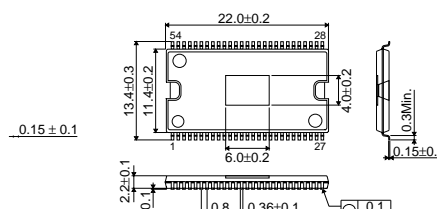


## 6-channel Driver with 3.3V Regulator BA5801FS

### ● Description

The BA5801FS 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 output, without the need for any external components. Since power supply terminals of 2-channel Loading driver are separated, It can be operated by only Loading driver.

### ● Dimension (Units:mm)



SSOP-A54

### ● Features

- 1) 6-channel BTL driver (2-channels Loading Driver.) includes 3.3V regulator (PNP-Tr is needed outside.)
- 2) Three channels include internal filters which allow for direct coupling of PWM output.
- 3) Filter constant can be variable by external RC.
- 4) 1-channel includes operational amplifier (input)
- 5) Loading driver can be operated by only LDVcc(Pin.51, Isolated power supply) since its structure is different from other blocks.
- 6) Loading driver output can be set up by voltage establishment terminal.
- 7) By separating Vcc into Pre and Power makes for improved power efficiency.
- 8) Driver mute function(4-channels except loading and regulator mute)
- 9) Thermal protection circuit built-in

### ● Applications

CD, Video-CD

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

Parameter	Symbol	Limits	Unit
Supply voltage	V <sub>CC</sub>	18	V
Power dissipation	P <sub>d</sub>	1.92 *	W
Operating temperature range	T <sub>opr</sub>	-35 ~ +85	°C
Storage temperature range	T <sub>stg</sub>	-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	PreVcc	6	—	13.5	V
	LDVcc	4.5	—	13.5	V
	PowVcc	6	—	PreVcc	V

● Electrical characteristics (Unless otherwise noted, Ta=25°C, Vcc=8V, R<sub>L</sub>=8Ω)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions		
<Circuit current>								
Quiescent current ( Pre )	I <sub>Q</sub>	–	28	38	mA	No load, LDVCC=0V		
Quiescent current (Loading)	I <sub>QLD</sub>	–	5	13	mA	No load, VCC=PowVCC=0V		
<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	t <sub>r</sub>	T <sub>tr</sub>	–	2	–	V/μS	Leading edge	
	t <sub>f</sub>	T <sub>tf</sub>	–	1.5	–	V/μS	Trading edge	
<Spindle Driver>								
Maximum output voltage	VOMS	5.0	5.6	–	V			
Voltage gain	GVC	10	12	14	dB			
<Spindle pre OP-AMP>								
Common mode input voltage range	V <sub>ICM</sub>	0	–	PreVcc	V			
Output voltage range	HIGH	V <sub>OHOP</sub>	PreVcc	PreVcc	–	V		
	LOW	V <sub>OLOP</sub>	–	0.1	0.3	V		
Maximum output current	SOURCE	I <sub>OSO</sub>	500	800	–	μA		
	SINK	I <sub>OSI</sub>	1	–	–	mA		
<Loading Driver>								
Output voltage 1 (Setting time)	FWD	V <sub>OL1F</sub>	2.4	3.0	3.6	V	LDCONT=1.7V	LDINF=H, LDINR=L
	REV	V <sub>OL1R</sub>	-3.6	-3.0	-2.4	V		LDINF=L, LDINR=H
Output voltage 2 (Maximum)	FWD	V <sub>OL2F</sub>	5.0	5.6	–	V	LDCONT=4.5V	LDINF=H, LDINR=L
	REV	V <sub>OL2R</sub>	–	-5.6	-5.0	V		LDINF=L, LDINR=H
Load regulation 1	FWD	ΔV <sub>OL1F</sub>	–	100	500	mV	LDCONT=1.7V	IL=100~500mA
	REV	ΔV <sub>OL1R</sub>	–	100	500	mV		
<Regulator>								
Output voltage	V <sub>REG</sub>	3.15	3.3	3.45	V	I <sub>L</sub> =50mA		
Load regulation	ΔV <sub>ILR</sub>	-50	0	20	mV	I <sub>L</sub> =0~200mA		
Line regulation	ΔV <sub>VSR</sub>	-20	0	50	mV	Vcc=6~13V		

● Application circuit

