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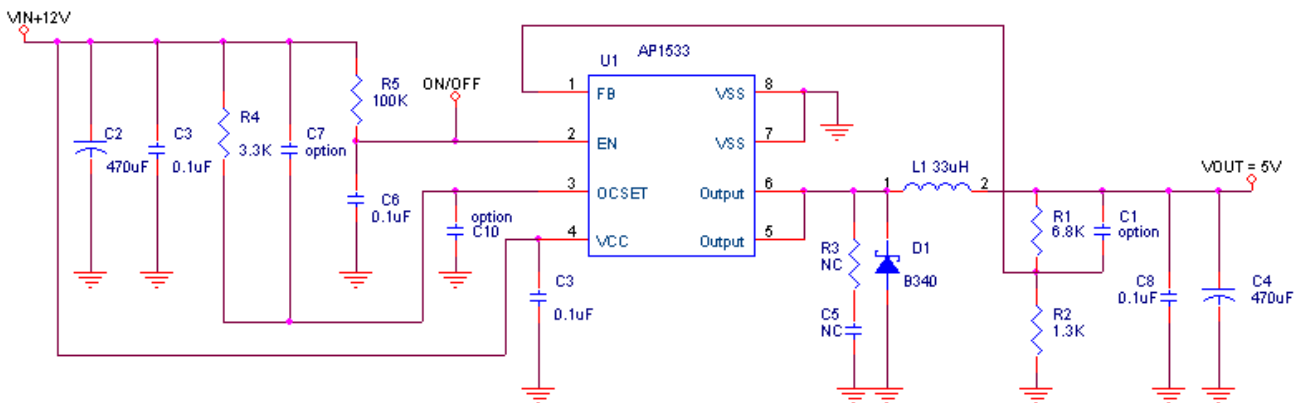
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Application Note
AP1533 Application Information and Demo Board User Guide

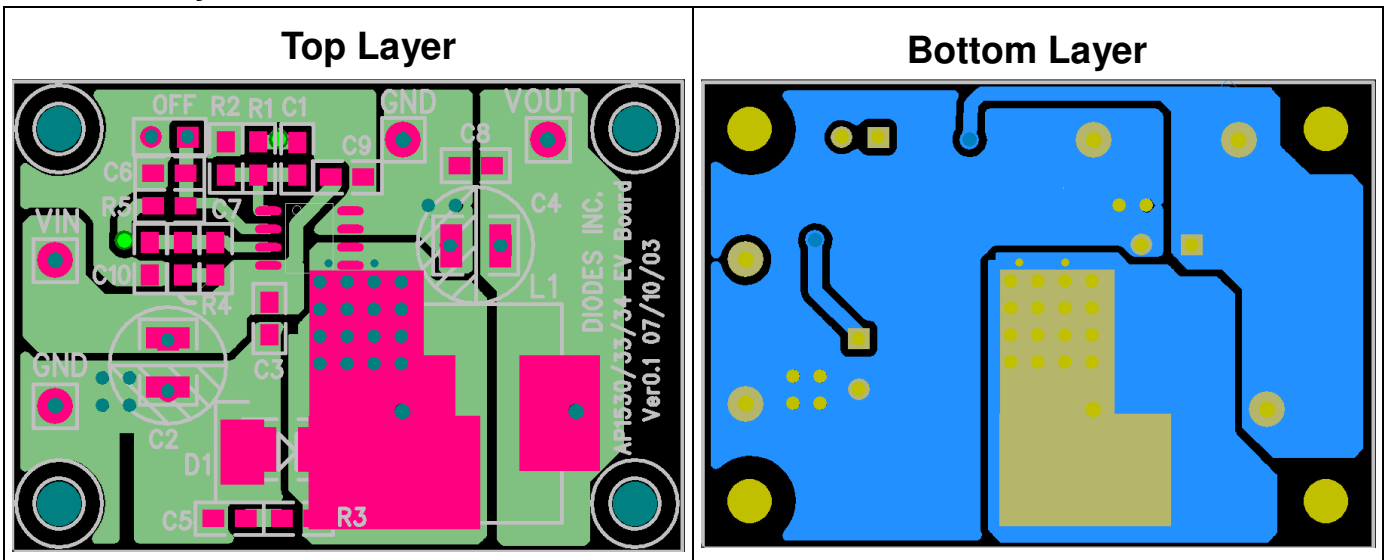
1. Description

AP1533 is step-down switching regulator with PWM control. AP1533 provides low-ripple power, high efficiency, and excellent transient characteristics.

2. EVM Schematic



3. Board Layout



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Application Note

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4. Bill of Materials

| Component Location | Q'ty | Value | Source | Part No. | Size |
|---------------------|------|-----------------------------|-------------------|-----------------|------------------|
| C2, C4 | 1 | Aluminum Cap 470uF/16V | TEAPO | | CAP8/3.5mm |
| C3,C6, C8 | 3 | Cap MLCC 0.1uF/50V/X5R | TAIYO YUDEN | UMK212BJ104KG-T | C0805 |
| C1, C5, C7, C9, C10 | 0 | NC | - | | C0805 |
| R1 | 1 | 6.8kΩ, 1% | YAGEO | RC0805FR-SK | R0805 |
| R2 | 1 | 1.3kΩ, 1% | YAGEO | RC0805FR-SK | R0805 |
| R3 | 0 | NC | - | - | - |
| R4 | 1 | 5.6kΩ, 1% | YAGEO | RC0805FR-SK | R0805 |
| R5 | 1 | 100kΩ, 1% | YAGEO | RC0805FR-SK | R0805 |
| U1 | 1 | 3A, PWM | Diodes Inc. | AP1533 | SOP-8L |
| L1 | 1 | 33uH/4.2A | Würth Electronics | 7447 series | 12*12*10mm |
| D1 | 1 | 3A/40V | Diodes Inc. | B340 | SMC |
| VIN, VOUT, GND | 4 | Header_1 | - | - | 2.2mmX 1.35mm |
| PCB | 1 | AP1530/33/34EV Board Ver0.1 | Diodes Inc. | TDB0009 | 1860milX 1300mil |

The recommended minimum R_{OCSET} value is summarized below :

| $V_{IN}(V)$ | $V_{OUT}(V)$ | $R_{OCSET}(\Omega)$ |
|-------------|--------------|---------------------|
| 4 | 0.8 | 3.9k |
| 5 | 3.3 | 3.3k |
| 12 | 5 | 3.3k |
| 18 | 12 | 3.3k |
| 23 | 12 | 4.7k |

5. Vendors of peripheral components

Suggested Capacitors for C2 and C4 :

| Vendor | Capacitance | Type | Series |
|--------|------------------------|------|--------|
| TEAPO | Aluminum Cap 470uF/16V | DIP | |

Suggested Capacitors for C3 - C6 and C8 :

| Vendor | Capacitance | Type | Series |
|-------------|------------------------|------|-----------------|
| TAIYO YUDEN | Cap MLCC 0.1uF/50V/X5R | SMD | UMK212BJ104KG-T |

Suggested Resistor :

| Vendor | Type | Series |
|--------|------|-------------|
| YAGEO | SMD | RC0805FR-SK |