

MUN12AD03-SEC EVB Guide

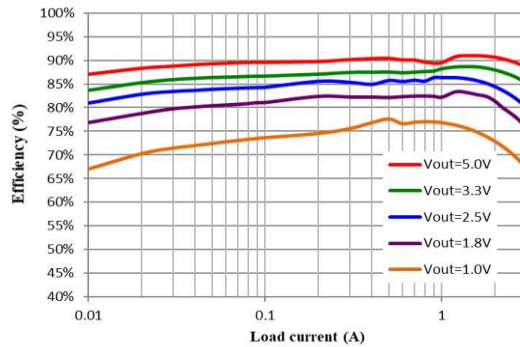
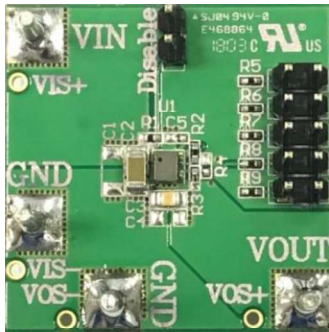
DESCRIPTION:

The evaluation board is for the MUN12AD03-SEC, high efficiency DC/DC power module. The evaluation board is generates a +5.0V output voltage at load currents up to 3A. The output voltage can be programmed by the dividing resistor (R_{FB_T} and R_{FB_B}). The MUN12AD03-SEC switches at 1MHz and achieve up to 91% efficiency with the supplied components.

ELECTRICAL SPECIFICATION:

| Parameters | Symbol | Value | Unit |
|---------------------|--------|---------|------|
| Input Voltage Range | VIN | 4.5~17 | V |
| Output Voltage | VOUT | 1.0~5.0 | V |
| Output Current | IOUT | 3 | A |

EVALUATION BOARD & EFFICIENCY::



QUICK START:

The module has an internal $0.8V \pm 1.5\%$ reference voltage. The output voltage can be programmed by the dividing resistor (R_{FB_T} and R_{FB_B}). The output voltage can be calculated by Equation 1, resistor choice may be referred to TABLE 1.

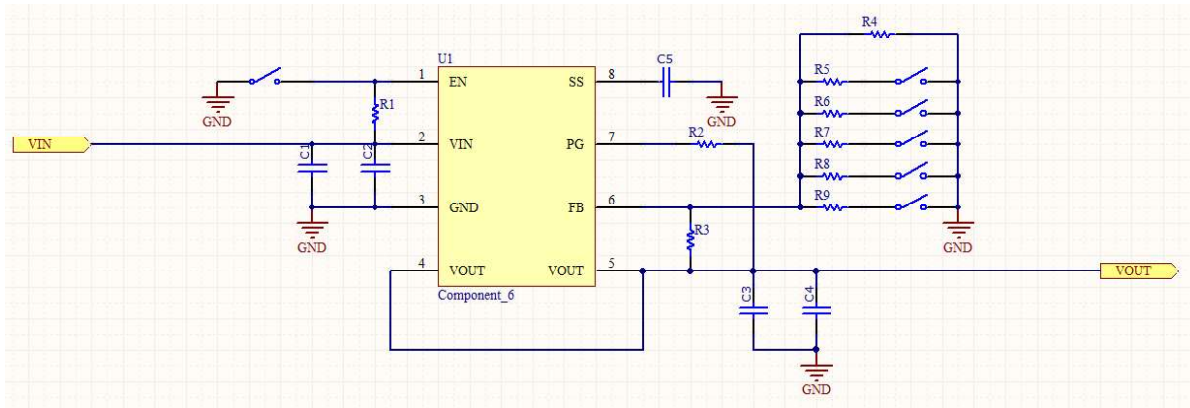
$$VOUT(V) = 0.8 \times \left(1 + \frac{R_{FB_T}}{R_{FB_B}}\right) \quad (EQ.1)$$

TABLE 1 Resistor values for common output voltages

| VOUT | 1.0V | 1.2V | 1.5V | 1.8V | 3.3V | 5.0V |
|-------------------|------|------|------|------|-------|-------|
| R_{FB_T} (Ohm) | 124k | 124k | 124k | 124k | 124k | 124k |
| R_{FB_B} (Ohm) | 499k | 243k | 140k | 100k | 39.2k | 23.7k |

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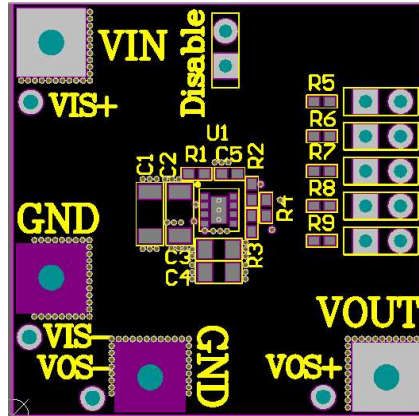
EVALUATION BOARD SCHEMATIC:



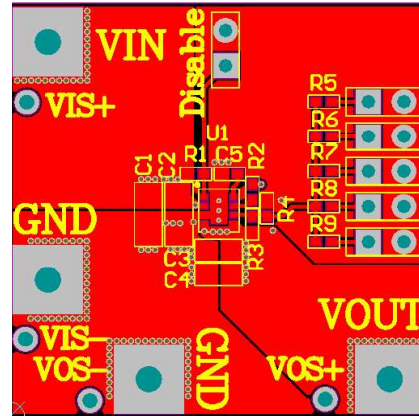
BILL OF MATERIALS:

| COUNT | REF DES | DESCRIPTION | PART NUMBER | MFR |
|-------|----------|-----------------------------|--------------------|--------|
| 1 | C2 | MLCC,10uF/25V 1206 X5R | TMK316BBJ226ML-T | Taiyo |
| 2 | C3,C4 | MLCC,22uF/10V 0805 X7R | GRM21BZ71A226ME15L | Murata |
| 0 | C1,C5 | DXP | | |
| 3 | R1,R2,R7 | Resistor,100k Ohm,±1%,0402 | Std | Cyntec |
| 1 | R3 | Resistor,124K Ohm,±1%,0402 | Std | Cyntec |
| 0 | R4 | DXP | | |
| 1 | R5 | Resistor,499k Ohm,±1%,0402 | Std | Cyntec |
| 1 | R6 | Resistor,243k Ohm,±1%,0402 | Std | Cyntec |
| 1 | R8 | Resistor,39.2k Ohm,±1%,0402 | Std | Cyntec |
| 1 | R9 | Resistor,23.7k Ohm,±1%,0402 | Std | Cyntec |
| 1 | U2 | Power module, 3.0*2.8*1.5mm | MUN12AD03-SEC | Cyntec |

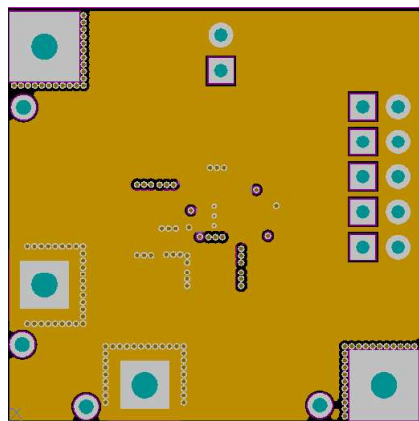
ORIENTED CIRCUIT BOARD LAYOUT:



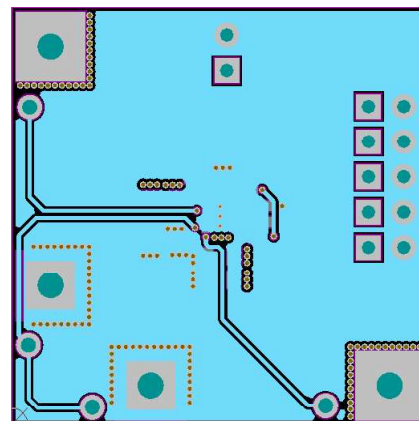
Top Component Side



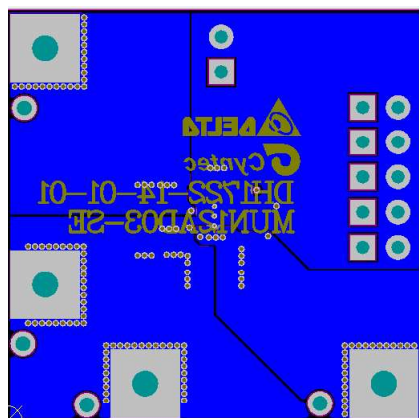
Top Layer



Mid1 Layer



Mid2 Layer



Bottom Layer

Mouser Electronics

Authorized Distributor

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