

Power controller+4-channel PWM driver for portable CD BH6570KV

●Description

BH6570KV incorporates 4-channel DC/DC converter, 1-channel series regulator and 4-channel PWM drivers on a single chip for a portable CD. Four lines for external power supply are able to drive efficiently and to reduce power consumption in the set. In addition, due to the small VQFP48C package, the size of the set can be reduced.

●Features

- 1) Low power consumption
- 2) Low ON resistance
- 3) VQFP48C package

<Power control>

- Step-up DC/DC converter for micro controller
- Main step-up/step-down DC/DC converter
- Sub step-up DC/DC converter
- VG step-up circuit for power MOS driving
- Built-in ripple filter
- Built-in series regulator circuit

<Driver>

- Built-in 4-channel H bridge driver using power MOS
- Digital input available
- Direct PWM driving

●Applications

Portable CD

●Absolute Maximum Ratings (Ta=25°C)

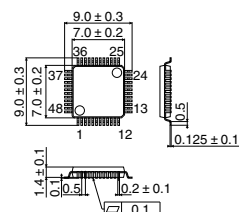
Parameter	Symbol	Limits	Unit
Battery supply voltage	PVcc1	7	V
System supply voltage	SVCC	7	V
AC adapter voltage	PVcc2	7	V
Power dissipation	Pd	1180	mW
Operating temperature range	Topr	- 30 ~ + 85	°C
Storage temperature range	Tstg	- 55 ~ + 150	°C

Derating : 9.5mW/°C for operation above Ta=25°C PCB (70mmx70mm, t=1.6mm) glass epoxy mounting.

●Recommended Operating Conditions (Ta=25°C)

Parameter	Symbol	Min.	Typ.	Max.	Unit
Battery supply voltage	PVcc1	1.5	2.4	4.5	V
System supply voltage	SVcc	2.0	2.5	4.5	V
AC adapter supply voltage	PVcc2	2.0	4.5	6.5	V
Ambient temperature	Ta	- 10	25	70	°C

●Dimension (Units : mm)



VQFP48C

●Electrical characteristics (Unless otherwise noted; PVcc1=2.4V, SVcc=VMC=2.5V, VSUB=3.1V, VG=6V)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions
<Whole circuit>						
PVCC1 current consumption	IPVCC1	—	1.8	2.7	mA	
<H bridge driver>						
Output ON resistance	R _{ON}	—	1.8	2.8		Sum of ON resistance (top+bottom)
<Power>						
SVCC pin threshold voltage 1	SVCC _{TH1}	2.43	2.50	2.57	V	VCNT=0V
SVCC pin threshold voltage 2	SVCC _{TH2}	2.9	3.1	3.3	V	VCNT=2.5V
<Power supply for micro controller>						
VMC pin threshold voltage	V _{VMC} TH	2.4	2.6	2.8	V	LMC=2.3V, VMC=2.3 3V sweep
<Starter circuit>						
VG pin threshold voltage	V _{VG} TH	5.1	6	6.9	V	VLG=5V, VG=5 7V sweep
<Ripple filter>						
Voltage between AVCC-VSUB	V _{RF}	170	205	240	mV	IAVCC=5mA
<Regulator circuit>						
Regulator output voltage 1	V _{REG1}	3.6	3.9	4.2	V	PVcc1=OPEN, PVcc2=6V, VCNT=2.5V
Regulator output voltage 2	V _{REG2}	2.7	2.9	3.1	V	PVcc1=OPEN, PVcc2=6V, VCNT=0V

● Application Circuit

