# 6ch driver+3.3V/5V regulator for video-CD

# BA5800FS

## ●Description

The BA5800FS is a 6-channel BTL driver for the actuator and motor driver of a CD player. Three channels include internal filters which allow for direct coupling of the digital servo LSI PWM, without the need for any external components. It is compatible with many applications as it has a built-in 3.3V/5.0V regulator (external PNP transistor required)

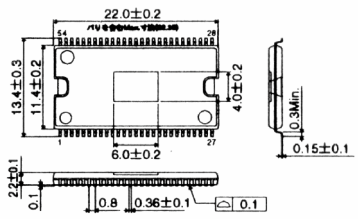
## ●Features

1) Built-in 6-channel BTL driver (2-channel loading driver), 3.3V and 5.0V regulator (requires external PNP transistor), and 2-channel independent op-amps.
2) 3-channel can be used to directly couple from PWM input type.
3) Op-amp included on one channel's input
4) Loading driver output can be determined by the voltage set up terminal
5) By separating Vcc into Pre and Power (Power divided into 4-channel and 2-channel loading driver) makes for improved power efficiency.
6) Internal mute circuit enables the muting of the driver outputs from all channels, except the loading driver and the regulator mute (3.3V/5V each)
7) Internal thermal protection circuit

## ●Applications

CD, Video-CD

## ●Dimension (Units : mm)




SSOP-A54

## ●Absolute Maximum Ratings (Ta=25˚C)

| Parameter | Symbol | Limits | Unit |
|---|---|---|---|
| Supply voltage | $V_{CC}$ | 18 | V |
| Power dissipation | Pd | 1.92 | W |
| Operating temperature range | Topr | –35 ~ +85 | ˚C |
| Storage temperature range | Tstg | –55 ~ +150 | ˚C |

Derating : 15.36mW/˚C for operation above Ta=25˚C.

## ●Recommended Operating Conditions (Ta=25˚C)

| Parameter | Symbol | Min. | Typ. | Max. | Unit |
|---|---|---|---|---|---|
| power supply voltage | $PreV_{CC}$ | 6 | — | 13.5 | V |
| | $PowV_{CC}$ | 6 | — | $PreV_{CC}$ | V |

## ●Electrical characteristics (Unless otherwise noted, Ta=25˚C, Vcc=8V, RL=8 )

| Parameter | | Symbol | Min. | Typ. | Max. | Unit | Conditions | |
|---|---|---|---|---|---|---|---|---|
| <Circuit current> | | | | | | | | |
| Quiescent current | | IQ | — | 28 | 38 | mA | No load | |
| <Driver CH1~CH3> | | | | | | | | |
| Maximum output voltage | FWD | VOMF | 4.4 | 5.0 | 5.6 | V | INF=H, INR=L | |
| | REV | VOMR | –5.6 | –5.0 | –4.4 | V | INF=L, INR=H | |
| Smooth time constant of output voltage wave | tr | Ttr | — | 2 | — | V/μS | Leading edge | |
| | tf | Ttf | — | 1.5 | — | V/μS | Trading edge | |
| <Spindle driver> | | | | | | | | |
| Maximum output voltage | | VOMS | 5.0 | 5.6 | — | V | | |
| Voltage gain | | GVC | 10 | 12 | 14 | dB | When Pre OP-AMP buffer connected. | |
| <Pre OP-AMP and OP-AMP> | | | | | | | | |
| Common mode input voltage | | VIM | 0 | — | PreVcc–2 | V | | |
| Maximum output voltage | HIGH | VOHOP | PreVcc –0.3 | PreVcc –0.1 | — | V | | |
| | LOW | VOLOP | — | 0.1 | 0.3 | V | | |
| Maximum output current | SOURCE | IOSO | 500 | 800 | — | μA | | |
| | SINK | IOSI | 1 | — | — | mA | | |
| <Loading driver> | | | | | | | | |
| Output voltage 1 | FWD | VOL1F | 2.4 | 3.0 | 3.6 | V | LDCONT=1.7V | LD INF =H, LDINR=L |
| | REV | VOL1R | –3.6 | –3.0 | –2.4 | V | | LD INF =L, LDINR=H |
| Output voltage 2 | FWD | VOL2F | 5.0 | 5.6 | — | V | LDCONT=4.5V | LD INF =H, LDINR=L |
| | REV | VOL2R | — | –5.6 | –5.0 | V | | LD INF =L, LDINR=H |
| Load regulation | | V LI1F | — | 100 | 500 | mV | LD CONT =1.7V IL=100~500mA | |
| | | V LI1R | — | 100 | 500 | mV | | |
| <Regulator 1> | | | | | | | | |
| Output voltage | | VREG | 4.75 | 5.0 | 5.25 | V | IL=50mA | |
| Load regulation | | VILR | –50 | 0 | +20 | mV | IL=0~200mA | |
| Supply voltage regulation | | VVSR | –20 | 0 | +50 | mV | Vcc=6~13V | |
| <Regulator 2> | | | | | | | | |
| Output voltage | | VREG | 3.15 | 3.3 | 3.45 | V | IL=50mA | |
| Load regulation | | VILR | –50 | 0 | +20 | mV | IL=0~200mA | |
| Supply voltage regulation | | VVSR | –20 | 0 | +50 | mV | Vcc=4.5~13V | |

※This product is not designed for protection against radioactive rays.

## ●Application circuit