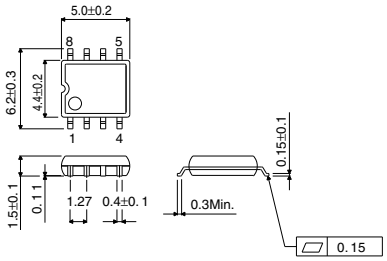
Power management switch
BD6522F

●Description

BD6522F is a power management switch IC that includes Low ON resistance MOSFET. The built-in soft start circuit and the error detection circuit protect output. In addition, this IC includes discharge circuit that discharge residual voltage when the output is OFF.

●Dimension (Units : mm)



SOP8

●Features

1) Low ON resistance switch: Typ.=50mΩ
2) Output current capacity: 0~2 A
3) Reverse current prevention when the switch is OFF.
4) Built-in soft start circuit
5) UVLO
6) Temperature protection circuit with latch function
7) Built-in discharging circuit (When output is OFF.)

●Applications

Battery driven equipment such as notebook PC, PDA etc.

●Absolute Maximum Ratings (Ta=25˚C)

Parameter	Symbol	Limits	Unit
Supply voltage	V_{DD}	–0.3 ~ +6.0	V
CTRL pin voltage	V_{CTRL}	–0.3 ~ +6.0	V
Output pin voltage	V_{OUT}	–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

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

Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions
ON resistance	$R_{ON}1$	—	50	70	mΩ	V_{DD}=5V, V_{CTRL}=5V
	$R_{ON}2$	—	60	85	mΩ	V_{DD}=3.3V, V_{CTRL}=3.3V
VDD operating current	I_{DD}	—	110	220	μA	V_{CTRL}=5V, OUT=OPEN
	I_{DDST}	—	—	2	μA	V_{CTRL}=0V, OUT=OPEN
CTRL input voltage	V_{CTRL}L	—	—	0.7	V	V_{CTRL}L=Low Level
	V_{CTRL}H	2.5	—	—	V	V_{CTRL}H=High Level
CTRL input current	I_{CTRL}	—1	0	1	μA	V_{CTRL}=L, H
OUT rise time	T_{ON}	—	1000	3500	μS	RL=10Ω, SSCTL=OPEN CTRL=H->OUT=90%
OUT fall time	T_{OFF}	—	4	20	μS	RL=10Ω, SSCTL=OPEN CTRL=L->OUT=10%
Switch discharge resistance	R_{SWDC}	—	350	600	Ω	V_{DD}=5V, V_{CTRL}=0V
UVLO detection voltage	V_{UVLO}H	2.3	2.5	2.7	V	V_{DD} increasing
	V_{UVLO}L	2.1	2.3	2.5	V	V_{DD} decreasing
UVLO hysteresis voltage	V_{HYS}	100	200	300	mV	V_{HYS}=V_{UVLO}H—V_{UVLO}L
Over temperature threshold	T_{TS}	—	135	—	˚C	V_{CTRL}=5V

●Block Diagram