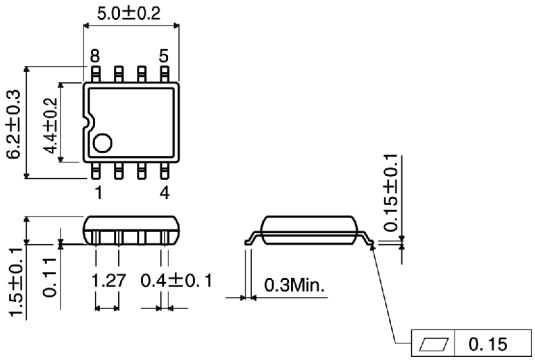
Power management switching IC
BD6520F/BD6521F

● 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)



SOP8

● 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_{DD}	–0.3 ~ +6.0	V
CTRL input voltage	V_{IN}	–0.3 ~ VDD+0.3	V
Storage temperature range	T_{STG}	–55 ~ +125	˚C
Power dissipation	P_d	450	mW

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

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

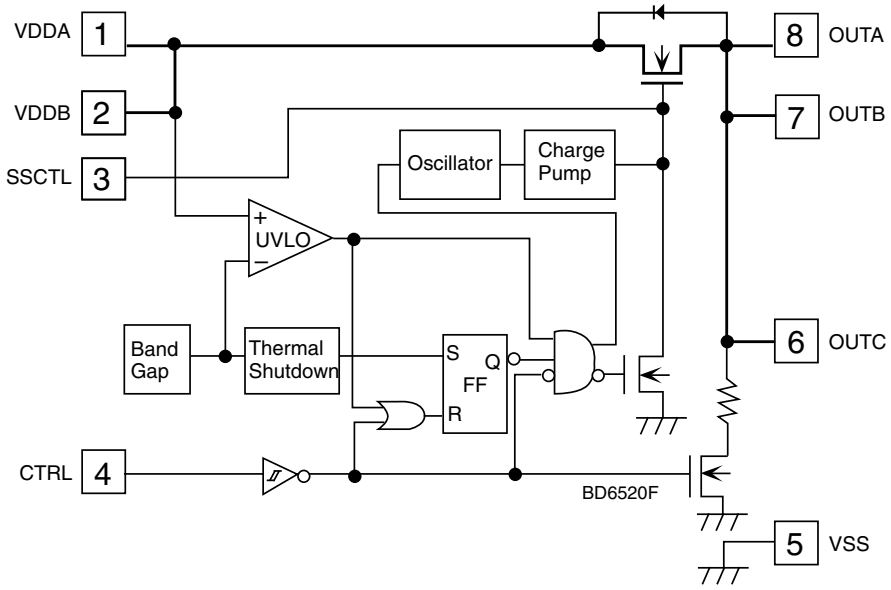
● Recommended Operating Conditions (Ta=25˚C)

Parameter	Symbol	Min.	Typ.	Max.	Unit
Operating voltage range	V_{DD}	3.0	—	5.5	V
Switch current	I_{SW}	0	—	2	A
Operating temperature range	T_{OPR}	–25	—	+85	˚C

● Electrical characteristics BD6520F (Unless otherwise noted : Ta=25˚C, V_{DD}=5V)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions
ON resistance	RON1	—	50	—	m	VDD=5V, VCTRL=5V, IOUT=2A
	RON2	—	60	—	m	VDD=3V, VCTRL=3V, IOUT=2A
VDD operating current	IDD	—	110	220	µA	VCTRL=5V, OUT=OPEN
	IDDST	—	—	2	µA	VCTRL=0V, OUT=OPEN
CTRL input voltage	VCTRLL	—	—	0.7	V	VCTRLL=Low Level
	VCTRLH	2.5	—	—	V	VCTRLH=High Level
CTRL input current	ICTRL	–1	0	1	µA	VCTRL=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	RSWDC	—	350	600		VDD=5V, VCTRL=0V, VOUT=5V
UVLO threshold	VUVLOH	2.3	2.5	2.7	V	VDD increasing
	VUVLOL	2.1	2.3	2.5	V	VDD decreasing
UVLO hysteresis voltage	VHYS	100	200	300	mV	VHYS=VUVLOH–V UVLOL
Over temperature threshold	TTS	—	135	—	˚C	VCTRL=5V

● Block Diagram



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