

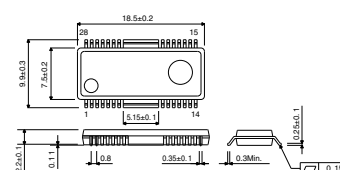
## 4-channel BTL driver for car CD players

### BA5993FP

#### ●Description

The BA5993P incorporates 4-channel drivers that operate the motor and actuator for car CD players. CH1, 2, and CH3, 4 each have power supply independently. The highly efficient drive can be achieved due to the low voltage operation.

#### ●Dimension (Units : mm)



HSOP28

#### ●Features

- 1) Built-in 3.3V regulator
- 2) Built-in standard operational amplifier
- 3) Built-in mute function  
3 lines (CH1,2, CH3 and CH4)
- 4) Reference voltage can be changed into external input voltage and internal voltage.
- 5) Built-in thermal shut down circuit

#### ●Applications

Car CD players

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

Parameter	Symbol	Limits	Unit
Power supply voltage	Vcc	18	V
Power dissipation	Pd	1700	mW
Operating temperature range	Topr	-35 ~ +85	°C
Storage temperature range	Tstg	-55 ~ +150	°C

Derating : 13.6mW/°C for operation above Ta=25°C

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

Parameter	Symbol	Min.	Typ.	Max.	Unit
Power supply voltage	Vcc	6	—	14	V

(When the regulator is not used ; 4.5~14V)

● Electrical characteristics

(Unless otherwise noted;  $T_a=25^{\circ}\text{C}$ ,  $V_{cc}=8\text{V}$ ,  $\text{BIAS}=1.65\text{V}$ ,  $R_L=8$ )

Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions
Current consumption (No signal)	$I_Q$	—	15	23	mA	
Output offset voltage	$V_{oof}$	-50	0	50	mV	
Maximum output voltage (CH1,2)	$V_{OM1}$	5.0	5.6	—	V	
Maximum output voltage (CH3,4)	$V_{OM2}$	5.7	6.3	—	V	
Voltage gain (CH1,2,3)	$G_{vc1}$	15.5	17.5	19.5	dB	$V_{IN}=\pm 0.5\text{V}$ , $\text{BCONT}='H'$
Voltage gain (CH4)	$G_{vc4}$	21.5	23.5	25.5	dB	$V_{IN}=\pm 0.2\text{V}$ , $\text{BCONT}='H'$
		15.5	17.5	19.5	dB	$V_{IN}=\pm 0.2\text{V}$ , $\text{BCONT}='L'$
Regulator output voltage	$V_{REG}$	3.0	3.3	3.6	V	$I_{REG}=25\text{mA}$
Op-amp. offset voltage	$V_{OFOP}$	-6	0	6	mV	
Op-amp. high level voltage	$V_{OHOP}$	7.5	7.9	—	V	
Op-amp. low level voltage	$V_{OLOP}$	—	0.1	0.3	V	

● Application Circuit

