

DC/DC converter for CD/DVD-ROM slim

BH6559FV

BH6559FV is an IC that incorporates 1 channel variable DC/DC converter and reset function. Variable DC/DC converter can set high-precision voltage ($\pm 2\%$ precision) by trimming reference voltage.

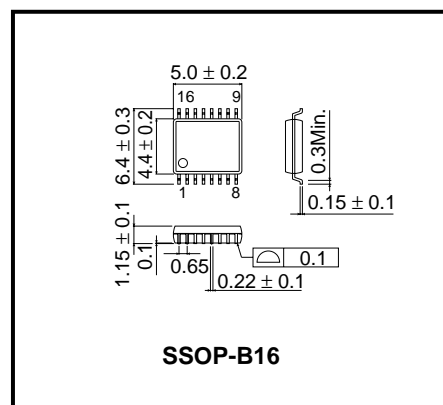
●Applications

CD/DVD-ROM slim

●Features

- 1) Low current consumption by adopting synchronous rectifier type.
- 2) Few external components reduced by the built-in power MOS transistor.
- 3) Adjustable by external resistor of DC/DC converter output.
- 4) Built-in reset for supply voltage and ATAPI (output pin is common).
- 5) Built-in delay time setting function for supply voltage reset.

●External dimensions (Units : mm)



●Absolute maximum ratings (Ta=25°C)

Parameter	Symbol	Limits	Unit
Supply voltage 1 (PRE block)	PREV _{cc1}	7	V
Supply voltage 2 (PRE block)	PREV _{cc2}	7	V
Supply voltage (PRE block)	POWV _{cc}	7	V
Pin output current (DSW block)	I _{swomax}	1 *1	A
Power dissipation	P _d	0.56 *2	W
Operating temperature range	T _{opr}	-30 to +85	°C
Storage temperature range	T _{stg}	-55 to +150	°C

*1 Intermittent current at maximum applied time of 5msec, 1/10 duty (Max.)

*2 Derating : 4.5mW/°C for operation above Ta=25°C. On less than 3% (percentage occupied by copper foil), 70mm×70mm, t=1.6mm, glass epoxy mounting.

Optical discs

●Recommended Operating Conditions (Ta=25°C)

Parameter	Symbol	Min.	Typ.	Max.	Unit
Supply voltage 1 (PRE block)	PREV _{CC1}	4.5	5.0	5.5	V
Supply voltage 2 (PRE block)	PREV _{CC2}	4.5	5.0	5.5	V
Supply voltage (Pow block)	POWV _{CC}	4.5	5.0	5.5	V
Ambient temperature	Ta	-10	25	70	°C
Vatiable DC/DC converter output current *	I _o	-	300	500	mA
Vatiable DC/DC converter output voltage	V _{BD}	1.7	-	V _{CC} -1	V

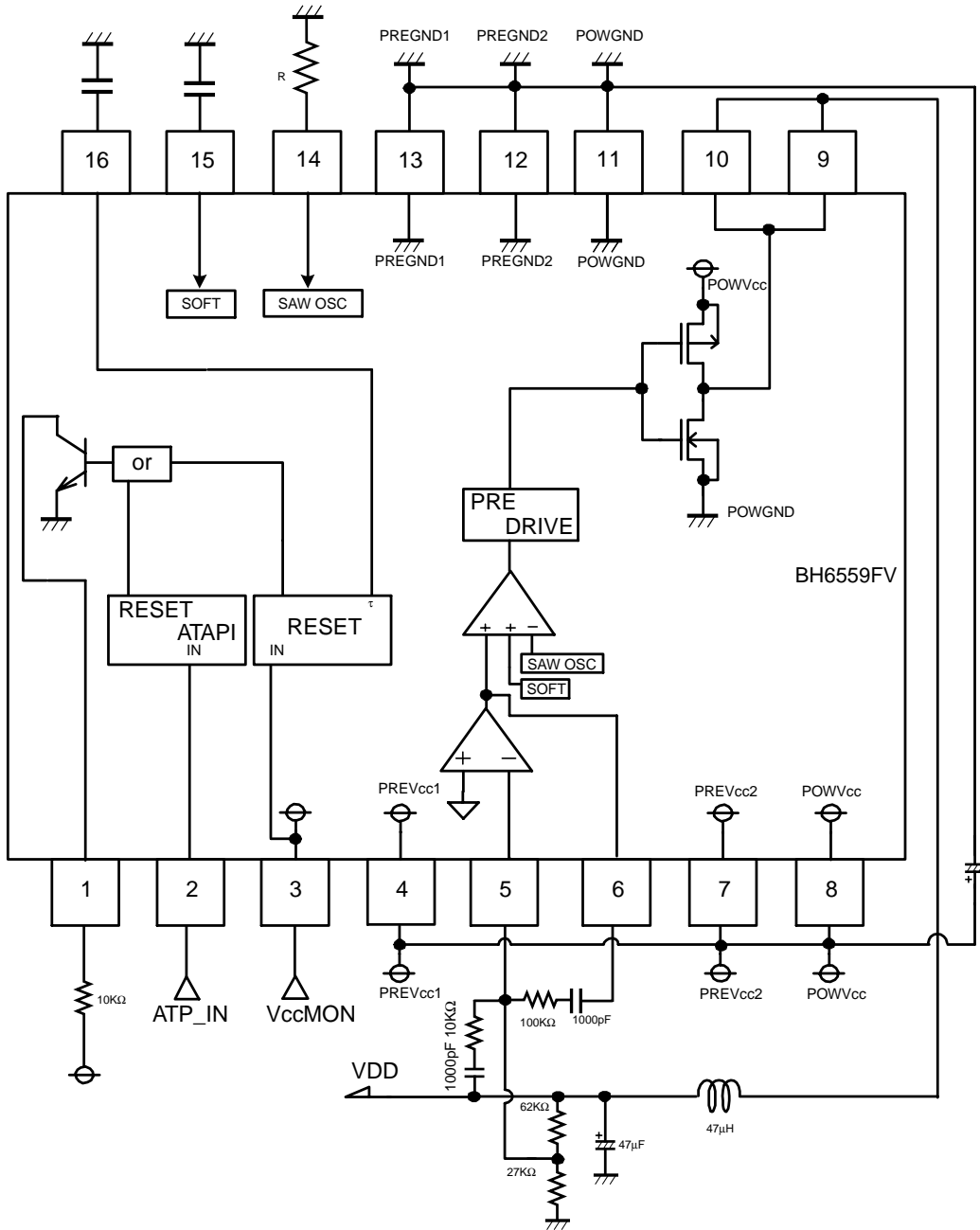
* When L=47μH, C=47μF is used

●Electrical characteristics (Ta=25°C, PREV_{CC1}/2=5V, POWV_{CC}=5V)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions
Current consumption at no signal	I _{CC}	-	1.2	24	mA	No load
< Variable DC/DC converter >						
EI pin threshold voltage	VEITH	0.980	1.00	1.020	V	
DSW pin ON resistance H	RDSWONH	-	0.42	0.87	Ω	IL=500mA
DSW pin ON resistance L	RDSWONL	-	0.30	0.60	Ω	IL=-500mA
DSW pin oscillation frequency	f _{DSW}	210	310	410	kHz	OSC_R=22kΩ
< Reset block >						
Vcc reset ON voltage	VRSTON	3.52	3.70	3.88	V	sweep down
Vcc reset hysteresis width	VRSTHYS	50	80	110	mV	
Vcc reset delay time	VRSTT	30	50	70	msec	RESET τ=0.1μF
ATAPI reset ON voltage	VATPON	1.25	1.40	1.55	V	sweep down
ATAPI reset hysteresis width	VATPHYS	40	60	90	mV	

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

●Application Circuit



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