

# 1-channel DC/DC converter controller

## BD9300/F/FV

BD9300/F/FV is an output open collector type of 1-channel DC/DC converter controller. Step-up, step-down and inverting DC/DC converter can be composed. Input voltage range is wide (3.6V to 35V) and this IC can be used widely for various applications. Pin layout is nearly the same as BA9700 and it is easy to replace it.

### ●Applications

TV, power supply for liquid crystal TV, Backlight  
DSC, DVC, Printer, DVD, DVD recorder, Other consumer products

### ●Features

- 1) 1-channel PWM control DC/DC converter controller.
- 2) High voltage input : 3.6 to 35V.
- 3) Reference voltage accuracy :  $\pm 1\%$ .
- 4) Oscillating frequency changeable : 20 to 800kHz.
- 5) Built-in UVLO (Under voltage lock out) circuit and SCP (Short circuit protection) circuit.
- 6) Current at stand-by mode :  $0\mu\text{A}$  (typ.)
- 7) Switching external synchronization available. (slave operation)

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

Parameter	Symbol	Limits	Unit
Supply voltage	V <sub>CC</sub>	36	V
Power dissipation	BD9300	950 *1	mW
	BD9300F	450 *2	
	BD9300FV	400 *3	
Operating temperature range	T <sub>opr</sub>	-40 to +85	°C
Storage temperature range	T <sub>stg</sub>	-55 to +125	°C

\*1 Derating : 9.5mW/°C for operation above Ta=25°C.

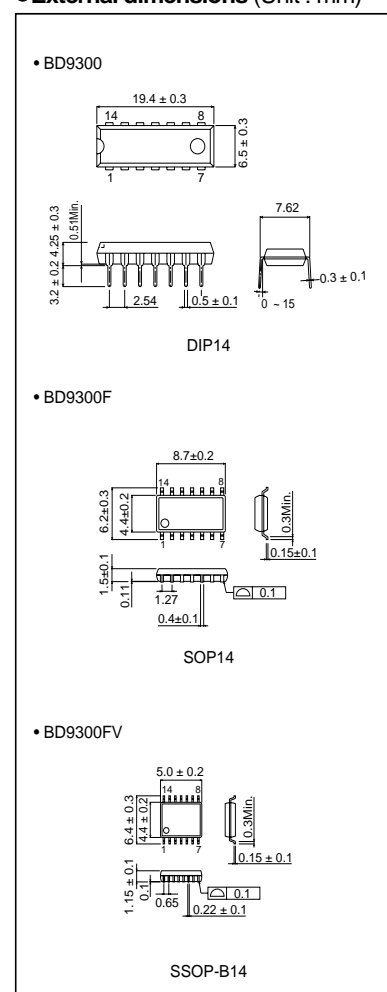
\*2 Derating : 4.5mW/°C for operation above Ta=25°C.

\*3 Derating : 4.0mW/°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>	3.6	12	35	V

### ●External dimensions (Unit : mm)



Regulators

●Electrical characteristics (Unless otherwise noted, Ta=25°C, V<sub>CC</sub>=12V)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions
Reference voltage	V <sub>ref</sub>	2.475	2.500	2.525	V	I <sub>ref</sub> =1mA
Oscillating frequency	f <sub>osc</sub>	165	220	275	kHz	RT=20kΩ, CT=200pF
UVLO threshold voltage	V <sub>UT</sub>	-	2.8	-	V	
Saturation voltage (output)	V <sub>SAT</sub>	-	1.0	1.4	V	I <sub>o</sub> =30mA
CTL ON threshold voltage	V <sub>ON</sub>	2	-	-	V	
CTL OFF threshold voltage	V <sub>OFF</sub>	-	-	0.7	V	
Standby current	I <sub>STB</sub>	-	0	10	μA	V <sub>CTL</sub> =0V
Average current consumption	I <sub>CC</sub>	-	1.2	2.4	mA	RT=VREF

●Block diagram

