

# System Regulator for HDD

## BD9786KN

BD9786KN is an IC included a 2 channel switching regulator and P channel series regulator controller and reset circuit. The switching regulator enables high efficiency because of a PFM control method. It is also built in a switching component, Nch FET.

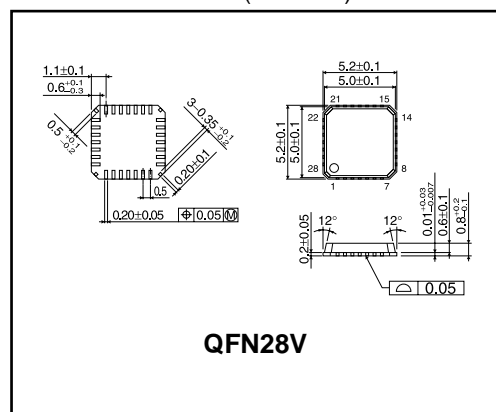
### ●Applications

HDD, PDA

### ●Features

- 1) 2-ch switching regulator, P-channel series regulator controller and reset circuit are built-in and recommendable for HDD.
- 2) High efficiency for PFM and synchronous rectification.
- 3) Built-in dual N-channel MOSFET switches.
- 4) Under voltage lockout, output short protection.
- 5) Built-in soft start circuit.

### ●External dimensions (Unit : mm)



### ●Absolute maximum rating (Ta=25°C)

Parameter	Symbol	Limits	Unit
Supply voltage	V <sub>CC</sub>	7	V
Power dissipation	P <sub>d</sub>	580 *	mW
Operating temperature range	T <sub>opr</sub>	-25 to + 85	°C
Storage temperature range	T <sub>stg</sub>	-55 to + 125	°C

\*Derating is done 5.8mW/°C for operating above Ta≥25°C.

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

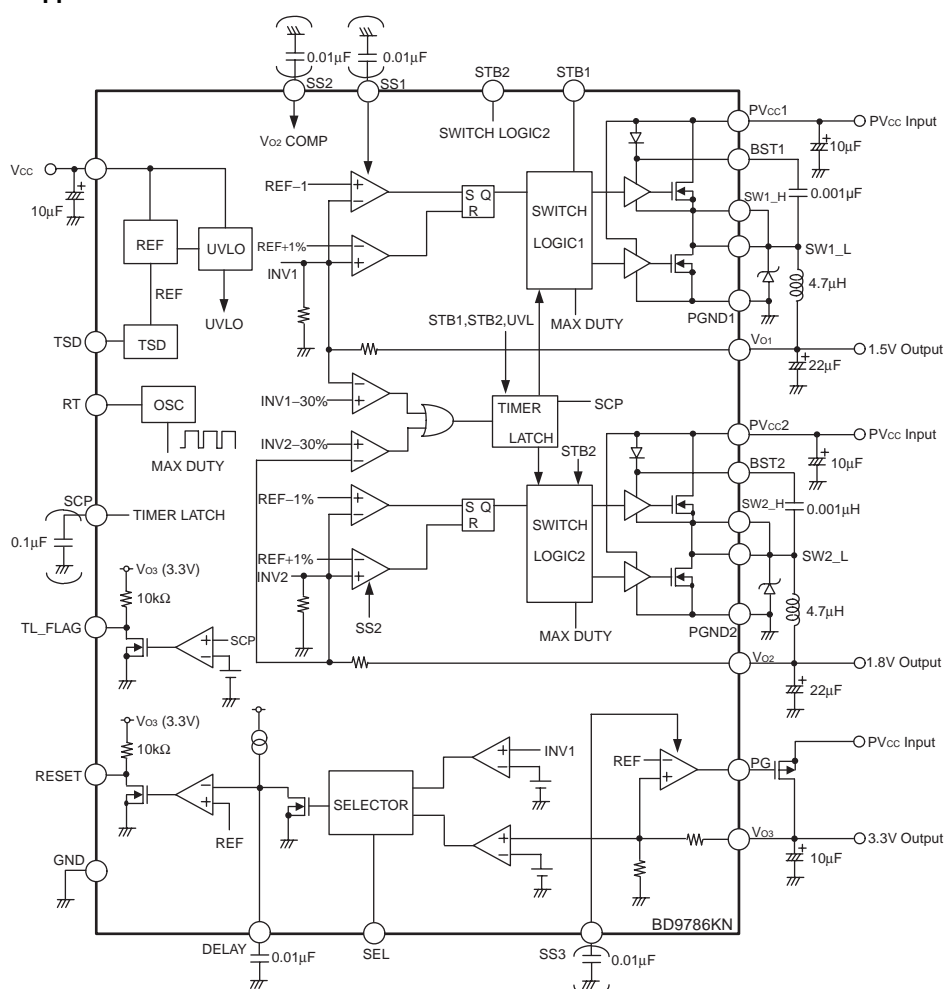
Parameter	Symbol	Min.	Typ.	Max.	Unit
Supply voltage	V <sub>CC</sub>	3.0	5.0	6.0	V

## Regulators

●Electrical characteristics (Unless otherwise specified, Ta=25°C, V<sub>CC</sub>=5V)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions
Input Threshold Voltage 1H	V <sub>O1H</sub>	—	1.525	1.540	V	SW ON→OFF
1L	V <sub>O1L</sub>	1.460	1.475	—	V	SW OFF→ON
SW Output Current 1	I <sub>o1</sub>	0.2	0.5	—	A	
Input Threshold Voltage 2H	V <sub>O2H</sub>	—	1.828	1.846	V	SW ON→OFF
2L	V <sub>O2L</sub>	1.754	1.772	—	V	SW OFF→ON
SW Output Current 2	I <sub>o2</sub>	0.3	0.5	—	A	
Input Threshold Voltage 3	V <sub>O3</sub>	3.234	3.30	3.366	V	PG H→L
Oscillation Frequency	f <sub>osc</sub>	0.65	1.0	1.3	MHz	
Average Consumption Current	I <sub>cc</sub>	—	800	1300	μA	
Stand-by Current	I <sub>ST</sub>	—	370	570	μA	STB 1,2=0V

## ●Application Circuit



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