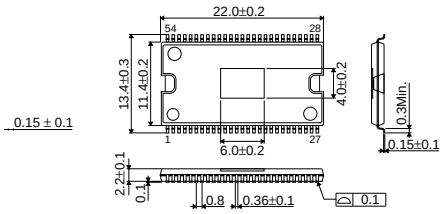
6-channel Driver with 3.3V Regulator
BA5801FS

● 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_{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	PreVcc	6	—	13.5	V
	LDVcc	4.5	—	13.5	V
	PowVcc	6	—	PreVcc	V

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● Electrical characteristics (Unless otherwise noted, Ta=25˚C, Vcc=8V, R L=8Ω)

Parameter		Symbol	Min.	Typ.	Max.	Unit	Conditions	
<Circuit current>								
Quiescent current (Pre)		IQ	–	28	38	mA	No load, LDVCC=0V	
Quiescent current (Loading)		IQLD	–	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	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		
<Spindle pre OP-AMP>								
Common mode input voltage range		VICM	0	–	PreVcc –2	V		
Output voltage range	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 (Setting time)	FWD	VOL1F	2.4	3.0	3.6	V	LDCONT=1.7V	LDINF=H, LDINR=L
	REV	VOL1R	–3.6	–3.0	–2.4	V		LDINF=L, LDINR=H
Output voltage 2 (Maximum)	FWD	VOL2F	5.0	5.6	–	V	LDCONT=4.5V	LDINF=H, LDINR=L
	REV	VOL2R	–	–5.6	–5.0	V		LDINF=L, LDINR=H
Load regulation 1	FWD	ΔVOL1F	–	100	500	mV	LDCONT=1.7V IL=100~500mA	
	REV	ΔVOL1R	–	100	500	mV		
<Regulator>								
Output voltage		VREG	3.15	3.3	3.45	V	IL=50mA	
Load regulation		ΔV ILR	–50	0	20	mV	IL=0~200mA	
Line regulation		ΔVVSR	–20	0	50	mV	Vcc=6~13V	

● Application circuit