Voltage controller for CD-ROM

BH6552FV

BH6552FV is a voltage controller developed for CD-ROM. This IC incorporates 3.3V output DC/DC converter and reset circuit into a single chip.

●Features

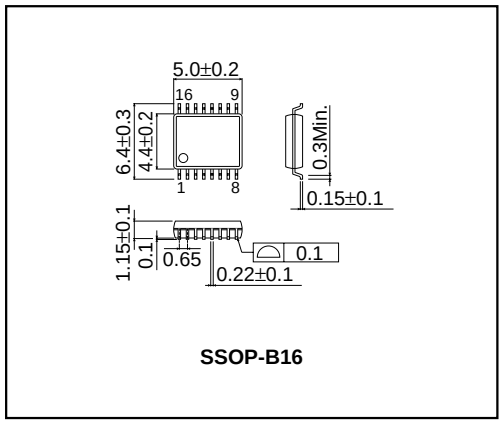
< 3.3V DC / DC converter >

· Intended for low drain current by adopting sync rectification type.
· Power MOS Tr is contained.
· 3.3V DC/DC converter reduces variation through laser trimming (3.3V ± 2%).
· Built-in mute function.

< Reset circuit >

· Source voltage Reset reduces variation through laser trimming (3.7V ± 2%).

●External dimensions (Units : mm)



SSOP-B16

●Applications

CD, DVD

●Absolute maximum ratings (Ta=25°C)

Parameter	Symbol	Limits	Unit
Power MOS supply voltage	PowVcc	9	V
Control circuit power supply voltage	PreVcc	9	V
Pre driver power supply voltage	VG(9pin)	12	V
DSW output current	Iomax	1 *1	A
Power dissipation	Pd	560 *2	mW
Operating temperature range	Topr	–30~+85	°C
Storage temperature range	Tstg	–55~+150	°C

∗1 Switching current of maximum time 5msec and duty is below 1/10.
∗2 On less than 3%(percentage occupied by copper foil), 70mm×70mm, t=1.6mm, glass epoxy mounting.Reduce power by 4.5mW for each degree above 25°C.

●Recommended operating conditions (Ta=25°C)

Parameter	Symbol	Min.	Typ.	Max.	Unit
Power MOS supply voltage	PowVcc	4.5	5.0	5.5	V
Control circuit power supply voltage	PreVcc	4.5	5.0	5.5	V
Pre driver power supply voltage *	VG(9pin)	8.0	10.0	11.5	V
Atmosphere temperature range	Ta	–10	25	70	°C

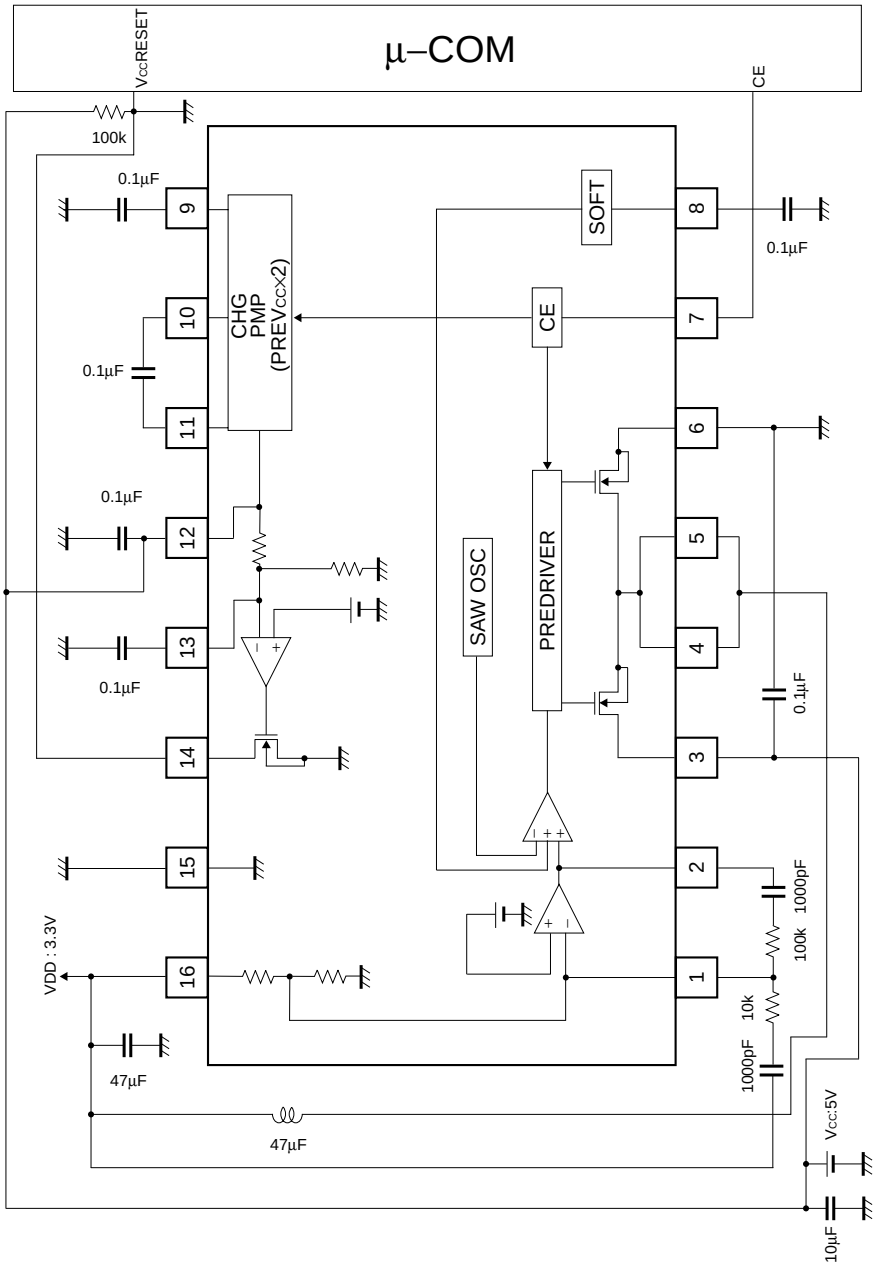
∗ In case of being supplied external voltage source.

●**Electric characteristics** (Unless specified particularly Ta=25°C, PREVcc=5V)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions
Current in stanby mode	I_{ST}	–	170	290	μA	CE=0V
Quiescent current	I_{CC}	–	1.45	2.60	mA	
VG quiescent current	I_{CG}	–	80	160	μA	
< 3.3V DC/DC converter >						
EI terminal threshold voltage	V_{EITH}	1.19	1.25	1.31	V	
SOFT terminal output voltage	V_{SOFT}	1.70	2.40	3.10	V	
SOFT terminal source current	I_{SOFT}	6.5	9.5	12.5	μA	
SOFT terminal impedance	R_{SOFT}	192	253	314	kΩ	
DSW terminal ON resistor H	R_{DSWONH}	–	0.42	0.87	Ω	IL=500mA
DSW terminal ON resistor L	R_{DSWONL}	–	0.30	0.60	Ω	IL=–500mA
DSW terminal oscillation frequency	f_{DSW}	210	310	410	kHz	
DSW terminal minimum pulse width	t_{DSWMIN}	0.01	–	0.50	μ sec	
VDD terminal threshold voltage	V_{DCO}	3.24	3.30	3.36	V	
< Charge pump >						
Output voltage	V_G	7.7	9.7	11.7	V	In action
VG drop mute	V_{GM}	5.0	6.0	7.0	V	
free-running oscillation frequency	f_{OSC}	210	310	410	kHz	
Reset monitor circuit						
V_{CC} reset ON voltage	V_{RSTON}	3.63	3.70	3.77	V	
V_{CC} reset hysteresis width	V_{RSTHYS}	30.0	60.0	90.0	mV	
V_{CC} reset output voltage	V_{RSTO}	–	0.16	0.32	V	IL=1mA,PREV$_{CC}$=3.5V

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

● **Application circuit**



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