

5 Channel Driver for with Regulator **BA5960FS**

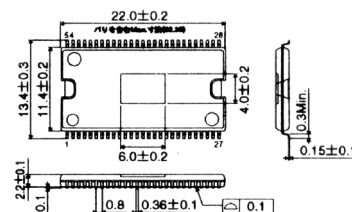
●Description

The BA5960FS is a 5-channel Driver (4-channel BTL and 1-channel Loading driver) for an actuator and motor. Since the operational amplifier and variable regulator are built-in, it can be compatible with various applications.

●Features

- 1) 5-channel driver (4-channel BTL driver and 1-channel Loading driver)
- 2) Built-in thermal shut down circuit
- 3) The power supply is divided in 4 systems
- 4) Incorporates an operational amplifier.
- 5) Built-in stand-by function
- 6) Built-in variable regulator
- 7) Wide dynamic range
(5.4V typical at PreVcc=8V, PowVcc=8V, RL=8)
- 8) Mute operated individually Channel-1&2, Channel-3, Channel-4
- 9) Input pins consist of (+) and (-), therefore various input types are available such as differential input.
- 10) Built-in brake function (Loading driver)
- 11) Output voltage can be set up by voltage establishment terminal.

●Dimension (Units : mm)



SSOP-A54

●Applications

Car CD, MD

●Absolute Maximum Ratings (Ta=25°C)

Parameter	Symbol	Limits	Unit
Supply voltage	PreVcc, PowVcc	18	V
Powerd dissipation	Pd	1.92 ¹	W
Output current	IOMAX	1 ²	A
Operating temperature range	Topr	-35 ~ +85	°C
Storage temperature range	Tstg	-55 ~ +150	°C

¹ Derating : 15.36mW/°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	PreVcc	4.5	—	13.5	V
	PowVcc	4.5	—	PreVcc	V

● Electrical characteristics

(Unless otherwise noted, Ta=25°C, PreVcc=PowVcc1=PowVcc2=PowVcc3=8V, BIAS=1.65V, RL=8 Ω)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions	
Standby current (VCC+PowVcc)	IqST	—	—	1	mA	No load	
Quiescent current	Iq	—	22	30	mA	No load	
<BTL driver>							
Close loop gain	Gvc	10	11.5	14	dB	VIN=BIAS±0.5V	
Maximum output voltage	VOM	4.8	5.4	—	V	VIN=BIAS±1.65V	
Output offset voltage	VOO	-50	0	50	mV		
<Pre-operational amplifier & Operational amplifier>							
Input bias current	IB	—	—	0.3	μA		
Output offset voltage	VOP	-6	0	6	mV		
High level output voltage HI	VOH	7.5	—	—	V	BIAS=2.5V	
Low level output voltage LO	VOL	—	—	0.5	V	BIAS=2.5V	
Output sink current	ISO	1	—	—	mA		
Output source current	ISI	0.5	0.8	—	mA		
<Loading driver>							
Close loop gain	LDGVC	9	11	13	dB	LDCONT=1V	
Output voltage	FWD	VOL12F	4.8	5.4	—	V	LDCONT=4.5V
	REV	VOL2R	—	-5.4	-4.8		
Load regulation	FWD	VLI2F	—	0.45	0.9	V	LDCONT=4.5V VIL=100~500mA
	REV	VLI2R	—	0.45	0.9		
Line regulation	FWD	VLVSF	-0.5	—	0.5	V	Vcc=6~13V VIL=500mA LDCONT=1V
	REV	VLVSR	-0.5	—	0.5		
Output offset voltage	LDVOO	-50	0	50	mV	Brake mode	
<Regulator>							
Output voltage	Vreg	—	3.32	—	V	IL=50mA, Note) reference value	
Load regulation	VRL	-40	0	20	mV	IL=0~200mA, 3.3V set up	
Line regulation	VVCC	-20	10	40	mV	Vcc=6~13V, 3.3V set up	
REG.P pin voltage	VREGP	1.14	1.2	1.26	V		

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

● Application circuit

