

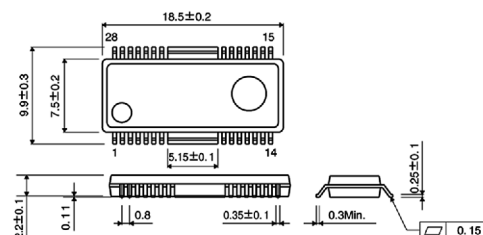
## 5 Channel Drivers/Regulator for car Mini Disk

### BA5813FM

#### ●Description

The BA5813FM is a 5-channel driver including a 4-channel BTL driver and a 1-channel reversible motor driver and regulator for car applications. Separating the Vcc into Pre and Pow can make the unit morepower efficient.

#### ●Dimension (Units : mm)



#### ●Features

- 1) Wide dynamic range  
(4.0V typical at PreVcc=8V, PowVcc=5V)
- 2) The loading output voltage is adjustable by the voltage control terminal.
- 3) Variable regulator built-in
- 4) Thermal shut down circuit built-in
- 5) Small surface mount power package HSOP-M28

HSOP-M28

#### ●Applications

MD

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

| Parameter                   | Symbol         | Limits     | Unit |
|-----------------------------|----------------|------------|------|
| Power supply voltage        | PREVcc, POWVcc | 13.5       | V    |
| Power dissipation           | Pd             | 2.2        | W    |
| Operating temperature range | Topr           | -40 ~ +85  | °C   |
| Storage temperature range   | Tstg           | -55 ~ +150 | °C   |

Derating : 17.6mV/°C for operation above Ta=25°C.

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

● Guaranteed operating ranges ( $T_a=25^{\circ}\text{C}$ )

| Parameter            | Symbol | Min. | Typ. | Max.   | Unit |
|----------------------|--------|------|------|--------|------|
| Power supply voltage | PREVcc | 4.3  | —    | 13.2   | V    |
|                      | POWVcc | 4.3  | —    | PREVcc | V    |

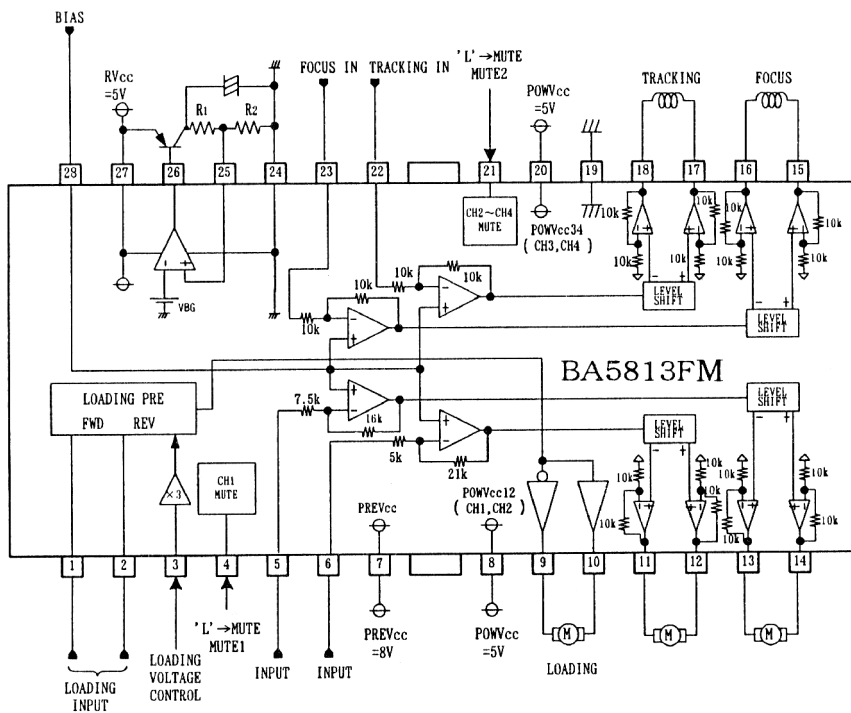
## ●Electrical characteristics

(Unless otherwise noted,  $T_a=25^{\circ}\text{C}$ ,  $\text{PREV}_{\text{CC}}=\text{RV}_{\text{CC}}=8\text{V}$ ,  $\text{POWV}_{\text{CC}1,2}=5\text{V}$ ,  $\text{BIAS}=1.65\text{V}$ ,  $\text{R}_{\text{L}}=8\ \Omega$  )

| Parameter                                  | Symbol              | Min. | Typ. | Max. | Unit | Conditions                            |
|--------------------------------------------|---------------------|------|------|------|------|---------------------------------------|
| Quiescent current                          | I <sub>CC</sub>     | —    | 17   | 23   | mA   | No load                               |
| <BTL driver>                               |                     |      |      |      |      |                                       |
| Output offset voltage                      | V <sub>OO</sub>     | −50  | 0    | 50   | mV   |                                       |
| Maximum output voltage                     | V <sub>OM</sub>     | 3.6  | 4.0  | —    | V    |                                       |
| Closed loop voltage gain (CH1)             | G <sub>VC1</sub>    | 16.2 | 18.0 | 19.8 | dB   |                                       |
| Closed loop voltage gain (CH2)             | G <sub>VC2</sub>    | 22.7 | 24.5 | 26.3 | dB   |                                       |
| Closed loop voltage gain (CH3, 4)          | G <sub>VC3</sub>    | 10.5 | 12.0 | 13.5 | dB   |                                       |
| <Regulator>                                |                     |      |      |      |      |                                       |
| Threshold voltage of REG-P pin             | V <sub>REGPTH</sub> | 1.14 | 1.20 | 1.26 | V    |                                       |
| Output sink current of REG-B pin           | I <sub>SIN</sub>    | 10   | —    | —    | mA   |                                       |
| Input bias current of REG-P pin            | I <sub>BOP</sub>    | —    | 20   | 300  | nA   |                                       |
| <Loading driver>                           |                     |      |      |      |      |                                       |
| Output saturation voltage 1                | V <sub>SAT1</sub>   | 0.7  | 1.1  | 1.5  | V    | I <sub>L</sub> =200mA (Upper + Lower) |
| Output adjustable gain on "H" side voltage | G <sub>VH</sub>     | 7.4  | 9.2  | 11.0 | dB   | "H" side output for GND               |

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

- Application circuit



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