

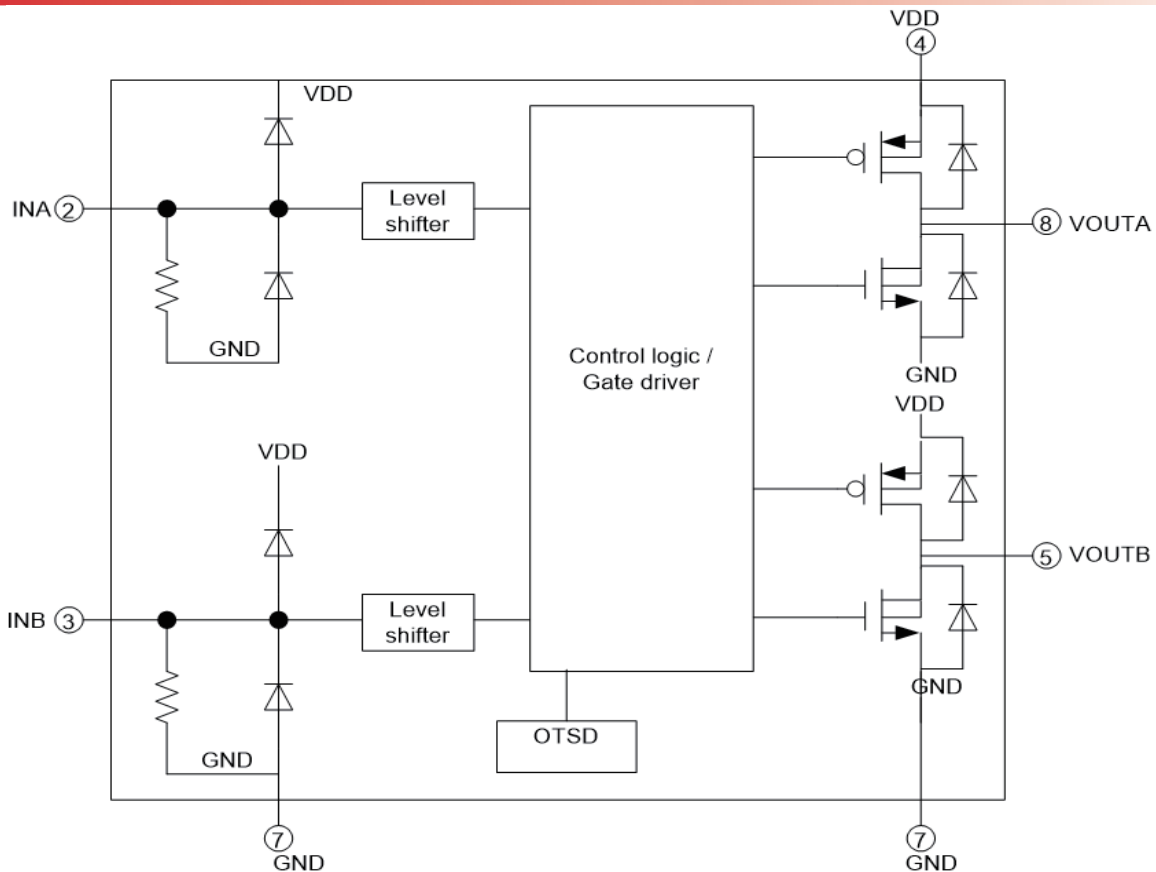
FEATURES

- ★ Wide operation voltage: VDD = 1.8V to 8.5V (2 to 5 AA or AAA batteries)
- ★ Low standby current : 0.1uA (typical) @ VDD=5V
- ★ Over-temperature protection(OTSD)
- ★ Low on resistance ~ 0.5ohm(SOP8)
- ★ ESD 8KV(HBM)

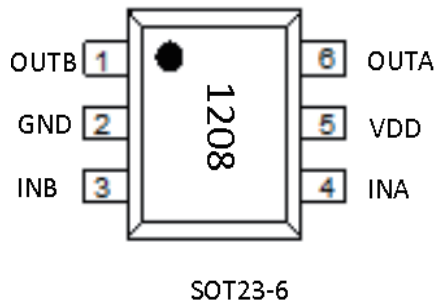
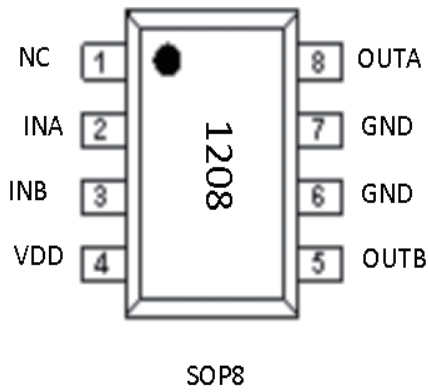
GENERAL DESCRIPTON

1208 is a single-channel DC motor driver designed by COMS technology. It integrates H bridge circuit inside. Through different input logic of two signal input terminals, It can realize four functions of motor including positive rotation, reverse rotation, brake and standby. Mainly for toys, electric toothbrush, intelligent lock and other consumer motor applications.

BLOCK DIAGRAMS



PIN ASSIGNMENT

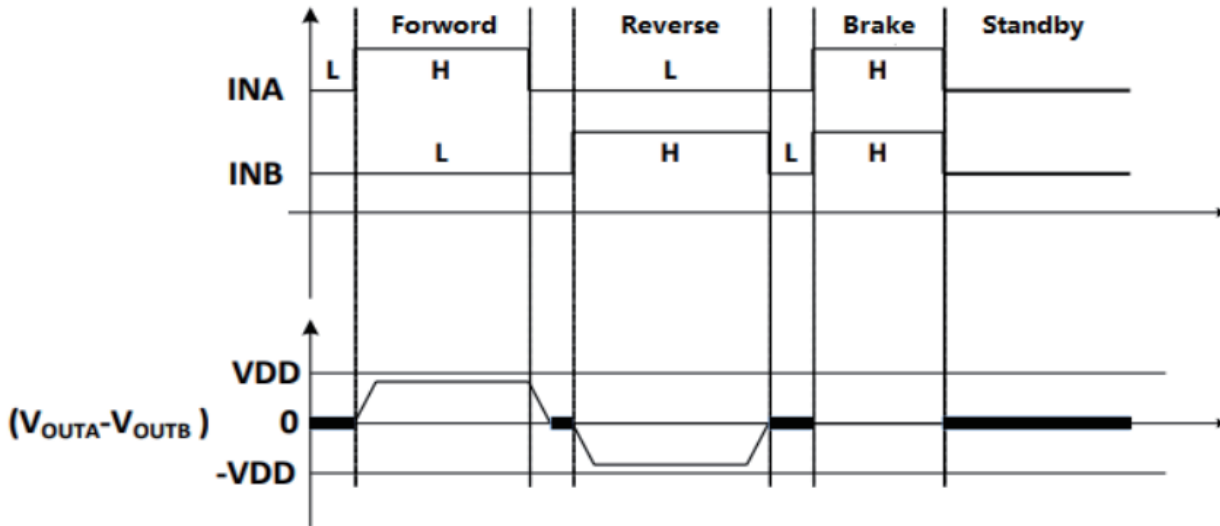


| PIN | SYMBOL | I/O | DESCRIPTION |
|-----|--------|-----|----------------|
| 1 | NC | | |
| 2 | INA | I | Signal input A |
| 3 | INB | I | Signal input B |
| 4 | VDD | --- | Power |
| 5 | OUTB | O | Output B |
| 6 | GND | --- | Ground |
| 7 | GND | --- | Ground |
| 8 | OUTA | O | Output A |
| PIN | SYMBOL | I/O | DESCRIPTION |
| 1 | OUTB | O | Output B |
| 2 | GND | --- | Ground |
| 3 | INB | I | Signal input B |
| 4 | INA | I | Signal input A |
| 5 | VDD | --- | Power |
| 6 | OUTA | O | Output A |

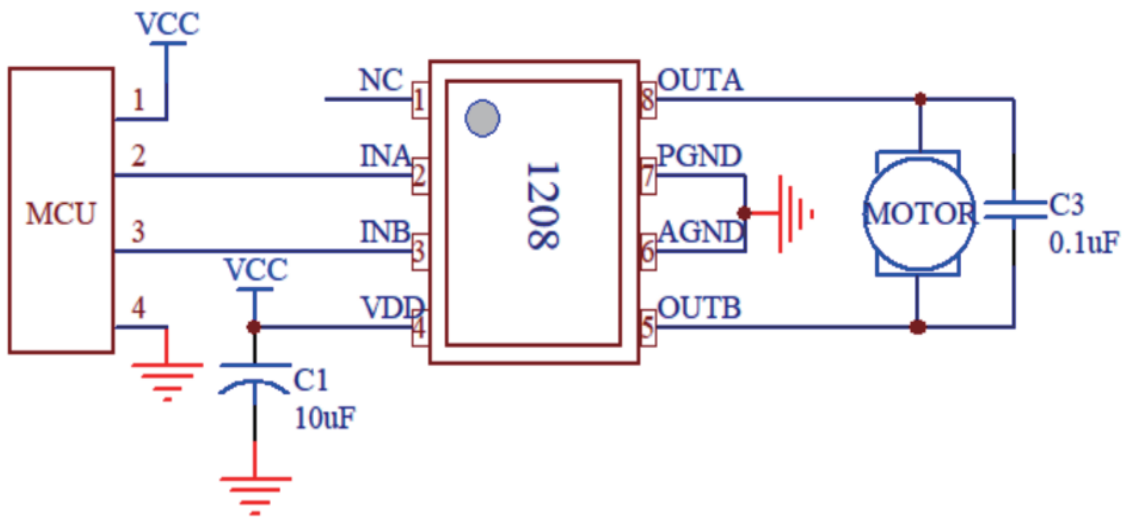
Diode Characteristics

| INA | INB | OUTA | OUTB | FUNCTION |
|-----|-----|------|------|----------|
| L | L | Hi-Z | Hi-Z | STANDBY |
| L | H | L | H | REVERSE |
| H | L | H | L | FORWARD |
| H | H | L | L | BRAKE |

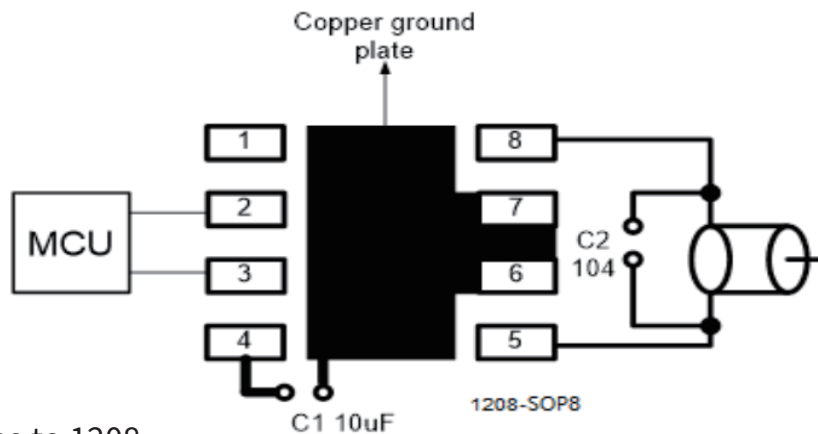
TYPICAL INPUT DIAGRAM



TYPICAL APPLICATION



LAYOUT GUIDELINE



*C1 must close to 1208

*C1 if the voltage is higher than 6V, electrolytic capacitor must be used (stepless SMD capacitor cannot be used)

*C2 must be welded directly to the motor

* Motor internal resistance must be greater than 1.8Ω

Absolute Maximum Ratings

| | SYMBOL | Condition | MAX | Unit |
|---------------------------------|--------|-----------|-----------------|------|
| Power supply | VDD | motor | 8.5 | V |
| Logic input voltage | | | VSS-0.3~VDD+0.3 | V |
| Power dissipation(S08C) | Pd | | 1.2 | W |
| Output peak current | Ipeak | | 3* | A |
| Continuous output current(S08C) | Icon | | 1.4 | A |
| Operation temperature | Top | | -20~60* | °C |

* The higher the ambient temperature, the lower the output continuous current

Note:

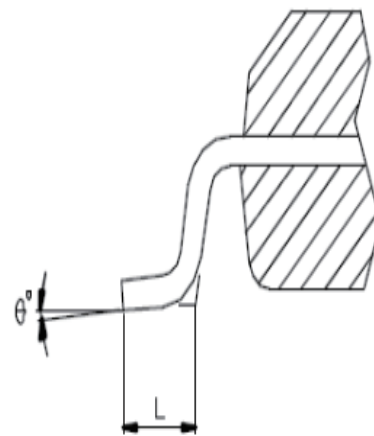
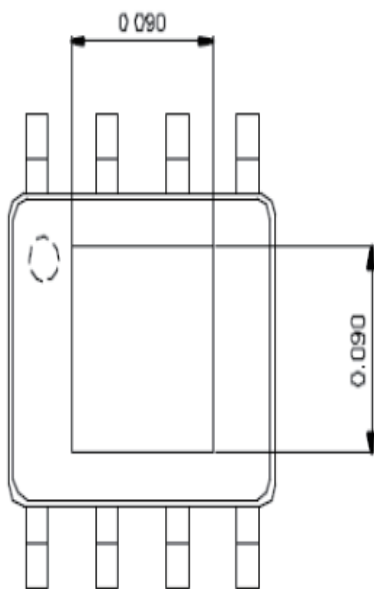
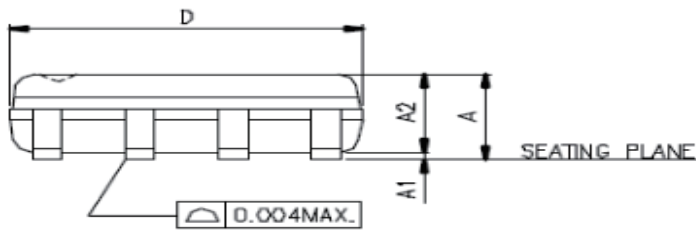
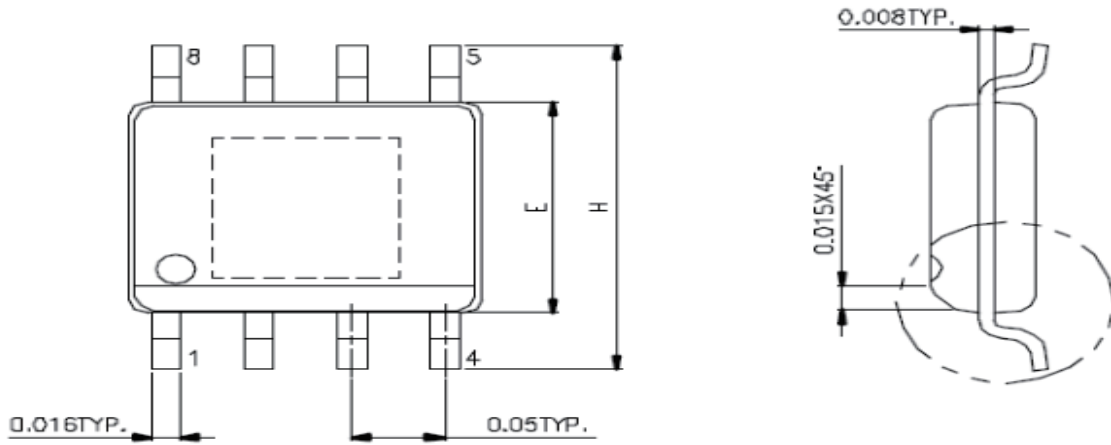
Motor lock-rotor has different peak current because of different motors. If the peak current of motor lock-rotor is too large, it may burn IC

Electrical Characteristics (VDD=6V, T=25°C)

| Symbol | Parameter | Test Condition | Min. | Typ. | Max. | Units |
|-------------------|------------------------------|---|------|------|------|-------|
| VDD | operation range | motor, -20 ~ 60 °C | 1.8 | - | 8.5 | V |
| I _{IM} | Input resistance | I _{NA} /I _{NB} , VDD=5V | - | 100 | - | KΩ |
| I _F | Input frequency | | - | 100 | - | Hz |
| I _{DD} | Input current | No load, Input = 5V | - | 500 | - | uA |
| I _{SB} | Standby current | standby mode I _{NA} =I _{NB} =0 > 10ms | - | 0.1 | 0.5 | uA |
| R _{on} | Output on resistance(S08C) | I _{LOAD} =1000mA | - | 0.5 | - | Ω |
| V _{ih} | Input logic high voltage | | - | 1.8 | - | V |
| V _{il} | Input logic low voltage | | - | 1 | - | V |
| T _{OTSD} | Thermal shutdown temperature | VDD=5V | - | 150 | - | °C |
| H _{OTSD} | Thermal shutdown hysteresis | | - | 70 | - | °C |

PACKAGE INFORMATION

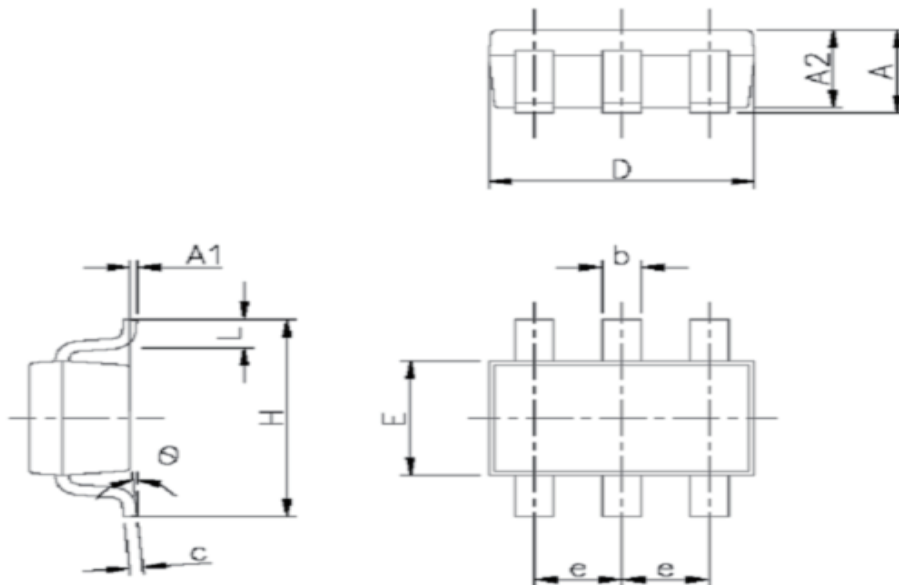
8-PIN SOP 150Mil



E.P. VERSION ONLY

| Symbols | Dimension In INCH | |
|----------------|-------------------|-----------|
| | Min. | Max. |
| A | 0.053 | 0.069 |
| A1 | 0.004 | 0.01 |
| A2 | - | 0.059 |
| D | 0.189 | 0.196 |
| E | 0.15 | 0.157 |
| H | 0.228 | 0.244 |
| L | 0.016 | 0.05 |
| θ° | 0° | 8° |

6PIN SOT23-6



| Dim. | mm. | | | inch | | |
|----------|------|------|------------|-------|-------|------------|
| | Min | Typ | Max | Min | Typ | Max |
| A | 0.9 | | 1.45 | 0.035 | | 0.057 |
| A1 | 0 | | 0.1 | 0 | | 0.0039 |
| A2 | 0.9 | | 1.3 | 0.035 | | 0.0512 |
| b | 0.35 | | 0.5 | 0.014 | | 0.02 |
| c | 0.09 | | 0.2 | 0.004 | | 0.008 |
| D | 2.8 | | 3.05 | 0.11 | | 0.120 |
| E | 1.5 | | 1.75 | 0.059 | | 0.0689 |
| e | | 0.95 | | | 0.037 | |
| H | 2.6 | | 3 | 0.102 | | 0.118 |
| L | 0.1 | | 0.6 | 0.004 | | 0.024 |
| θ | 0 | | 10° | 0 | | 10° |