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2-channel BTL driver for CD players

BA6792FP / BA6792FP-Y

The BA6792FP and BA6792FP-Y are 2-channel BTL drivers for CD player actuator drives. HSOP 28 and 25-pin packages allow for compact applications.

●Applications

CD players and CD-ROM drives

●Features

- 1) 2 channel dedicated BTL drivers.
- 2) HSOP 28 and 25-pin power packages for compact applications.
- 3) Gain is adjustable with an attached resistor.
- 4) Internal thermal shutdown circuit.

●Absolute maximum ratings (Ta = 25°C)

Parameter		Symbol	Limits	Unit
Power supply voltage		Vcc	18	V
Power dissipation	BA6792FP	Pd	1700*1	mW
	BA6792FP-Y		1450*2	
Operating temperature		Topr	-35~+85	°C
Storage temperature		Tstg	-55~+150	°C

*1. When mounted on a 50 mm × 50 mm × 1 mm paper phenol PCB board.

Reduced by 13.6 mW for each increase in Ta of 1°C over 25°C.

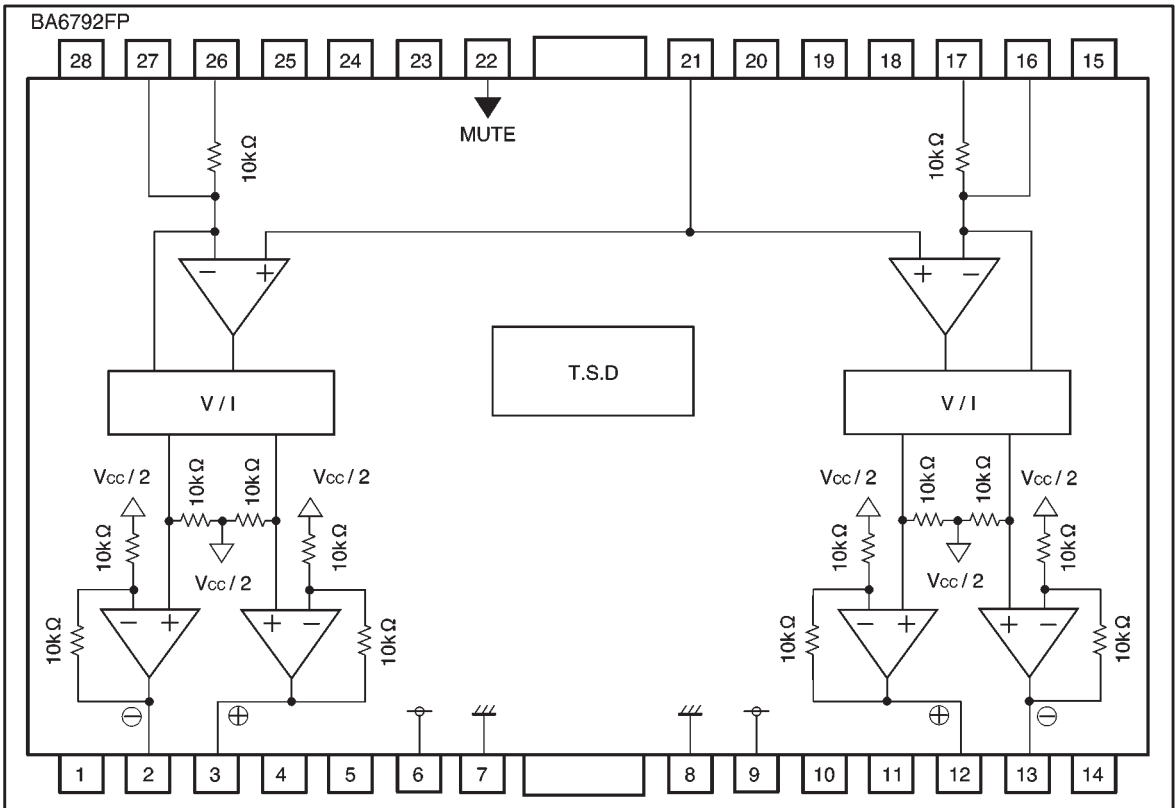
*2. When mounted on a 50 mm × 50 mm × 1 mm paper phenol PCB board.

Reduced by 11.6 mW for each increase in Ta of 1°C over 25°C.

●Recommended operating conditions (Ta = 25°C)

Parameter	Symbol	Min.	Typ.	Max.	Unit
Power supply voltage	Vcc	4.5	—	13.5	V

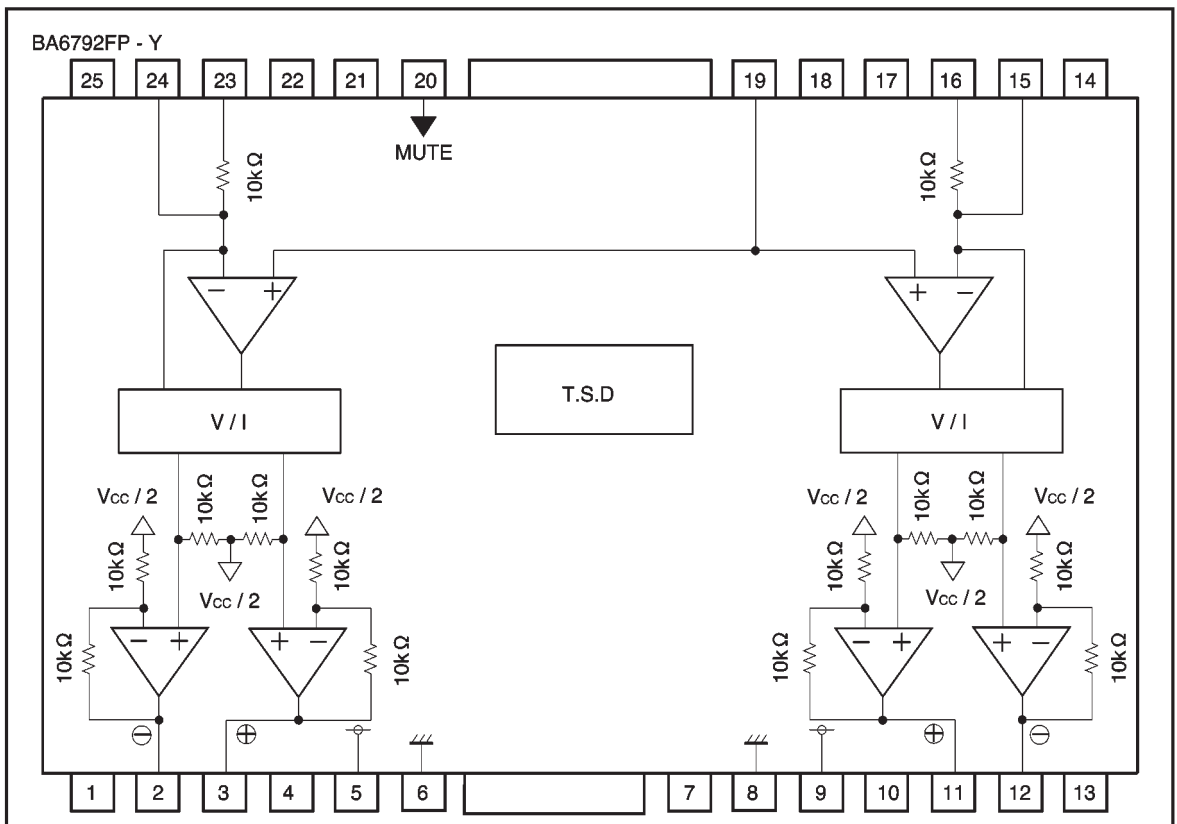
● Block diagram



● Pin descriptions (BA6792FP)

Pin No.	Pin name	Function	Pin No.	Pin name	Function
1	N.C.	—	15	N.C.	—
2	OUT ₁ -	Channel 1 negative output	16	IN ₂ '	Channel 2 gain adjustment input
3	OUT ₁ +	Channel 1 positive output	17	IN ₂	Channel 2 gain fixing input
4	N.C.	—	18	N.C.	—
5	N.C.	—	19	N.C.	—
6	V _{cc}	V _{cc}	20	N.C.	—
7	GND	Substrate ground	21	BIAS	Bias input
8	GND	Substrate ground	22	MUTE	Muting
9	V _{cc}	V _{cc}	23	N.C.	—
10	N.C.	—	24	N.C.	—
11	N.C.	—	25	N.C.	—
12	OUT ₂ +	Channel 2 positive output	26	IN ₁	Channel 1 gain fixing input
13	OUT ₂ -	Channel 2 negative output	27	IN ₁ '	Channel 1 gain adjusting input
14	N.C.	—	28	N.C.	—

* Positive output and negative output is relative to the polarity of the input pins.



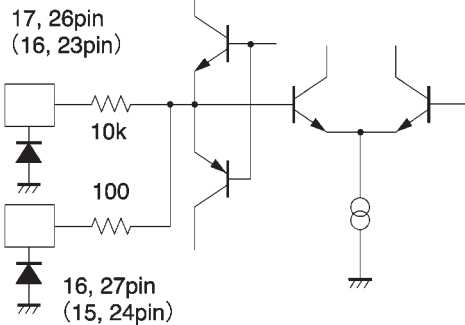
● Pin descriptions (BA6792FP - Y)

Pin No.	Pin name	Function	Pin No.	Pin name	Function
1	N.C.	—	14	N.C.	—
2	OUT1—	Channel 1 negative output	15	IN2'	Channel 2 gain adjustment input
3	OUT1+	Channel 1 positive output	16	IN2	Channel 2 gain fixing input
4	N.C.	—	17	N.C.	—
5	Vcc	Vcc	18	N.C.	—
6	GND	Substrate ground	19	BIAS	Bias input
7	N.C.	—	20	MUTE	Muting
8	GND	Substrate ground	21	N.C.	—
9	Vcc	Vcc	22	N.C.	—
10	N.C.	—	23	IN1	Channel 1 gain fixing input
11	OUT2+	Channel 2 positive output	24	IN1'	Channel 1 gain adjusting input
12	OUT2—	Channel 2 negative output	25	N.C.	—
13	N.C.	—			

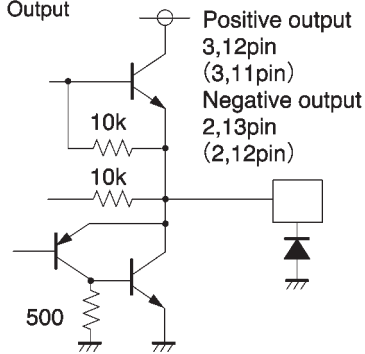
* Positive output and negative output is relative to polarity of the input pins.

● Pin equivalent circuit diagrams

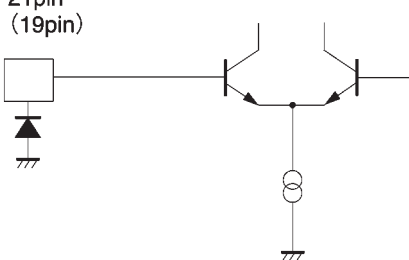
Driver Input



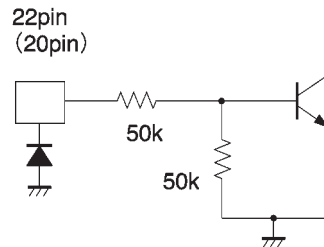
Driver Output



Bias



Mute



() BA6792FP-Y Pin no.

● Electrical characteristics (unless otherwise noted, $T_a = 25^\circ\text{C}$, $V_{CC} = 8\text{V}$, $f = 1\text{KHz}$, $R_L = 8\Omega$)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions
Quiescent current dissipation	I_{CC}	—	4.5	7.5	mA	No load
Output offset voltage	V_{OO}	-50	0	50	mV	—
Maximum output amplitude 1	VOM1	5.0	5.5	—	V	—
Maximum output amplitude 2	VOM2	2.7	3.0	—	V	$V_{CC}=5\text{V}$
Closed loop voltage gain	G_{VC}	10.5	12.0	13.5	dB	$V_{IN}=\text{BIAS}\pm 0.5\text{V}$
Ripple rejection	RR	—	60	—	dB	$V_{IN}=0.1\text{Vrms}, 100\text{Hz}$
Slew rate	SR	—	2.0	—	$\text{V} / \mu\text{s}$	100 kHz square wave, 3 V_{P-P} output
Mute-on voltage	VMON	GND	—	0.5	V	—
Mute-off voltage	VMOFF	2.0	—	V_{CC}	V	—

© Not designed for radiation resistance.

● Measurement circuit

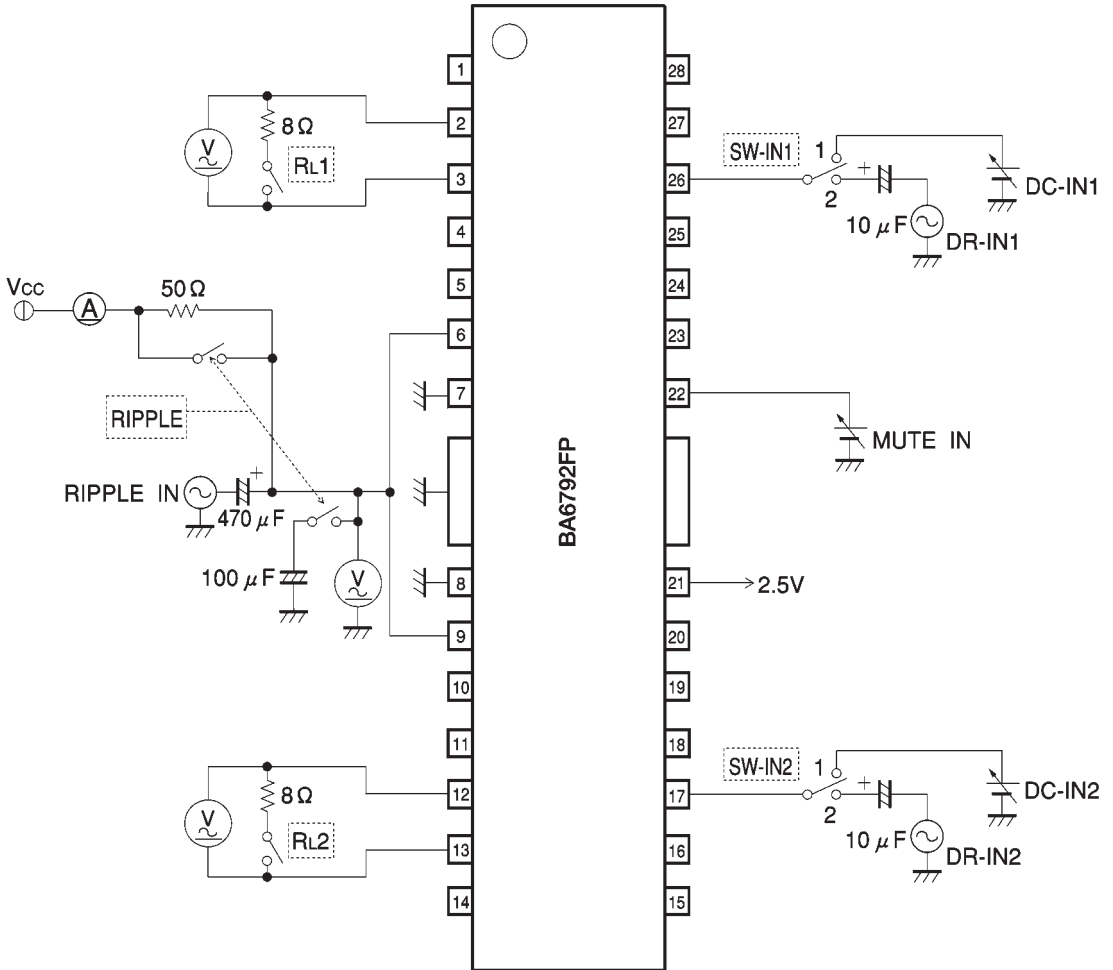


Fig.1

●Application example (BA6792FP)

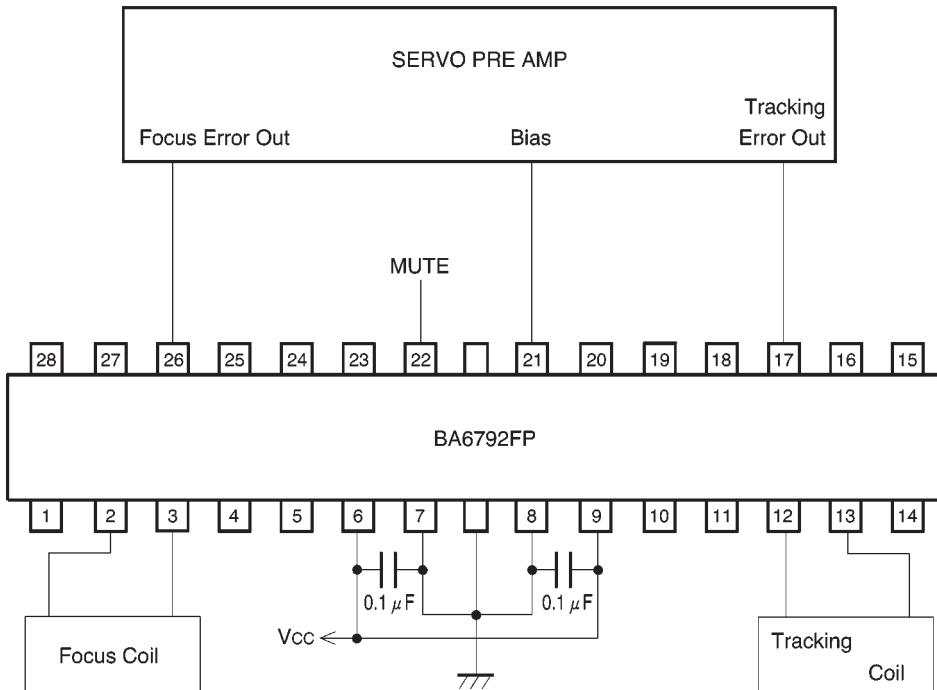


Fig. 2

●Operation notes

(1) The BA6792FP and BA6792FP-Y have an internal thermal shutdown circuit. The output current is muted when the chip temperature rises above 175°C (typically). The driver circuit is restored when the chip temperature rises above 150°C (typically).

(2) The output current can be muted by opening the mute pin voltage or lowering it below 0.5V. This pin should be pulled up above 2.0V during normal operation.

(3) Muting also occurs when the bias pin voltage drops below 1.4V (typically). This pin should stay above 2.0V during normal operation.

(4) Muting occurs during thermal shutdown, mute-on operations or a drop in the bias pin voltage. In each case, only the drivers are muted. During muting, the output pins remain at the internal bias voltage, roughly $(V_{CC} / 2)$.

(5) Attach a bypass capacitor (roughly 0.1 μF) between the power supplies, at the base of the IC.

(6) The radiating fin is connected to the package's internal GND, but should also be connected to an external ground.

●Electrical characteristic curves

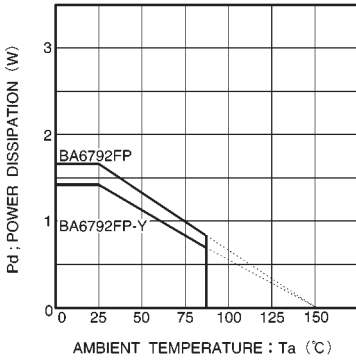


Fig. 3 Thermal derating curve

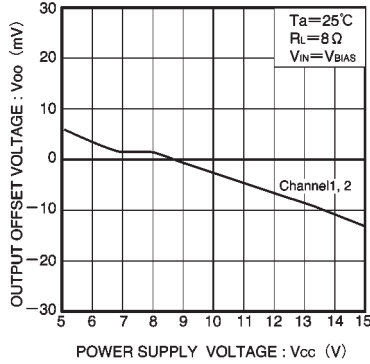


Fig. 4 Power supply voltage vs. output offset voltage

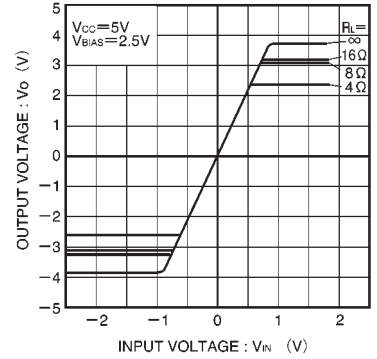


Fig. 5 Input and output characteristics (Vcc = 5V, variable load)

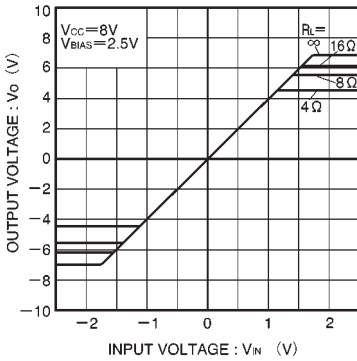


Fig. 6 Input and output characteristics (Vcc = 8V, variable load)

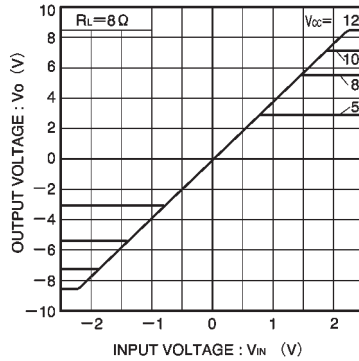
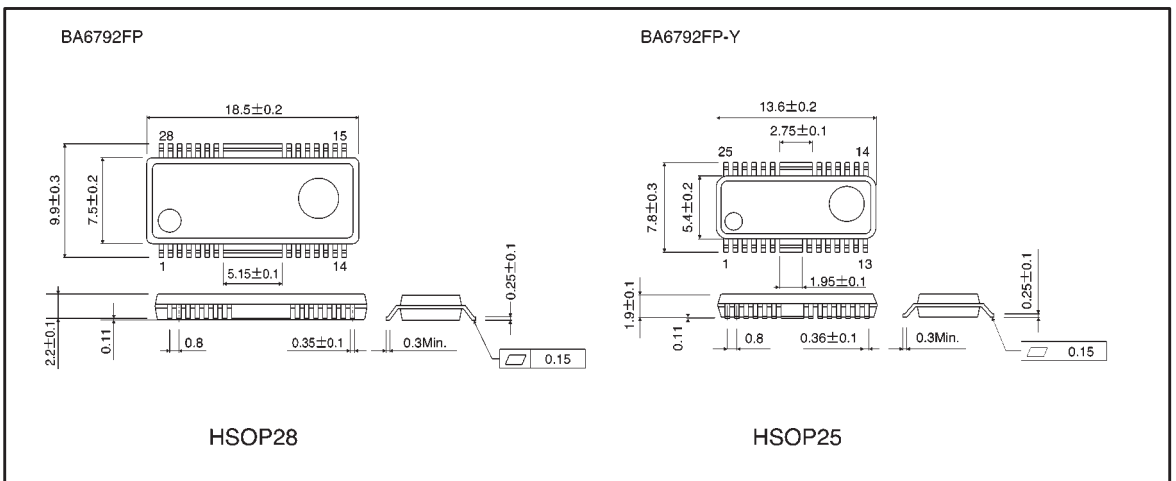


Fig. 7 Input and output characteristics (variable Vcc)

●External dimensions (Units: mm)



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