

Structure	Silicon Monolithic Integrated Circuit
Product series	PWM Driver for combi drive
Type	<b>BH5502KV</b>
Function	<ul style="list-style-type: none"> <li>· 3-phase-sensor-less system, therefore don't need three hall sensors for spindle motor driver.</li> <li>· Stability high-speed start from the state of the step for spindle motor driver.</li> </ul>

○ Absolute maximum ratings

Parameter	Symbol	Limits	Unit
Power MOS supply voltage	PVcc	6	V
Control circuit power supply voltage	Vcc	6	V
Maximum driver 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
Joint part temperature	Tjmax	150	°C

#1 The current is guaranteed 3.0A in case of the current is turned on/off in a duty-ratio of less than 1/10 with a maximum on-time of 5msec.  
 #2 PCB (70mm×70mm×1.6mm,occupied copper foil is less than 3%,glass epoxy standard board) mounting.  
 Reduce power by 9.5mW for each degree above 25°C.

○ Recommended operating conditions(Ta=-10~+70°C)

[Set the power supply voltage taking allowable dissipation into considering]

Parameter	Symbol	MIN	TYP	MAX	Unit
Power MOS supply voltage	PVcc	4.0	5.0	5.5	V
Control circuit power supply voltage	Vcc	4.0	5.0	5.5	V

This product described in this specification isn't judged whether it applies to COCOM regulations. Please confirm in case of export.  
 This product isn't designed for protection against radioactive rays.

Application example

The application circuit is recommended for use. Make sure to confirm the adequacy of the characteristics.  
 When using the circuit with changes to the external circuit constants, make sure to leave an adequate margin for external components including static and transitional characteristics as well as dispersion of the IC.  
 Note that ROHM cannot provide adequate confirmation of patents.

The product described in this specification is designed to be used with ordinary electronic equipment or devices (such as audio-visual equipment, office-automation equipment, communications devices, electrical appliances, and electronic toys).  
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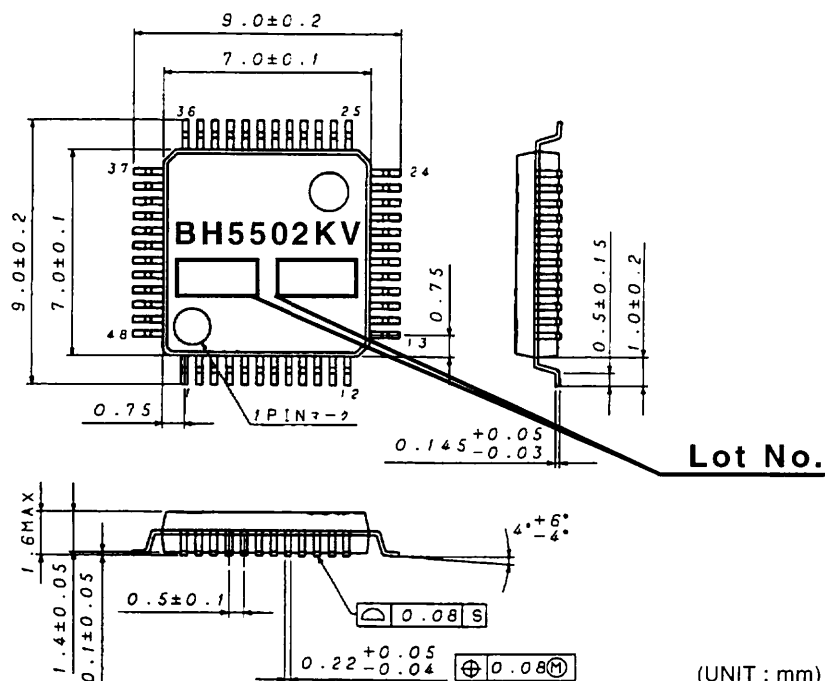
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○Electrical characteristics

(Unless otherwise noted Ta=25°C, Vcc=PVcc=5V, Vref=1.25V, RL(ACT,STP,Eject)=8Ω+47μH, RL(SP)=2Ω+47μH, RNF=0.22Ω, VST=5V, VGV=0V, VIN1,2,3,4,5,6=OPEN, VCOM=OPEN, VCCOM=OPEN, VCOU=OPEN)

Parameter		Symbol	MIN.	TYP.	MAX.	Unit	Condition
Circuit current	Quiescent current	ICC	—	8	20	mA	VST=2.0V
	Current in standby mode	IST	—	—	0.2	mA	VST=0.5V
Stepping driver block	Input dead zone (one side)	VDZ4,5	10	30	50	mV	
	Output offset voltage	VOO4,5	-50	—	50	mV	
	Voltage gain	GVC4,5	16.0	18.0	20.0	dB	
	Output On resistor (top and bottom)	RON4,5	—	1.6	2.4	Ω	Io=500mA
	PWM frequency	f4,5CH	240	300	360	kHz	
Spindle driver block	Input dead zone of gm1(one side)	VDZSP1	2	30	100	mV	
	Input dead zone of gm2(one side)	VDZSP2	2	90	300	mV	
	Input output gain 1	gm1	0.8	1.0	1.2	A/V	
	Input output gain 2	gm2	0.23	0.33	0.43	A/V	
	Output On resistor (top and bottom)	RONSP	—	0.6	1.4	Ω	Io=500mA
	PWM frequency	fSP	125	167	217	kHz	
Actuator driver block	Output offset voltage	VOO1,2,3	-50	—	50	mV	
	Voltage gain(CH1,2)	GVC1,2	15.5	17.5	19.5	dB	External input resistor 10kΩ
	Voltage gain(CH3)	GVC3	6.0	8.0	10.0	dB	External input resistor 10kΩ
	Output On resistor (top and bottom)	RON1,2,3	—	1.2	1.8	Ω	Io=500mA
	PWM frequency	f1,2,3CH	280	350	420	kHz	
Eject driver block	Input L level voltage range	INL	0	—	1.0	V	
	Input M level voltage range	INM	1.6	—	2.0	V	OPEN(Hi-z) is also available.
	Input H level voltage range	INH	2.6	—	3.3	V	
	Output On resistor (top and bottom)	RON6	—	2.0	3.0	Ω	Io=500mA
Others	Vref drop mute ON threshold voltage	VMVref	—	0.7	1.0	V	
	Vcc drop mute ON threshold voltage	VMVccD	3.2	3.6	4.0	V	

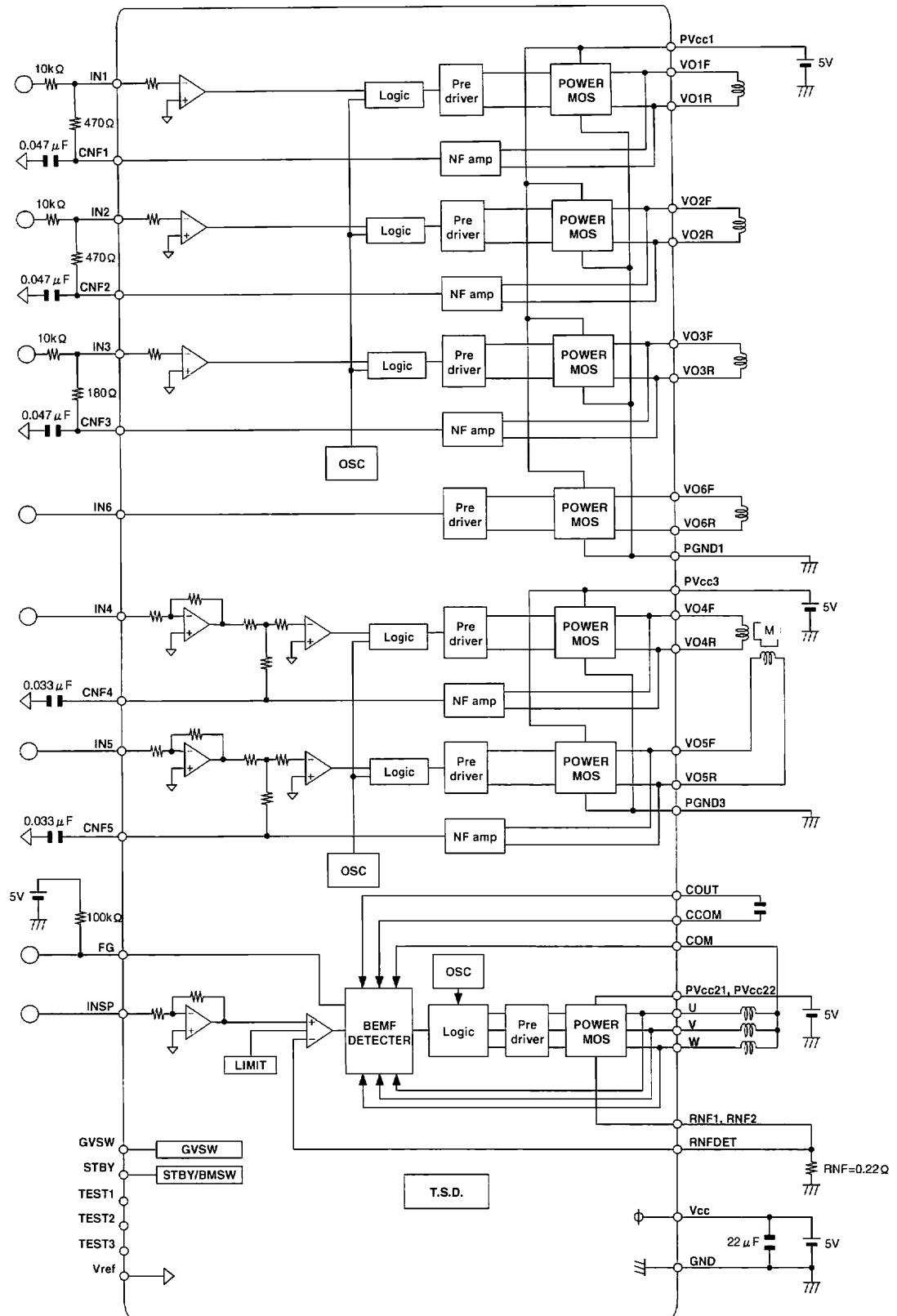
○Package outlines



(UNIT : mm)

Figure No. ; EX259-5001-1

○Block diagram / Application circuit



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Japan /  
(Internal Sales)

Tokyo	2-1-1, Yaesu, Chuo-ku, Tokyo 104-0082	TEL : +81(3)5203-0321	FAX : +81(3)5203-0300
Yokohama	2-4-8, Shin Yokohama, Kohoku-ku, Yokohama, Kanagawa 222-8575	TEL : +81(45)476-2131	FAX : +81(45)476-2128
Nagoya	Dainagayo Building 9F 3-28-12, Meieki, Nakamura-ku, Nagoya, Aichi 450-0002	TEL : +81(52)581-8521	FAX : +81(52)561-2173
Kyoto	579-32 Higashi Shiokouji-cho, Karasuma Nishi-iru, Shiokoujidori, Shimogyo-ku, Kyoto 600-8216	TEL : +81(75)311-2121	FAX : +81(75)314-6559

(Contact address for overseas customers in Japan)

Yokohama	TEL : +81(45)476-9270	FAX : +81(045)476-9271
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