One chip driver for slim CD-ROM/RW, DVD-ROM BH6546KV

Description

BH6546KV is a 4-channel PWM driver that drives spindle/slide motor, and focus/track actuator coil of optical disc. In high speed and 180° PWM driving slim disc, the spindle driver can achieve low vibration/low noise.

Features

- 1) Low vibration/low noise by 180° PWM driving
- 2) Charge-pump circuit is not necessary for output due to complement power MOSFET.
- 3) Low power consumption due to low ON resistance Spindle driver output: 0.5Ω (Typ.) Slide/Focus/Tracking driver output: 1.2Ω (Typ.)
- 4) 1 phase/3 phase FG output can be switched by FG switching pin.
- 5) VQFP48C contributes to make the set smaller and thinner.

Applications

CD-ROM, CD-RW, DVD-ROM

● Absolute Maximum Ratings (Ta=25°C)

Parameter	Symbol	Limits	Unit
Power MOS supply voltage	PVcc	6	٧
Control circuit supply voltage	Vcc	6	V
Maximum output current	IoMAX	3 *1	Α
Power dissipation	Pd	1.18 * ²	W
Operating temperature range	Topr	−30 ~ +85	°C
Storage temperature range	Tstg	<i>−</i> 55 ~ +150	°C

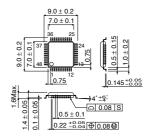
^{*1} Intermittent current at maximum applied time of 5msec, 1/10 duty (Max.)

On less than 3% (percentage occupied by copper foil), 70mmx70mm, t=1.6mm, glass epoxy mounting.

Recommended Operating Conditions

Parameter	Symbol	Limits	Unit
Power MOS supply voltage	PVcc	3.0 ~ 5.5	V
Control circuit supply voltage	Vcc	4.0 ~ 5.5	V
Ambient temperature	Ta	−10 ~ +70	°C

Dimension (Units : mm)



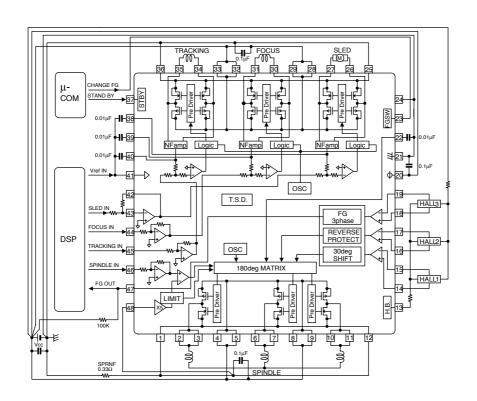
VQFP48C

^{*2} Derating : 9.5mW/°C for operation above Ta=25°C

● Electrical characteristics (Unless otherwise noted; Ta=25°C, Vcc=5V, PVcc=5V, Vref=1.65V, RL(act,SL)=8Ω+47μH, RL(SP)=2Ω+47μH, RNF=0.33Ω)

Parameter	Symbol	Min.	Тур.	Max.	Unit	Conditions
Current at stand-by mode	IST	_	_	0.1	mA	
Current at no signal	ICC	_	5	10	mA	
PWM driver						
Input dead zone (One side) (CH1,2)	VDZ1,2	0	10	30	mV	
Input dead zone (One side) (CH3)	VDZ3	0	20	50	mV	
Output offset voltage	VOO	-50	_	50	mV	
Voltage gain	GVC	12	14	16	dB	
Oscillation frequency	f3CH	240	300	360	kHz	
Output ON resistance (Top+Bottom)	RON	_	1.2	2.1	Ω	lo=500mA
Three phase motor driver						
Hall input level	VHI	200	_	_	mVpp	
Input dead zone (One side)	VDZSP	2	30	100	mV	
I/O gain	gm	0.35	0.50	0.65	Arms/V	SPRNF=0.33Ω
Oscillation frequency	fSP	65	85	105	kHz	
Output ON resistance (Top+Bottom)	RONSP	_	0.5	1.0	Ω	lo=500mA
Output limit voltage	VLIMSP	0.16	0.20	0.24	V	RNF=0.33Ω
Others						
Vref descent mute	VMVref	_	0.7	1.0	V	
Vcc descent mute	VMVcc	3.2	3.6	4.0	V	

Application Circuit



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