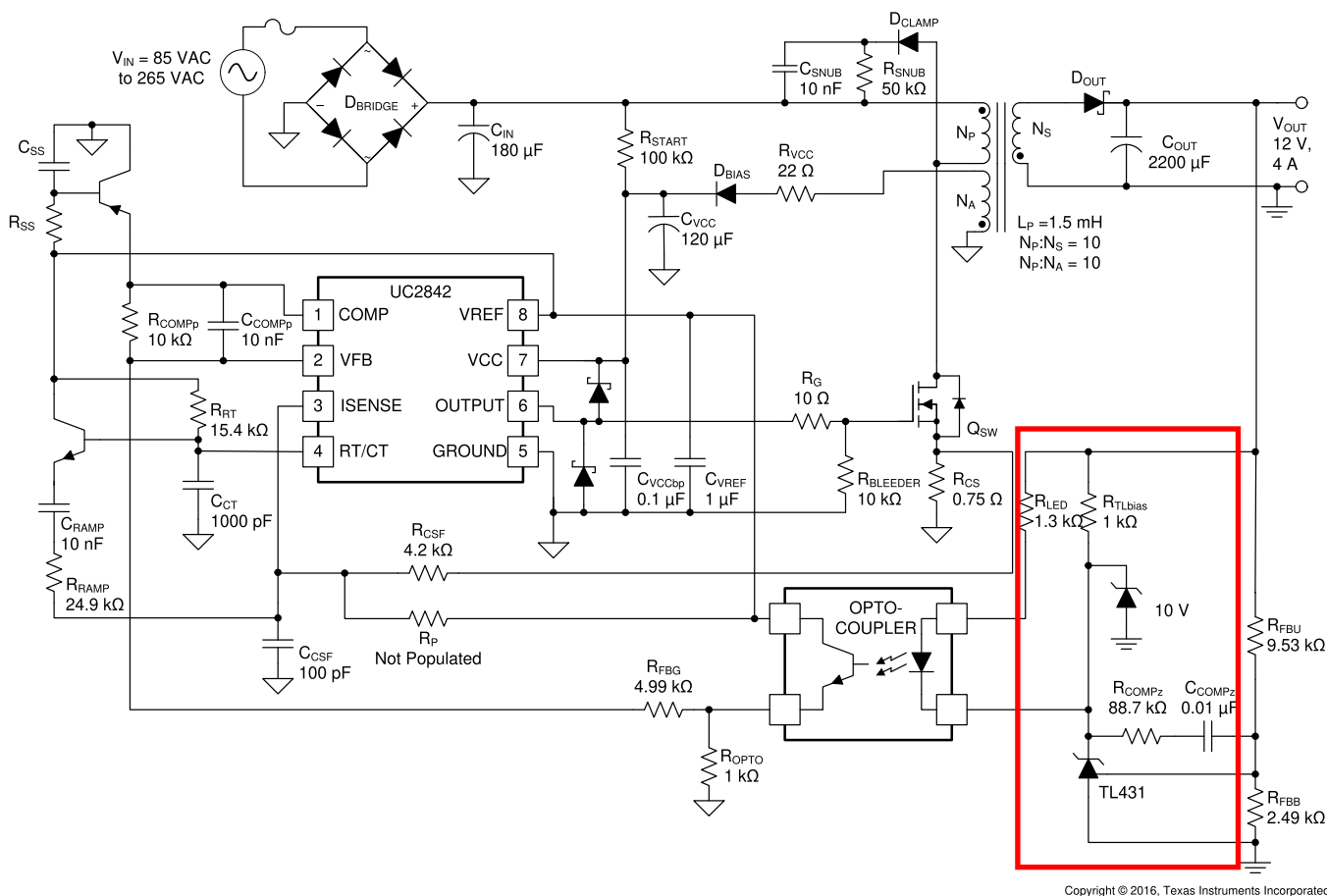


### Typical Application (continued)

at the input of an error amplifier. When used in an off-line isolated application, the voltage feedback of the isolated output is accomplished using a secondary-side error amplifier and adjustable voltage reference, such as the TL431. The error signal crosses the primary to secondary isolation boundary using an opto-isolator whose collector is connected to the VREF pin and the emitter is connected to VFB. The outer voltage control loop determines the response to load changes.



**Figure 25. Typical Application Design Example Schematic**

### 9.2.1 Design Requirements

Table 1 illustrates a typical set of performance requirements for an off-line flyback converter capable of providing 48 W at 12-V output voltage from a universal AC input. The design uses peak primary current control in a continuous current mode PWM converter.

### Table 1. Performance Requirements

PARAMETER		TEST CONDITIONS	MIN	NOM	MAX	UNIT
V <sub>IN</sub>	Input Voltage		85	115/230	265	V <sub>RMS</sub>
f <sub>LINE</sub>	Line Frequency		47	50/60	63	Hz
V <sub>OUT</sub>	Output Voltage	I <sub>OUT(min)</sub> ≤ I <sub>OUT</sub> ≤ I <sub>OUT(max)</sub>	11.75	12	12.25	V
V <sub>RIPPLE</sub>	Output Ripple Voltage	I <sub>OUT(min)</sub> ≤ I <sub>OUT</sub> ≤ I <sub>OUT(max)</sub>			100	mVpp
I <sub>OUT</sub>	Output Current		0	4		A
f <sub>SW</sub>	Switching Frequency			100		kHz
η	Efficiency			85%		