Inverting Switching Regulator Controller BD9718G

The BD9718G is a high performance fixed frequency power switching regulator. This regulator was specifically designed to be incorporated for step-down and voltage inverting functions with a minimum number of external components.

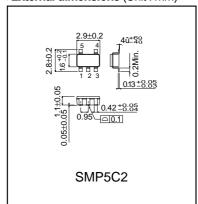
Applications

Pre-amplifier bias supply for hard disk drive (HDD), designs or other voltage inverter requirements.

Features

- 1) High-accuracy output voltage detection. (Vs= -5.00±1%)
- 2) High switching frequency (900kHz typ.)
- 3) Built-in soft start function. (No external components required.)
- 4) Timer latch type short protection function. (No external components required.)
- 5) Ultra small package: SMP5C2

●External dimensions (Unit : mm)



●Absolute maximum ratings (Ta = 25°C)

| Parameter | Symbol | Limits | Unit |
|-----------------------------|--------|-------------|------|
| Supply voltage | Vcc | 15 * | V |
| Power dissipation | Pd | 170 | mW |
| Operating temperature range | Topr | -40 to +85 | °C |
| Storage temperature range | Tstg | -55 to +125 | °C |

^{*} Derating : 1.7mW/°C for operation above Ta=25°C.

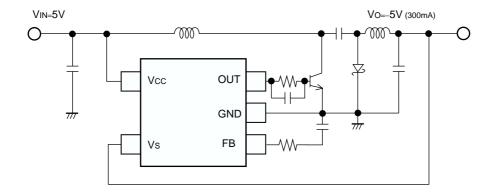
● Recommended operating conditions (Ta = 25°C)

| Parameter | Symbol | Min. | Тур. | Max. | Unit |
|----------------|--------|------|------|------|------|
| Supply voltage | Vcc | 4 | 5 | 14 | V |

●Electrical Characteristics (Unless otherwise noted, Ta=25°C, V_{CC}=5V)

| Parameter | Symbol | Min. | Тур. | Max. | Unit | Conditions |
|------------------------|--------|-------|---------|-------|------|------------------------|
| Bias current | Icc | _ | 4.6 | 8 | mA | V _{FB} =1V |
| Output sense voltage | Vs | -5.05 | -5.00 | -4.95 | V | V _{FB} =0.75V |
| Switching frequency | Fosc | 600 | 900 | 1200 | kHz | V _{FB} =0.75V |
| Maxim ON duty cycle | Don | 70 | 80 | 90 | % | V _{FB} =1.0V |
| Output SAT voltage 1 | Vsat1 | _ | 30 | 150 | mV | Іоит-=20mA, Vs=-5.5V |
| Output SAT voltage 2 | Vsat2 | Vcc-1 | Vcc-0.8 | 1 | V | Іоит+=20mA, Vs=-4.5V |
| UVLO threshold voltage | Vuт | 3.5 | 3.8 | 4.0 | V | Vcc: sweep up |

Application circuit



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