

NCS5651MNSGEVB

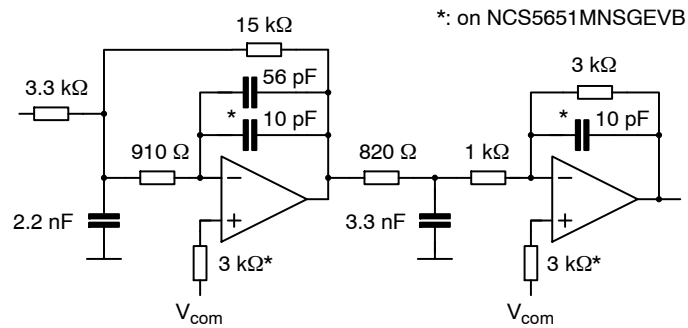


Figure 2. Recommended Transmission Filter for PLC with PL110 Carrier Frequencies

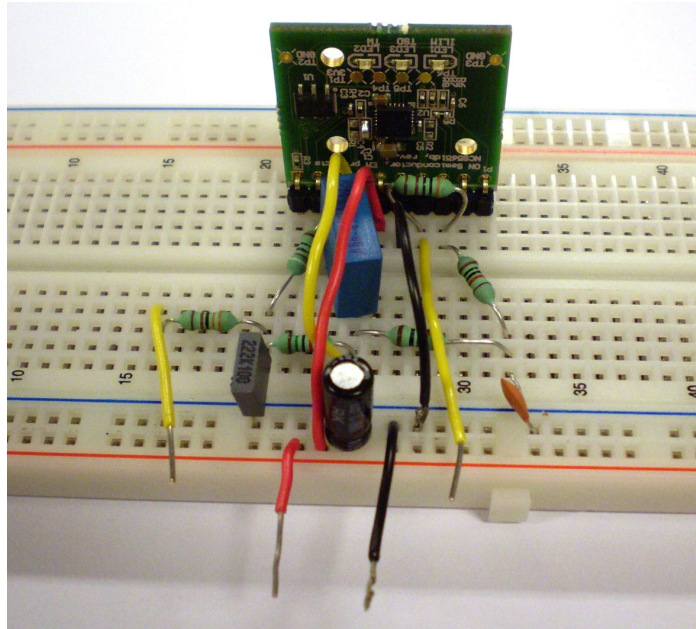


Figure 3. The Schematic of Figure 2 Built on Breadboard with an NCS5651MNSGEVB

Application Ideas

The size and header of the evaluation board make it perfectly suited for breadboarding. For instance, Figure 2 shows the recommended transmission filter for PLC S-FSK* with the PL110 carrier frequencies (105 and 115 kHz). This schematic is easily realized on breadboard (Figure 3).

Some applications require a lower copper-to-ambient thermal resistance (R_{CuA}) to improve line driver cooling. The board design makes it possible to fit a heat sink on the bottom side: solder mask openings and mounting holes are foreseen.

The heat sink can be mounted with thermally conducting adhesive tape (Figure 4). For more information on cooling, refer to [1, 4].

Fischer Elektronik ICK SMD B 19 SA is recommended. It may be obtained through Farnell (ref. 4302266) or Newark (ref. 34M6437).

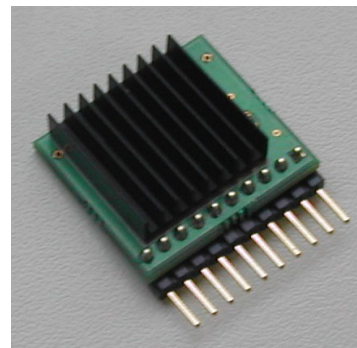


Figure 4. Adding a Heat Sink to Improve Cooling

*Spread-frequency shift keying (S-FSK) is a modulation scheme widely used in power line communication (PLC). It combines simplicity (and thus allows a low cost implementation) with good resilience.

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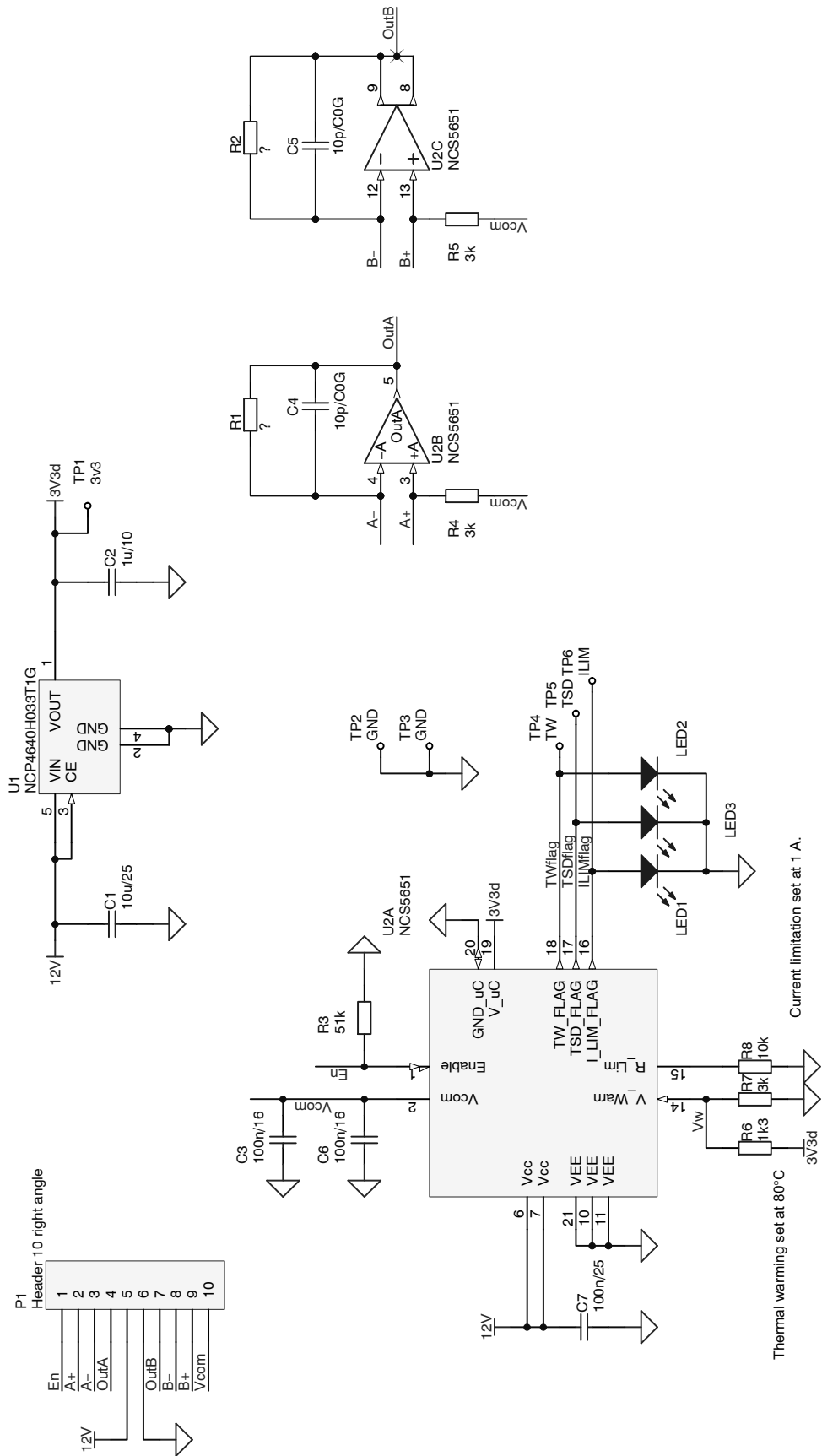


Figure 5. NCS5651MNSGEVB Schematic

NCS5651MNSGEVB

References

- [1] ON Semiconductor. Evaluation kit for power-line communication user manual, December 2014.
- [2] ON Semiconductor. Getting started with power line communication (application note AND9165/D), June 2014. Online at www.onsemi.com/pub_link/Collateral/AND9165-D.PDF.
- [3] ON Semiconductor. NCS5651 2 Amp PLC line driver datasheet, December 2014. Online at www.onsemi.com/pub_link/Collateral/NCS5651-D.PDF.
- [4] ON Semiconductor, Roger Stout. Thermal considerations for the NCS5651 (application note AND8402/D), August 2014. Online at www.onsemi.com/pub_link/Collateral/AND8402-D.PDF.

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