

2-channel BTL driver for CD players

BA6792FP/BA6792FP-Y

The BA6792FP and BA6792FP-Y are two-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	V _{cc}	18	V
Power dissipation	BA6792FP	1700*1	mW
	BA6792FP-Y	1450*2	
Operating temperature	T _{opr}	-35~85	°C
Storage temperature	T _{stg}	-55~150	°C

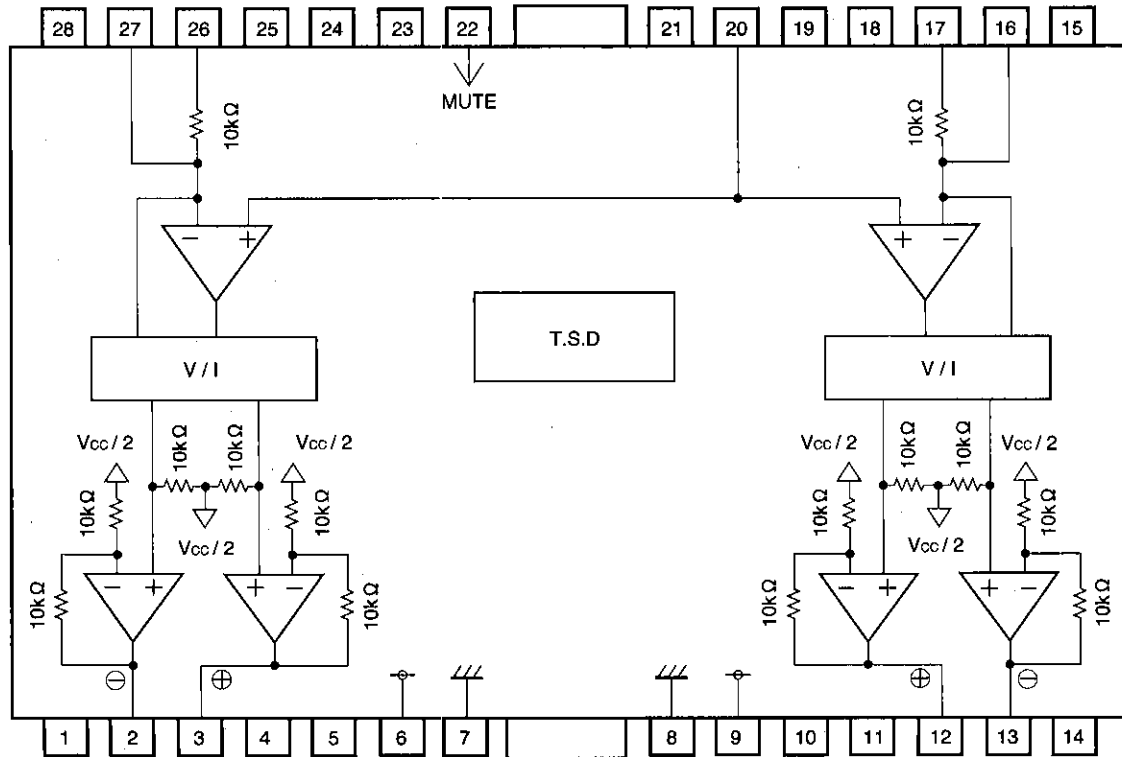
*1. When mounted to a 50 mm × 50 mm × 1 mm paper phenol PCB board.
Reduced by 13.6 mW for each increase in Ta of 1°C over 25°C.

*2. When mounted to a 50 mm × 50 × 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	V _{cc}	4.5	—	13.5	V

●Block diagram
BA6792FP



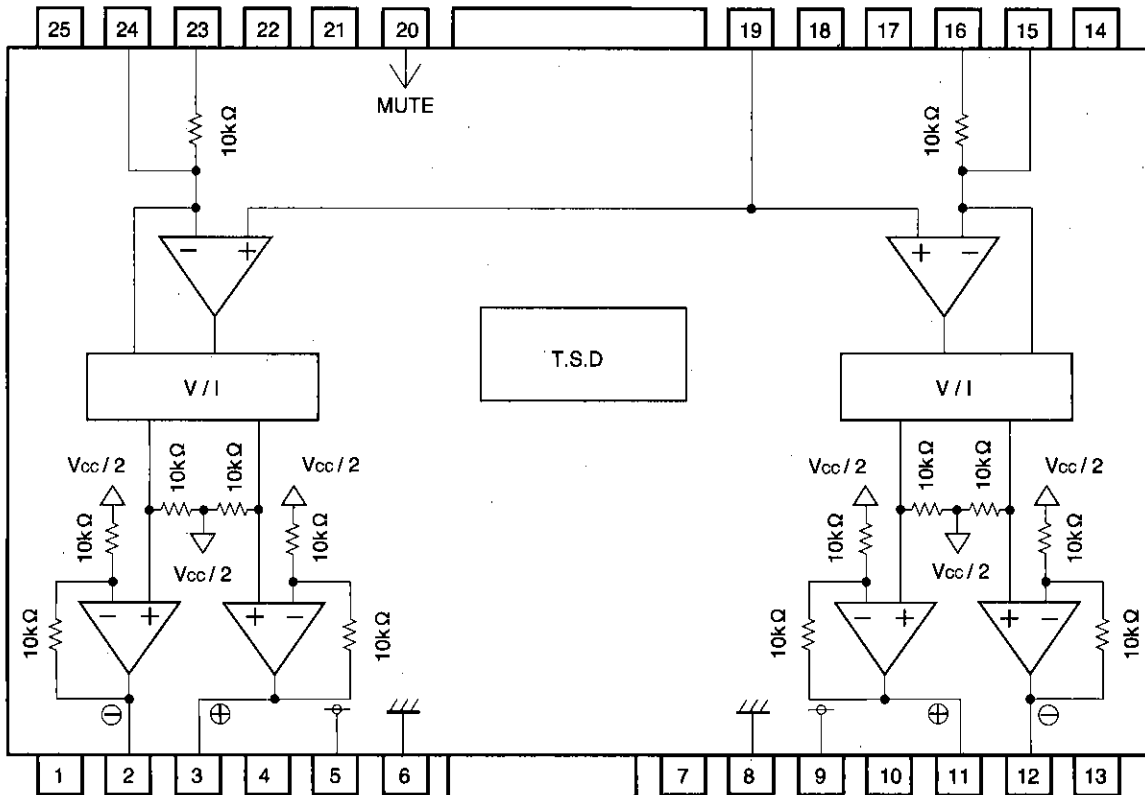
●Pin descriptions (BA6792FP)

Pin No.	Pin name	Function
1	N.C.	
2	OUT ₁ -	Channel 1 negative output
3	OUT ₁ +	Channel 1 positive output
4	N.C.	
5	N.C.	
6	V _{cc}	V _{cc}
7	GND	Substrate ground
8	GND	Substrate ground
9	V _{cc}	V _{cc}
10	N.C.	
11	N.C.	
12	OUT ₂ +	Channel 2 positive output
13	OUT ₂ -	Channel 2 negative output
14	N.C.	

Pin No.	Pin name	Function
15	N.C.	
16	IN ₂ '	Channel 2 gain adjustment input
17	IN ₂	Channel 2 gain fixing input
18	N.C.	
19	N.C.	
20	N.C.	
21	BIAS	Bias input
22	MUTE	Muting
23	N.C.	
24	N.C.	
25	N.C.	
26	IN ₁	Channel 1 gain fixing input
27	IN ₁ '	Channel 1 gain adjusting input
28	N.C.	

* Positive output and negative output indicate polarity relative to input.

BA6792FP-Y



Optical Disc ICs

CD/CD-ROM Drivers (1~3 channels)

For CDs/CD-ROMs

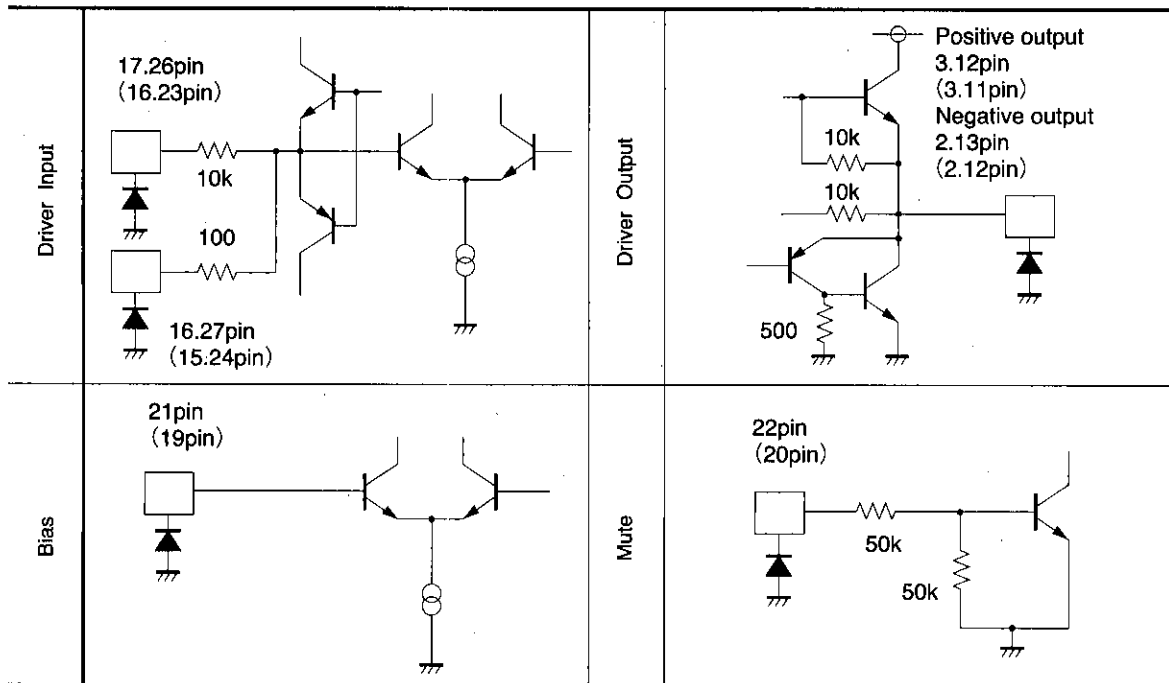
● Pin descriptions (BA6792FP - Y)

Pin No.	Pin name	Function
1	N.C.	
2	OUT1-	Channel 1 negative output
3	OUT1+	Channel 1 positive output
4	N.C.	
5	Vcc	Vcc
6	GND	Substrate ground
7	N.C.	
8	GND	Substrate ground
9	Vcc	Vcc
10	N.C.	
11	OUT2+	Channel 2 positive output
12	OUT2-	Channel 2 negative output
13	N.C.	

Pin No.	Pin name	Function
14	N.C.	
15	IN2'	Channel 2 gain adjustment input
16	IN2	Channel 2 gain fixing input
17	N.C.	
18	N.C.	
19	BIAS	Bias input
20	MUTE	Muting
21	N.C.	
22	N.C.	
23	IN1	Channel 1 gain fixing input
24	IN1'	Channel 1 gain adjusting input
25	N.C.	

* Positive output and negative output indicate polarity relative to input.

● Pin equivalent circuit diagrams



() 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	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	$V_{in}=0.1\text{V}_{rms}$, 100Hz
Slew rate	SR	--	2.0	—	V / μs	100 KHz square wave, 3 Vp-p output
Mute-on voltage	VMON	GND	—	0.5	V	
Mute-off voltage	VMOFF	2.0	—	V_{cc}	V	

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● Measurement circuit

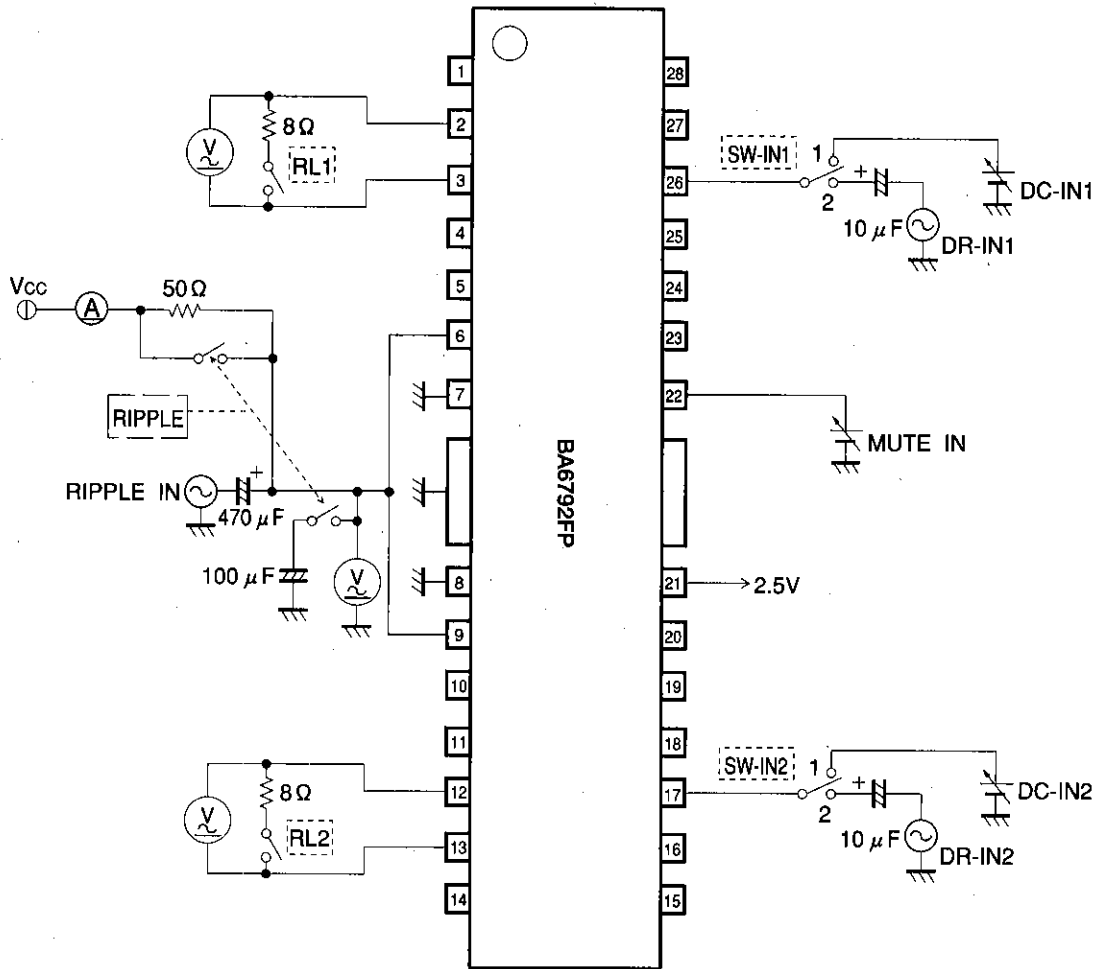


Fig.1

CD/CD-ROM Drivers (1~3 channels)

For CDs/CD-ROMs

●Application example (BA6792FP)

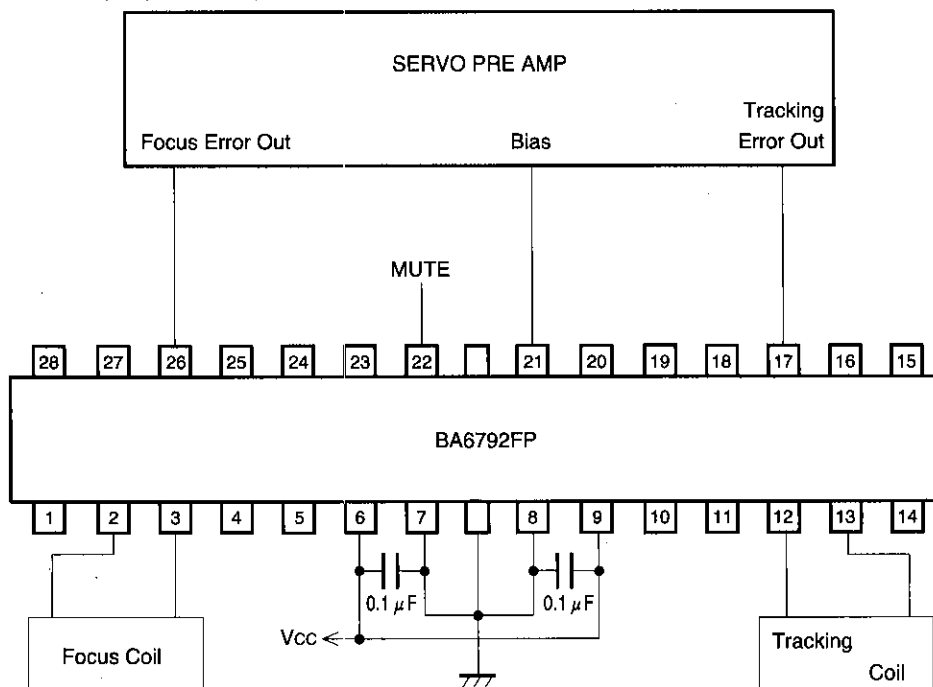


Fig. 2

●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 μ F) 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

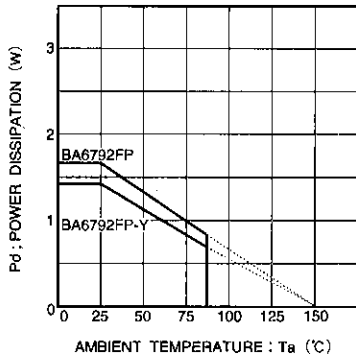


Fig. 3: Thermal derating curve

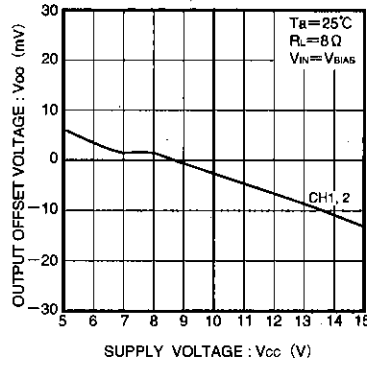


Fig. 4: Supply voltage vs. output offset voltage

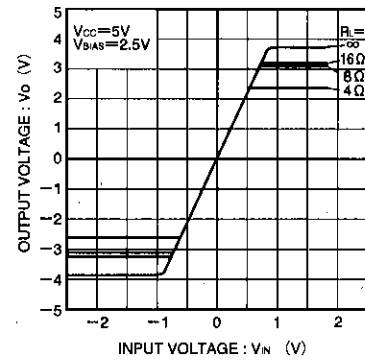


Fig. 5: Input and output characteristics (Vcc = 5V, variable load)

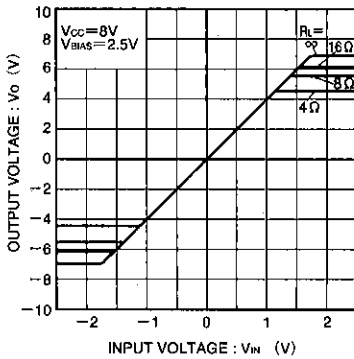


Fig. 6: Input and output characteristics (Vcc = 8 V, variable load)

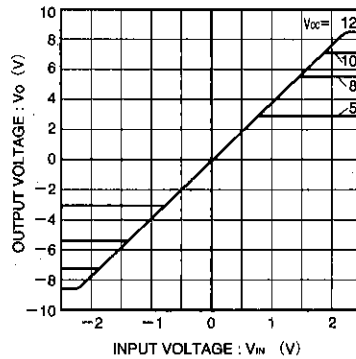
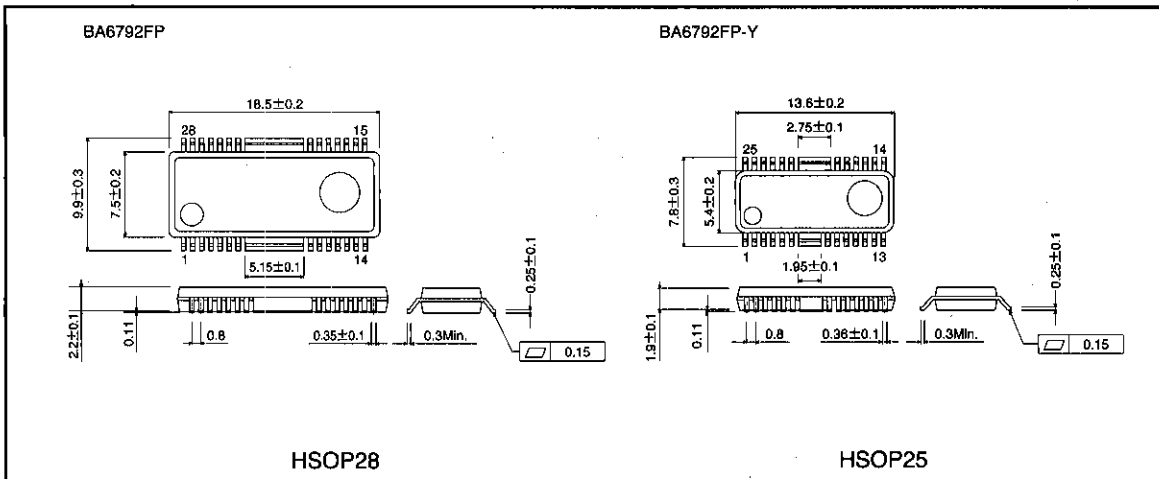


Fig. 7: Input and output characteristics (variable Vcc)

●External dimensions (Units: mm)



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