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

○ 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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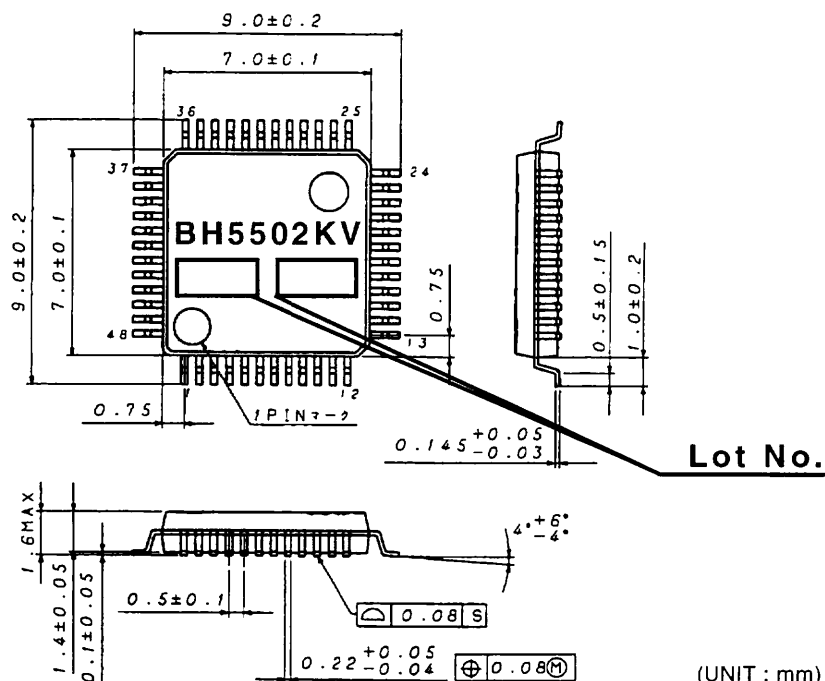
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○Electrical characteristics

(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 |
| | Output limit voltage | VLIMSP | 0.18 | 0.22 | 0.26 | V | |
| Actuator driver block | PWM frequency | fSP | 125 | 167 | 217 | kHz | |
| | 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 |
| Eject driver block | PWM frequency | f1,2,3CH | 280 | 350 | 420 | kHz | |
| | 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 | |
| Others | Output On resistor (top and bottom) | RON6 | — | 2.0 | 3.0 | Ω | Io=500mA |
| | Vref drop mute ON threshold voltage | VMVref | — | 0.7 | 1.0 | V | |
| Others | Vcc drop mute ON threshold voltage | VMVccD | 3.2 | 3.6 | 4.0 | V | |

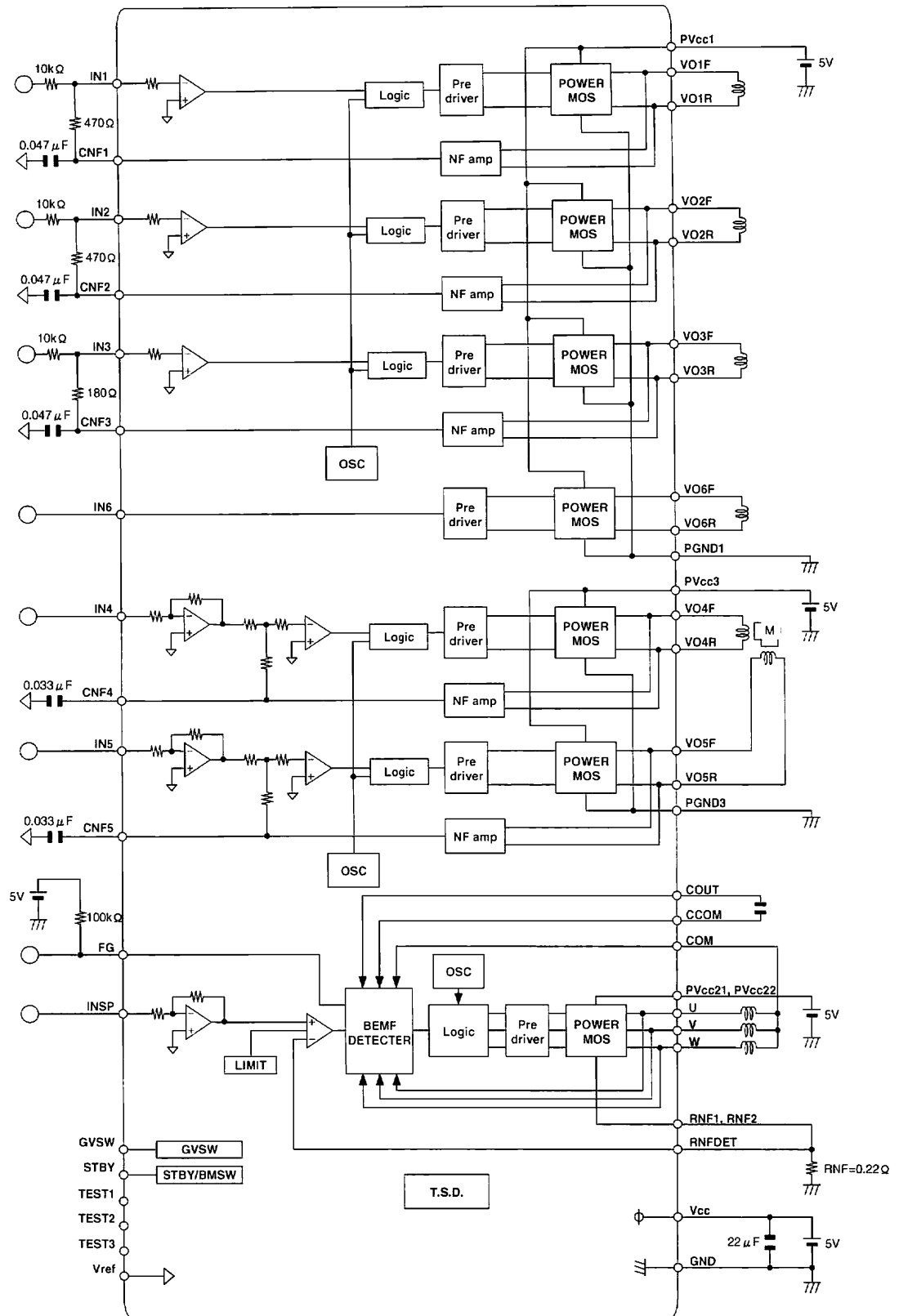
○Package outlines



(UNIT : mm)

Figure No. ; EX259-5001-1

○Block diagram / Application circuit



Notes

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