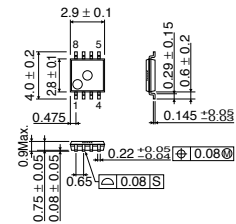


1.5V output 1ch Series Regulator Driver IC BD3501FVM

● Description

The BD3501FVM is an ultra-low drop-out regulator for mobile PC. Power supply for input is separated from the power supply for a driver to supply power with lowest input voltage. Industry's first speed of transient responsivity is realized and also high-reliability is realized for digital applications with lower voltage and larger current because power supply can be composed to load current by selecting external FET.

● Dimension (Unit : mm)



MSOP8

● Features

- 1) Rush current reduced by NRCS
- 2) Built-in driver for external Nch transistor
- 3) Built-in timer latch short protection circuit
- 4) Built-in low input error operating protection circuit
- 5) Built-in overheat protection circuit
- 6) MSOP8 package

● Applications

Power supply for mobile PC

● Absolute Maximum Ratings (Ta=25°C)

Parameter	Symbol	Limits	Unit
Input voltage	Vcc	7 *1	V
VIN voltage	VIN	7	V
Enable input voltage	Ven	7	V
Power dissipation	Pd	437.5 *2	mW
Operating temperature range	Topr	-10 ~ +100	°C
Storage temperature range	Tstg	-55 ~ +150	°C
Junction temperature	Tjmax	+150	°C

*1 Do not exceed Pd.

*2 Derating : 3.5mW/°C for operation Ta ≥ 25°C (No heat radiation board)

● Recommended Operating Conditions (Ta=25°C)

Parameter	Symbol	Min.	Typ.	Max.	Unit
Input voltage	Vcc	4.5	—	5.5	V
VIN voltage	VIN	VoX1.15	—	5.5	V
Enable input voltage	Ven	-0.3	—	5.5	V

*This product is not designed for protection against radioactive rays.

● Electrical characteristics (Unless otherwise noted: Ta=25°C, Vcc=5V, VIN=3.3V, VEN=3V)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions
Bias current	ICC	—	0.8	1.6	mA	
Shutdown mode current	IST	—	0	10	μA	VEN=0V
Output voltage1	Vo1	1.485	1.500	1.515	V	Io=50mA
Output voltage2	Vo2	1.455	1.500	1.545	V	Vcc=4.5V to 5.5V, Io=0A to 3A Ta=-10°C to 100°C *
<NRCS>						
NRCS charge current	Inrcs	14	20	26	μA	Vnracs=0.5V, Vcc=4.5V to 5.5V Ta=-10°C to 100°C *
<Feedback>						
VFB standby current	FBSTB	150	—	—	mA	VEN=0V, VFB=1V
<OUTPUT>						
G source current	IGSO	0.5	1	1.5	mA	VFB=Vo-0.1V, G=Vo+1V
G sink current	IGSI	2	3	4	mA	VFB=Vo+0.1V, G=Vo+1V
<UVLO>						
Vcc UVLO	VccUVLO	4.2	4.35	4.5	V	Vcc : Sweep up
Vcc UVLO hysteresis	Vcchys	100	160	220	mV	Vcc : Sweep down
VIN UVLO	VINUVLO	VoX1.05	VoX1.1	VoX1.15	V	VIN : Sweep up
VIN UVLO hysteresis	VINhys	80	130	180	mV	VIN : Sweep down
<SCP>						
SCP charge current	Iscpch	14	20	26	μA	VSCP=0.5V, Vcc=4.5V to 5.5V Ta=-10°C to 100°C *
SCP threshold voltage	Iscpth	1.2	1.3	1.4	V	VSCP=0.5V
Short detection voltage	Vscp	VoX0.6	VoX0.7	VoX0.8	V	

*Design guaranteed

● Application Circuit

