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.

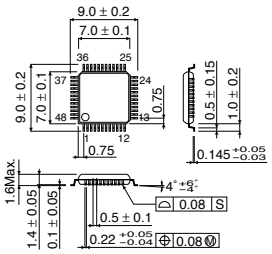
●Features

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

●Dimension (Units : mm)



VQFP48C

●Absolute Maximum Ratings (Ta=25˚C)

Parameter	Symbol	Limits	Unit
Power MOS supply voltage	PVcc	6	V
Control circuit supply voltage	Vcc	6	V
Maximum output current	IoMAX	3 *1	A
Power dissipation	Pd	1.18□*2	W
Operating temperature range	Topr	–30 ～ +85	˚C
Storage temperature range	Tstg	–55 ～ +150	˚C

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

*2 Derating : 9.5mW/˚C for operation above Ta=25˚C

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

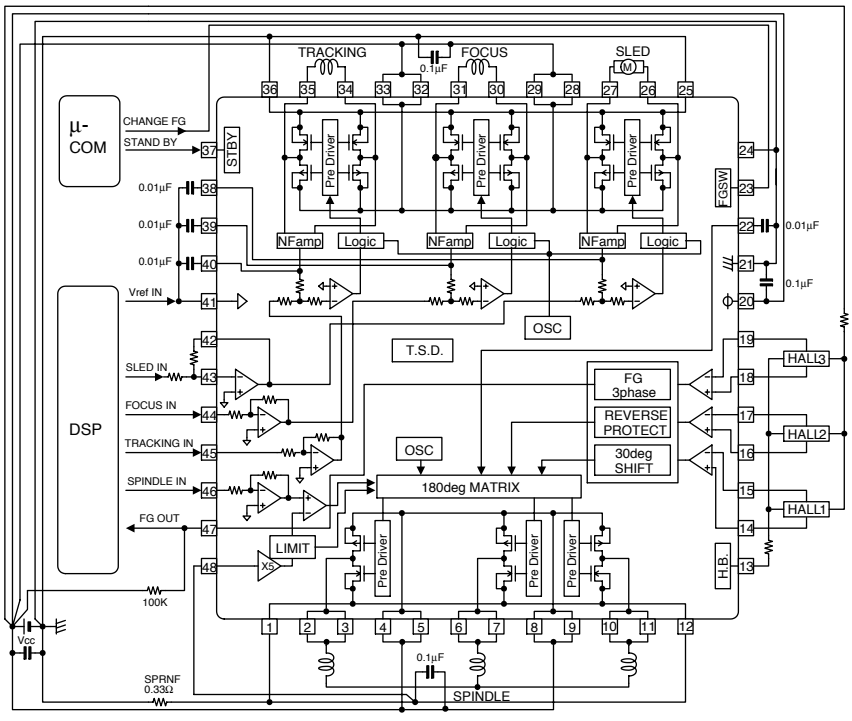
● Recommended Operating Conditions

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

● 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.	Typ.	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	Io=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	Io=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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