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# 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.

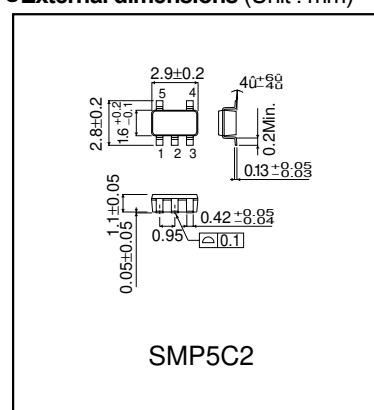
### ●Applications

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

### ●Features

- 1) High-accuracy output voltage detection. ( $V_s = -5.00 \pm 1\%$ )
- 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	V <sub>CC</sub>	15 *	V
Power dissipation	P <sub>d</sub>	170	mW
Operating temperature range	T <sub>opr</sub>	-40 to +85	°C
Storage temperature range	T <sub>stg</sub>	-55 to +125	°C

\* Derating : 1.7mW/°C for operation above Ta=25°C.

### ●Recommended operating conditions (Ta = 25°C)

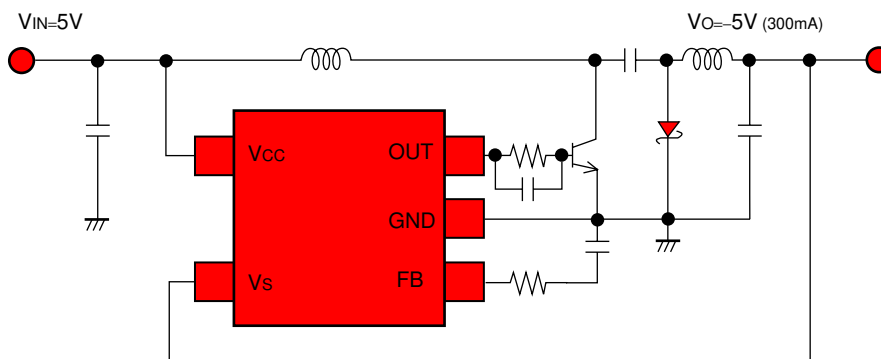
Parameter	Symbol	Min.	Typ.	Max.	Unit
Supply voltage	V <sub>CC</sub>	4	5	14	V

## Regulators

●Electrical Characteristics (Unless otherwise noted,  $T_a=25^\circ\text{C}$ ,  $V_{CC}=5\text{V}$ )

Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions
Bias current	$I_{CC}$	–	4.6	8	mA	$V_{FB}=1\text{V}$
Output sense voltage	$V_s$	-5.05	-5.00	-4.95	V	$V_{FB}=0.75\text{V}$
Switching frequency	$F_{osc}$	600	900	1200	kHz	$V_{FB}=0.75\text{V}$
Maxim ON duty cycle	$D_{ON}$	70	80	90	%	$V_{FB}=1.0\text{V}$
Output SAT voltage 1	$V_{SAT1}$	–	30	150	mV	$I_{OUT}=-20\text{mA}$ , $V_s=-5.5\text{V}$
Output SAT voltage 2	$V_{SAT2}$	$V_{CC}-1$	$V_{CC}-0.8$	–	V	$I_{OUT}=+20\text{mA}$ , $V_s=-4.5\text{V}$
UVLO threshold voltage	$V_{UT}$	3.5	3.8	4.0	V	$V_{CC}$ : sweep up

## ●Application circuit



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