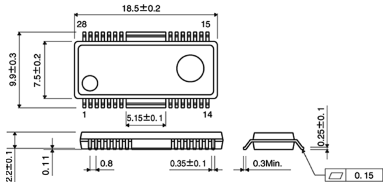
4-Channel BTL driver
BA5994FM

● Description

The BA5994FM is a 4-channel BTL driver for an actuator and motor driver of CD/CD-ROM. (Inputs for the driver connect to an operational amplifier and it is compatible with various applications.)
Channel 2&3 include a short-brake function.

● Dimension (Units:mm)



HSOP-M28

● Features

1) 4-channel BTL driver
2) Wide dynamic range (4V typical at PreVcc=12V, PowVcc=5V, RL=8Ω)
3) Built-in thermal shut down circuit
4) Separating Vcc into Pre and Power (Power divides into Channel1&2 and Channel 3&4) makes for improved power efficiency, by a lower supply voltage drive
5) Mute operated individually with Channel 4 and Channel 1&2&3
6) All channels are mute in standby mode
7) Suitable for low operation voltage DSP by wide dynamic range pre operational amplifier.
8) Built-in short-brake circuit (Channel 2&3)

● Applications

CD, CD-ROM

● Absolute Maximum Ratings (Ta=25˚C)

Parameter	Symbol	Limits	Unit
Supply voltage	PREVcc, POWVcc	13.5	V
Power dissipation	Pd	2.2 *1	W
Output current	I_{OMAX}	1 *2	A
Operating temperature range	Topr	-35 ~ +85	˚C
Storage temperature rang	Tstg	-55 ~ +150	˚C

*1 On less than 3% (percentage occupied by copper foil), 70mm× 70mm, t=1.6mm, glass epoxy mounting.
Derating: 17.6mW/˚C for operation above Ta=25˚C
*2 The output current must not exceed the maximum ASO.

●Recommended Operating Conditions (Ta=25˚C)

Parameter	Symbol	Min.	Typ.	Max.	Unit
Supply voltage	$PREV_{CC}$	4.5	-	13.2	V
	$POWV_{CC}$	4.5	-	$PREV_{CC}$	V

●Electrical characteristics

(Unless otherwise noted, Ta=25˚C, PreVcc=12V, PowVcc1=5V, PowVcc2=5V, V_{BIAS}=1.65, V_{RL}=8)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions
Quiescent current	IQ	-	20	30	mA	No load
All Channel Standby Current	IQST3	-	-	1	mA	No load (Pre circuit current)
<Driver block>						
Output offset voltage	VOOF	70	0	70	mV	
Maximum output voltage 1	VOM1	3.6	4.0	-	V	CH1, 2 VIN=V_{BIAS} 1.65V
Maximum output voltage 2	VOM2	7.5	9	-	V	CH3, 4 VIN=V_{BIAS} 1.65V*
Closed loop voltage gain 1	GVC1	10	12	14	dB	CH1, 2 VIN=V_{BIAS} 0.5V
Closed loop voltage gain 2	GVC2	16	18	20	dB	CH3, 4 VIN=V_{BIAS} 0.5V*
<Pre operational amplifier>						
Input offset voltage	VOFOP	6	0	6	mV	
Input bias current	VBOP	-	-	300	nA	
High level output voltage	VOHOP	9	11	-	V	V_{BIAS}=6V
Low level output voltage	VOLOP	-	-	0.3	V	V_{BIAS}=6V
Output sink current	ISI	1	-	-	mA	Output to PreVcc by 50 ,V_{BIAS}=6V
Output source current	ISO	300	500	-	A	Output to GND by 50 ,V_{BIAS}=6V

○This product is not designed for protection against radioactive rays. * PowVcc1=PowVcc2=12V

●Application circuit