

NIS5420 Evaluation Board User's Manual

EVBUM2760/D

Instructions

- Remove all jumpers from the headers if there are any in place
- Connect an ohmmeter across the Rlim measurement test points and set it to 20 Ω with a small screwdriver
- Connect a DC supply from Vin to GND and apply 12 V
- Check that Vout = 12 V, Ven ~ 4.5 V and the green LEDs are on
- Connect oscilloscope voltage probes to Vin (Ch1), Vout (Ch2), and EN (Ch4). For Ch3 connect a current probe from the power supply to Vin

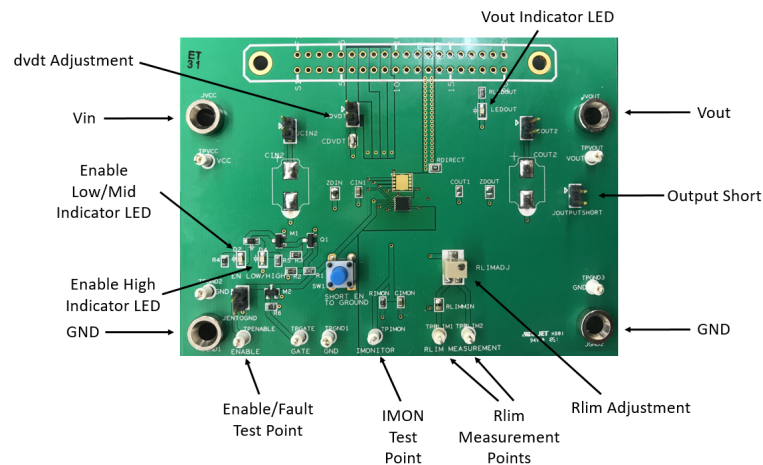


Figure 2. Features of the Evaluation Board



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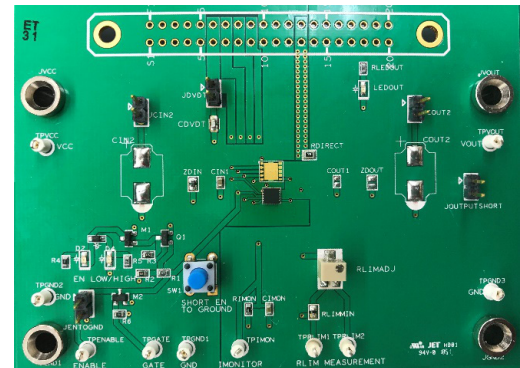


Figure 1. The Evaluation Board

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EVALUATION BOARD SCHEMATIC

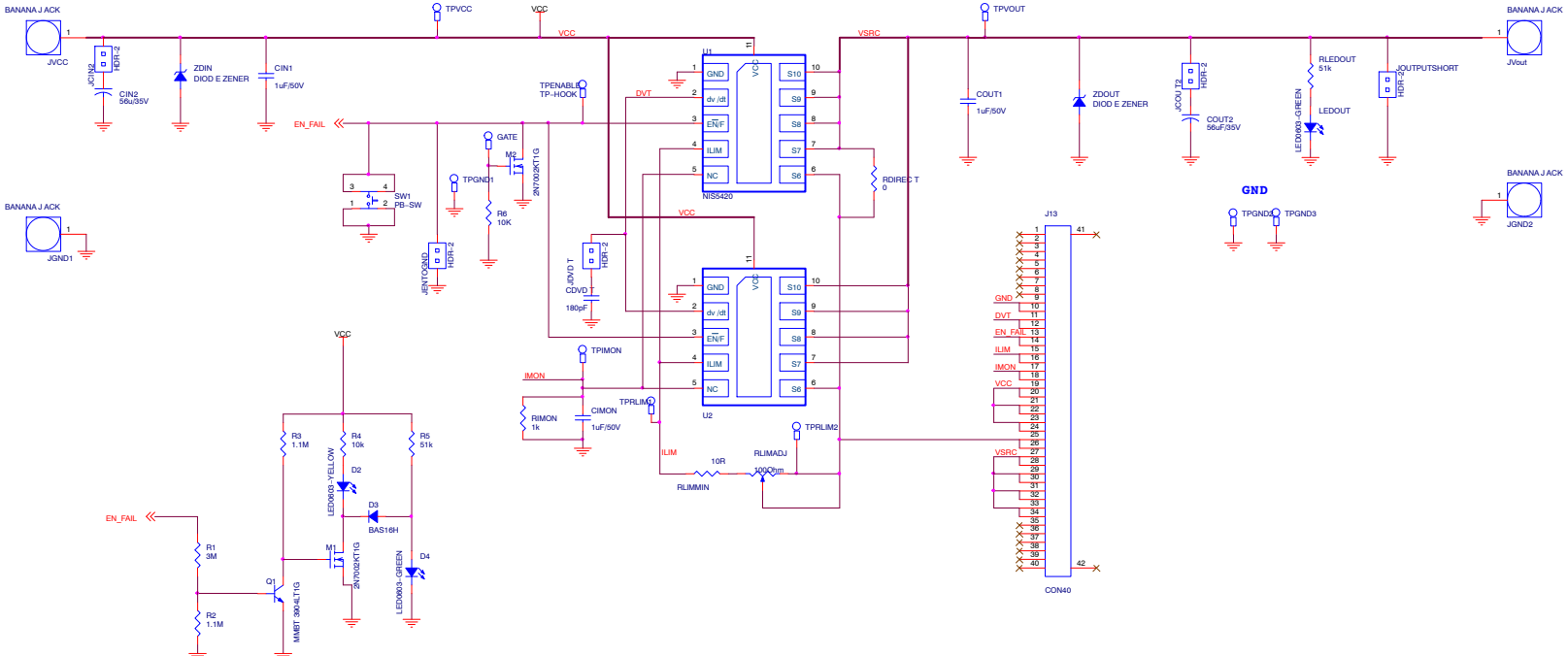


Figure 10. The NIS5420 Evaluation Board Schematic

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BILL OF MATERIALS

Table 1. BILL OF MATERIALS

| Item | Qty | Reference | Part | Digikey Part Number | Manufacturer | Manufacturer Part Number | DNP |
|------|-----|---------------------------------------------------------------------------------|-----------------|---------------------|---------------------------------|--------------------------|-----|
| 1 | 1 | CDVDT | 180 pF | 311-3890-1-ND | Yageo | CC0603FRNPO9BN181 | |
| 2 | 3 | CIMON, COUT1, CIN | 1 μ F/50 V | 587-2400-1-ND | Taiyo Yuden | UMK107BJ105KA-T | |
| 3 | 0 | COUT2, CIN2 | 56 μ F/35 V | 493-4385-1-ND | Nichicon | PCV1V560MCL1GS | DNP |
| 4 | 1 | D2 | LED0603-YELLOW | 160-1448-1-ND | Lite-On Inc | LTST-C191KSKT | |
| 5 | 1 | D3 | BAS16H | BAS16HT1GOSCT-ND | ON Semiconductor | BAS16HT1G | |
| 6 | 2 | D4, LEDOUT | LED0603-GREEN | 160-1888-1-ND | Lite-On Inc | LTST-C191TGKT | |
| 7 | 0 | J13 | CON40 | S3314-ND | Sullins Connector Solutions | EBC20DRTH | DNP |
| 8 | 5 | JCOUT2, JCIN2, JOUTPUTSHORT, JENTOGND, JDVDT | HDR-2 | 3M9447-ND | 3M | 961102-6404-AR | |
| 9 | 4 | JGND1, JGND2, JVout, JVCC | BANANA JACK | 36-575-8-ND | Keystone Electronics | 575-8 | |
| 10 | 2 | M1, M2 | 2N7002KT1G | 2N7002KT1GOSCT-ND | ON Semiconductor | 2N7002KT1G | |
| 11 | 1 | Q1 | MMBT3904LT1G | MMBT3904LT1GOSCT-ND | ON Semiconductor | MMBT3904LT1G | |
| 12 | 1 | R1 | 3 M Ω | P3.0MGCT-ND | Panasonic Electronic Components | ERJ-3GEYJ305V | |
| 13 | 2 | R2, R3 | 1.1 M Ω | P1.1MGCT-ND | Panasonic Electronic Components | ERJ-3GEYJ115V | |
| 14 | 2 | R4, R6 | 10 k Ω | P10KGCT-ND | Panasonic Electronic Components | ERJ-3GEYJ103V | |
| 15 | 2 | R5, RLEDOUT | 51 k Ω | P51KGCT-ND | Panasonic Electronic Components | ERJ-3GEYJ513V | |
| 16 | 1 | RDIRECT | 0 Ω | P0.0ACT-ND | Panasonic Electronic Components | ERJ-6GEY0R00V | |
| 17 | 1 | RIMON | 1 k Ω | P1.0KDBTR-ND | Panasonic Electronic Components | ERA-3AEB102V | |
| 18 | 1 | RLIMADJ | 100 Ω | 3214X-1-101ECT-ND | Bourns Inc. | 3214X-1-101E | |
| 19 | 1 | RLIMMIN | 10 Ω | 311-10.0HRCT-ND | Yageo | RC0603FR-0710RL | |
| 20 | 1 | SW1 | PB-SW | EG4369-ND | E-Switch | TL1105FF160Q | |
| 21 | 10 | TPRLIM1, TPGND1, TPRLIM2, TPGND2, TPGND3, TPVOUT, TPVCC, TPIMON, TPENABLE, GATE | TP-HOOK | 36-5002-ND | Keystone Electronics | 5002 | |
| 22 | 1 | U1 | NIS5420MTx | | ON Semiconductor | | |
| 23 | 0 | U2 | | | | | DNP |
| 24 | 1 | ZDIN | 33 Vz | MM5Z33VT1GOSTR-ND | ON Semiconductor | MM5Z33VT1G | |
| 25 | 0 | ZDOUT | 33 Vz | MM5Z33VT1GOSTR-ND | ON Semiconductor | MM5Z33VT1G | DNP |

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