

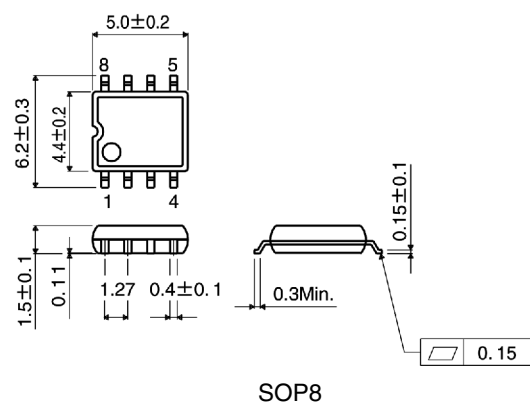
## Power management switching IC BD6520F/BD6521F

### ● Description

The BD6520F, BD6521F is a power management switching IC that includes Low ON resistance MOSFET. Soft start and discharge circuit are included. It reduces influence on the load when the output is switched ON or OFF, and protect the circuit. Compared with discrete component structure, board area can be reduced by each protection function which is necessary to control the power supply.

Function	BD6520F	BD6521F
Soft start circuit	○	○
Discharge circuit	○	○
Overcurrent detection value	×	2A
UVLO	○	○
Temperature protection circuit	○	○
Error detection output	×	○

### ● Dimension (Units : mm)



### ● Features

- 1) Low ON resistance switch: Typ.=50m
- 2) Output current capacity: 2A (Min.)
- 3) Built-in each protection function, detection circuit
- 4) SOP8 small package

### ● Applications

Battery driven equipment such as notebook PC, PDA

### ● Absolute Maximum Ratings (Ta=25°C)

Parameter	Symbol	Limits	Unit
Supply voltage	V <sub>DD</sub>	-0.3 ~ +6.0	V
CTRL input voltage	V <sub>IN</sub>	-0.3 ~ V <sub>DD</sub> +0.3	V
Storage temperature range	T <sub>STG</sub>	-55 ~ +125	°C
Power dissipation	P <sub>d</sub>	450	mW

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

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

● Recommended Operating Conditions (Ta=25°C)

Parameter	Symbol	Min.	Typ.	Max.	Unit
Operating voltage range	V <sub>DD</sub>	3.0	—	5.5	V
Switch current	I <sub>SW</sub>	0	—	2	A
Operating temperature range	T <sub>OPR</sub>	-25	—	+85	°C

● Electrical characteristics BD6520F (Unless otherwise noted : Ta=25°C, V<sub>DD</sub>=5V)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions
ON resistance	R <sub>ON1</sub>	—	50	—	m	V <sub>DD</sub> =5V, V <sub>CTRL</sub> =5V, I <sub>OUT</sub> =2A
	R <sub>ON2</sub>	—	60	—	m	V <sub>DD</sub> =3V, V <sub>CTRL</sub> =3V, I <sub>OUT</sub> =2A
VDD operating current	I <sub>DD</sub>	—	110	220	μA	V <sub>CTRL</sub> =5V, OUT=OPEN
	I <sub>DDST</sub>	—	—	2	μA	V <sub>CTRL</sub> =0V, OUT=OPEN
CTRL input voltage	V <sub>CTRL</sub> L	—	—	0.7	V	V <sub>CTRL</sub> L=Low Level
	V <sub>CTRL</sub> H	2.5	—	—	V	V <sub>CTRL</sub> H=High Level
CTRL input current	I <sub>CTRL</sub>	-1	0	1	μA	V <sub>CTRL</sub> =L, H
OUT rise delay time	Trd	—	1000	—	μs	RL=10 , SSCTL=OPEN CTRL=L H OUT=50%
OUT rise time	Tr	—	2000	—	μs	RL=10 , SSCTL=OPEN OUT=10% 90%
OUT fall delay time	Tfd	—	3	—	μs	RL=10 , SSCTL=OPEN CTRL=H L OUT=50%
OUT fall time	Tf	—	1	—	μs	RL=10 , SSCTL=OPEN OUT=90% 10%
Switch discharge resistance	R <sub>SWDC</sub>	—	350	600		V <sub>DD</sub> =5V, V <sub>CTRL</sub> =0V, V <sub>OUT</sub> =5V
UVLO threshold	V <sub>UVLO</sub> H	2.3	2.5	2.7	V	V <sub>DD</sub> increasing
	V <sub>UVLO</sub> L	2.1	2.3	2.5	V	V <sub>DD</sub> decreasing
UVLO hysteresis voltage	V <sub>HYS</sub>	100	200	300	mV	V <sub>HYS</sub> =V <sub>UVLO</sub> H-V <sub>UVLO</sub> L
Over temperature threshold	T <sub>TS</sub>	—	135	—	°C	V <sub>CTRL</sub> =5V

● Block Diagram

