

123456

A

B

C


D


Sheet: DCDC

File: DCDC.sch

Sheet: LDO

File: LDO.sch

HS1
Heatsink



Sheet: /

File: Bipolar_Supply_LT3045_LT3094.sch

Title: Experimental Ultra Low Noise Supply LT1533-based

Size: A4

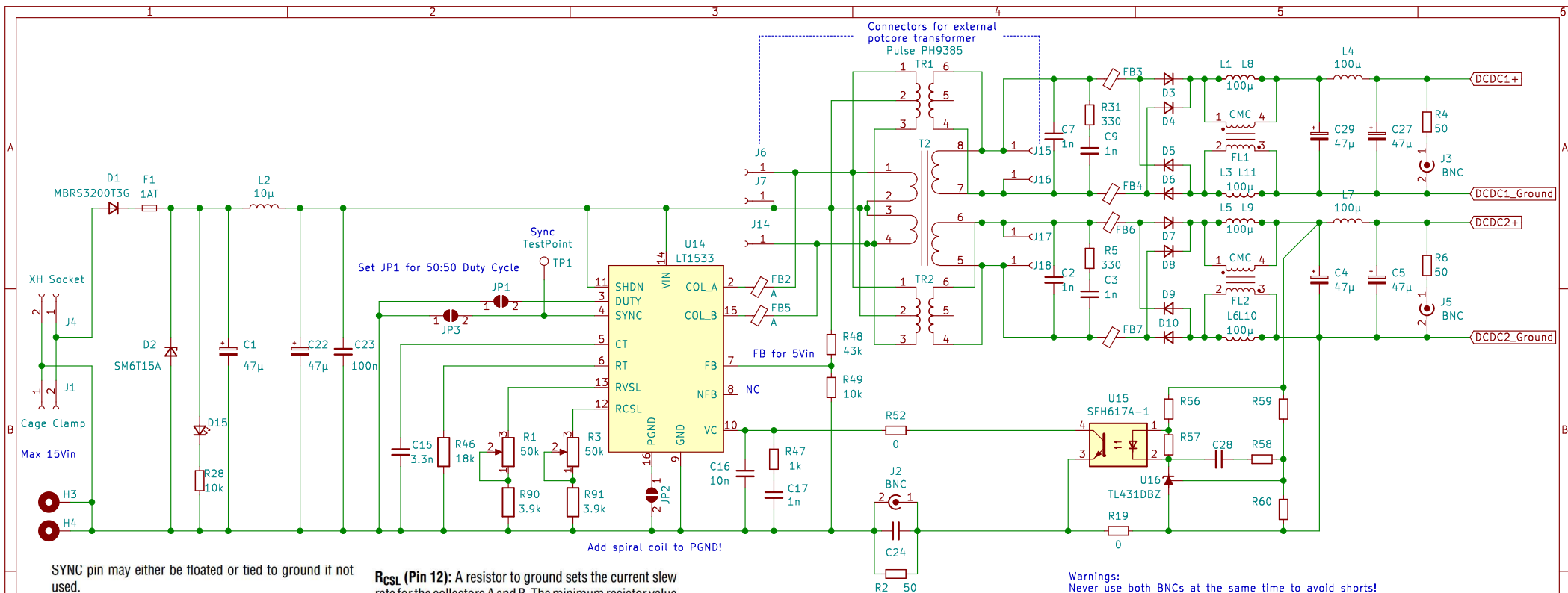
Date: 2021-11-21

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Id: 1/3

6



SYNC pin may either be floated or tied to ground if not used.

CT (Pin 5): The oscillator capacitor pin is used in conjunction with R_T to set the oscillator frequency. For $R_T = 16.9k$,

$$C_{T(NF)} = 129/f_{OSC}(kHz)$$

RT (Pin 6): The oscillator resistor pin is used to set the charge and discharge currents of the oscillator capacitor. The nominal value is 16.9k. It is possible to adjust this resistance $\pm 25\%$ to get a more accurate oscillator frequency.

RCSL (Pin 12): A resistor to ground sets the current slew rate for the collectors A and B. The minimum resistor value is 3.9k and the maximum value is 68k. Current slew will be approximately:

$$I_{SLEW}(A/\mu s) = 33/R_{CSL}(k\Omega)$$

RVSL (Pin 13): A resistor to ground sets the voltage slew rate for the collectors A and B. The minimum resistor value is 3.9k and the maximum value is 68k. Voltage slew will be approximately:

$$V_{SLEW}(V/\mu s) = 220/R_{VSL}(k\Omega)$$

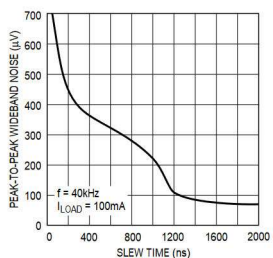


Figure 21. Figure 5's Noise vs Slew Time at 40kHz Switching Frequency. Noise Reduction Beyond 1.3µs Is Minimal

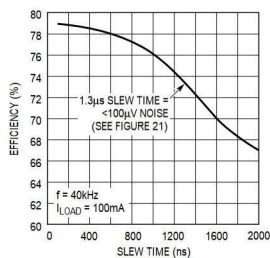


Figure 22. Figure 5's Efficiency Drops 6% as Slew Time Extends to 1.3µs. Operation Beyond This Point Gains Little Noise Performance (See Previous Curve) with 6% Efficiency Penalty

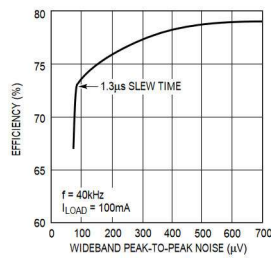


Figure 23. Efficiency vs Noise for Figure 5. Data Shows Significant Efficiency Fall-Off for Noise Below 80µV

H1
MountingHole_Pad

H2
MountingHole_Pad

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