

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.

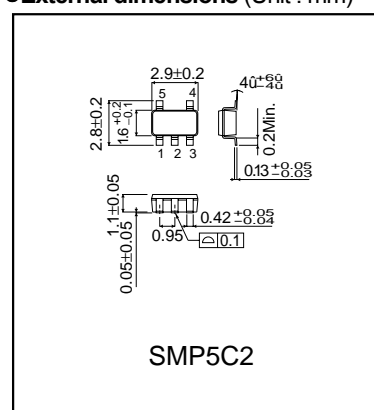
●Applications

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 _{CC}	15 *	V
Power dissipation	P _d	170	mW
Operating temperature range	T _{opr}	-40 to +85	°C
Storage temperature range	T _{stg}	-55 to +125	°C

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

●Recommended operating conditions (Ta = 25°C)

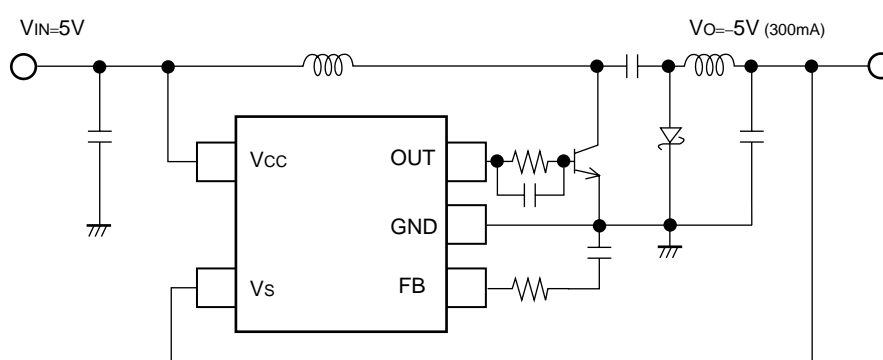
Parameter	Symbol	Min.	Typ.	Max.	Unit
Supply voltage	V _{CC}	4	5	14	V

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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