

# 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		V <sub>CC</sub>	18	V
Power dissipation	BA6792FP	P <sub>d</sub>	1700*1	mW
	BA6792FP-Y		1450*2	
Operating temperature		T <sub>opr</sub>	-35~+85	°C
Storage temperature		T <sub>stg</sub>	-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.

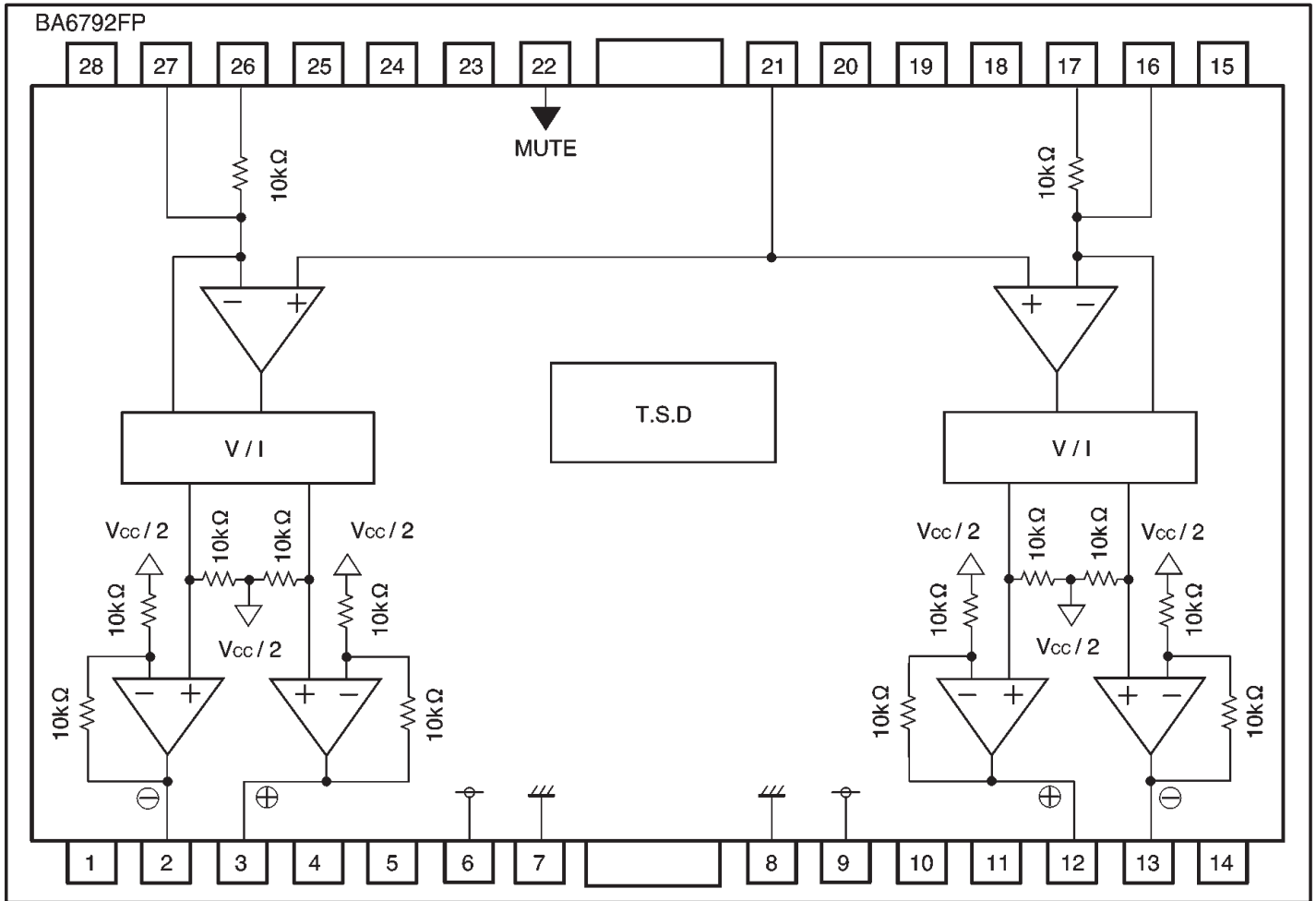
\*2. When mounted on a 50 mm × 50 mm × 1 mm paper phenol PCB board.

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	V <sub>CC</sub>	4.5	—	13.5	V

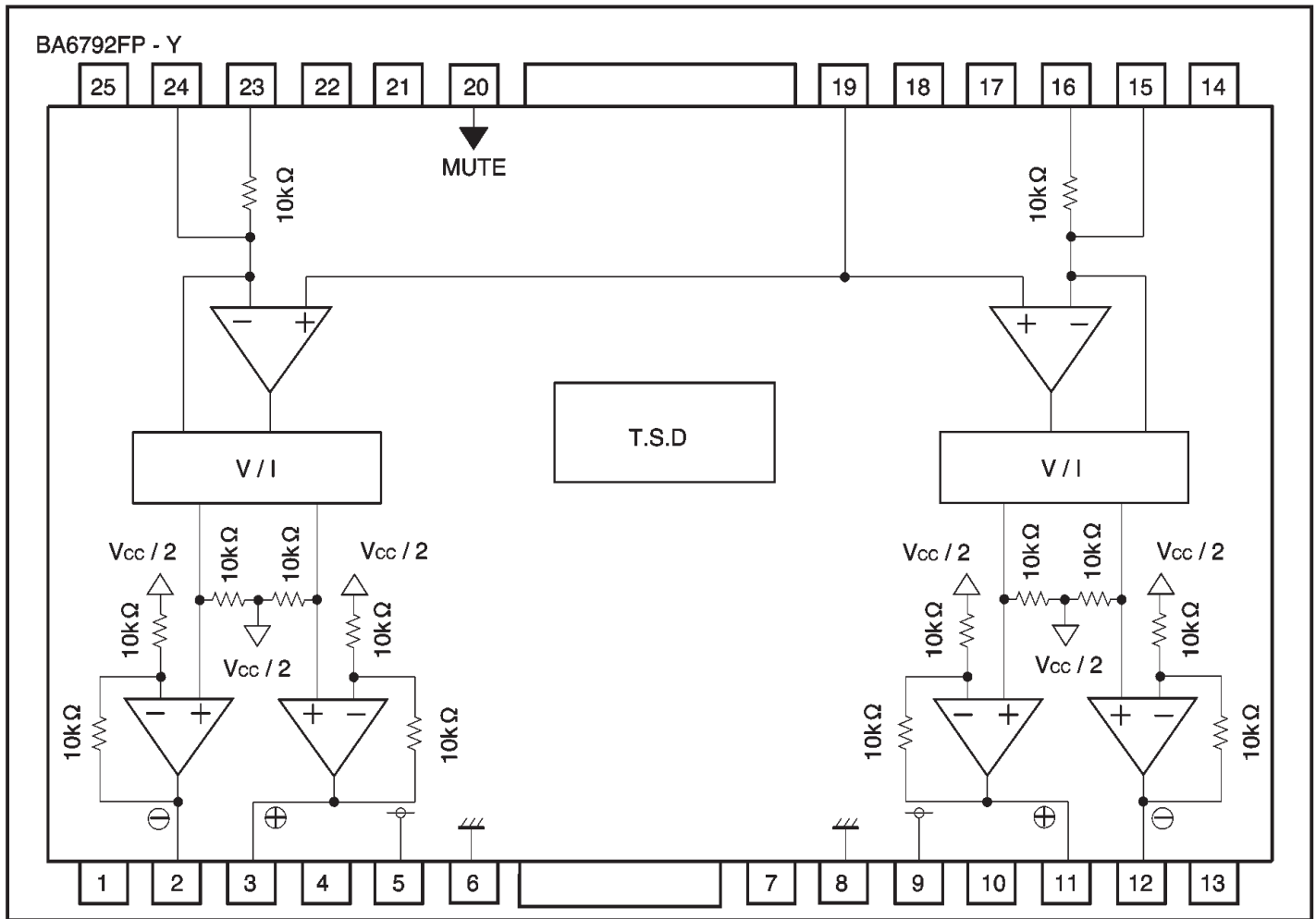
●Block diagram



●Pin descriptions (BA6792FP)

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



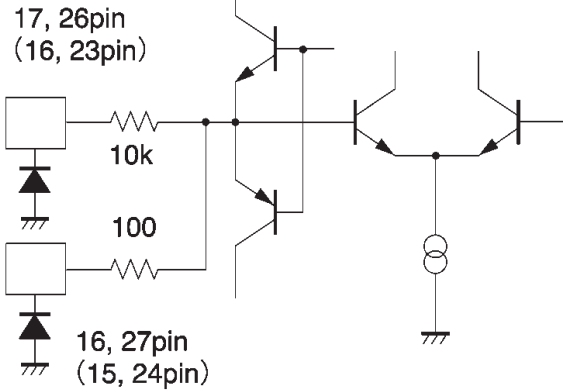
● Pin descriptions (BA6792FP - Y)

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	V <sub>cc</sub>	V <sub>cc</sub>	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	V <sub>cc</sub>	V <sub>cc</sub>	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.	—			

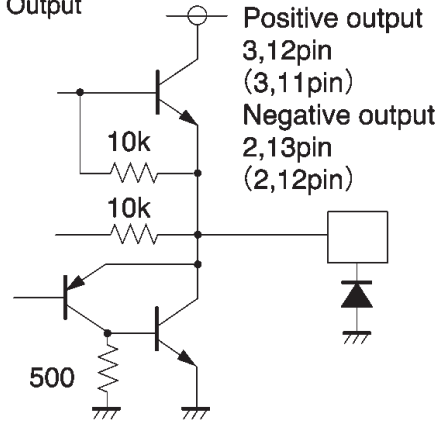
\* Positive output and negative output is relative to polarity of the input pins.

● Pin equivalent circuit diagrams

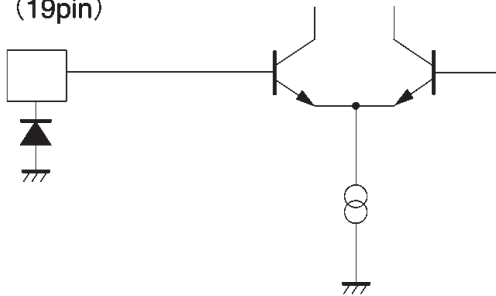
Driver Input



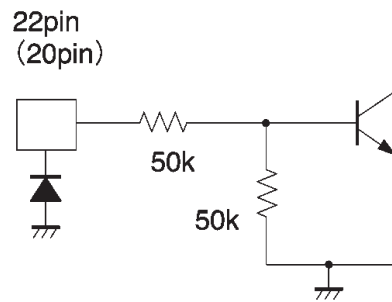
Driver Output



Bias 21pin (19pin)



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	$V_{IN}=0.1V_{rms}$ , 100Hz
Slew rate	SR	—	2.0	—	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

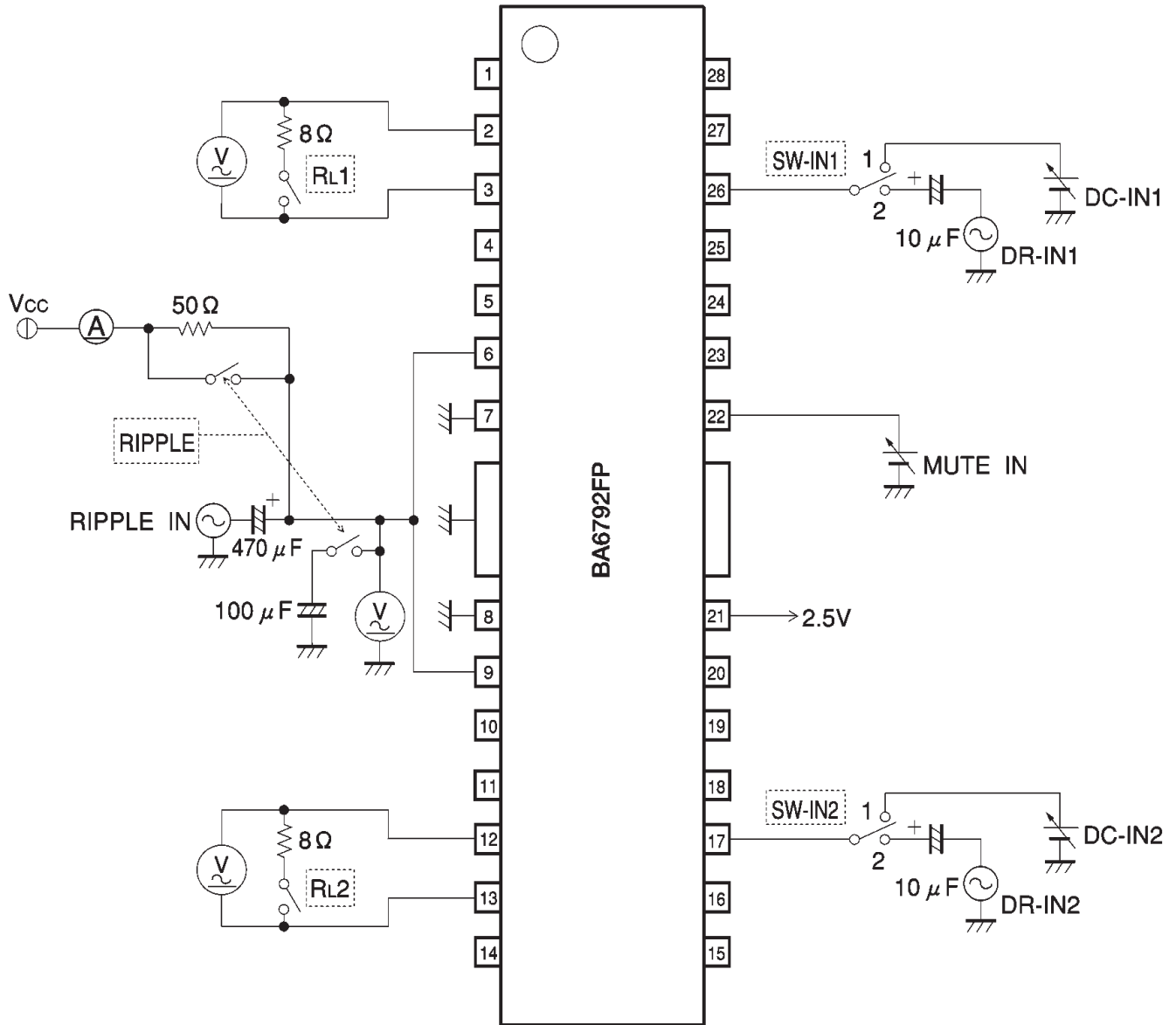


Fig.1

## ●Application example (BA6792FP)

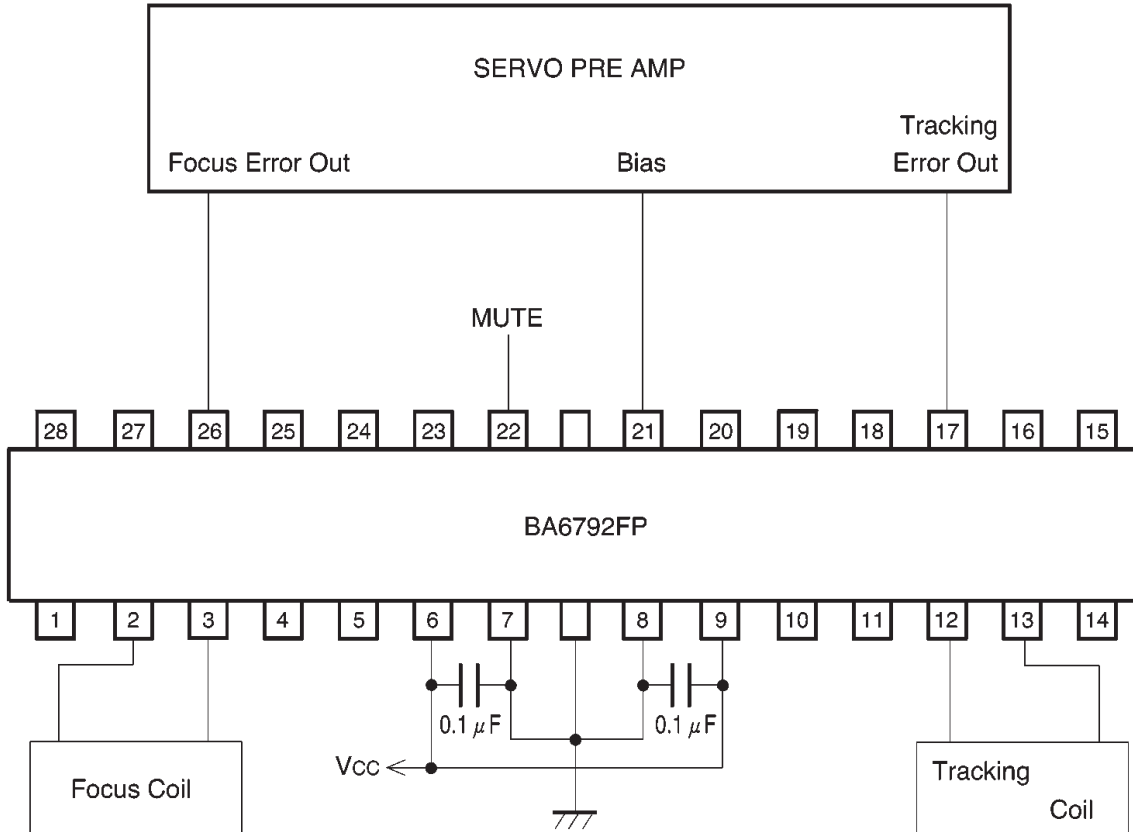


Fig. 2

## ●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 0.1μF) 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

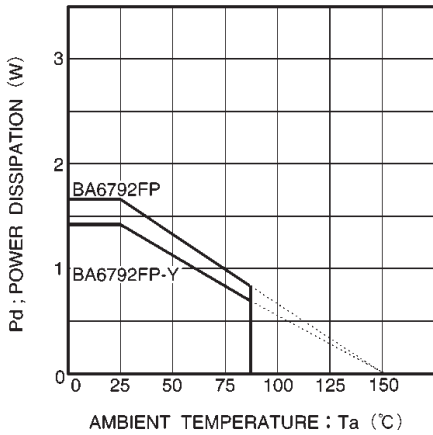


Fig. 3 Thermal derating curve

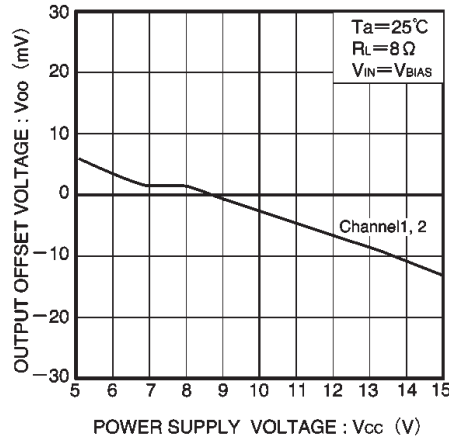


Fig. 4 Power supply voltage vs. output offset voltage

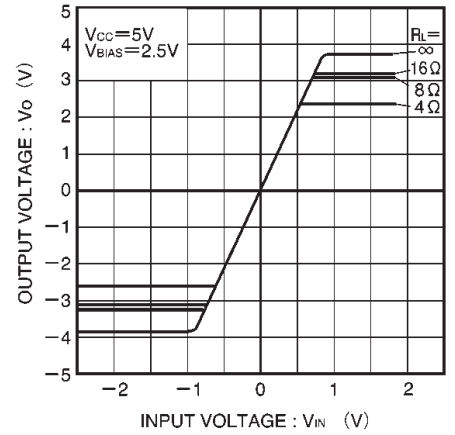


Fig. 5 Input and output characteristics (Vcc = 5V, variable load)

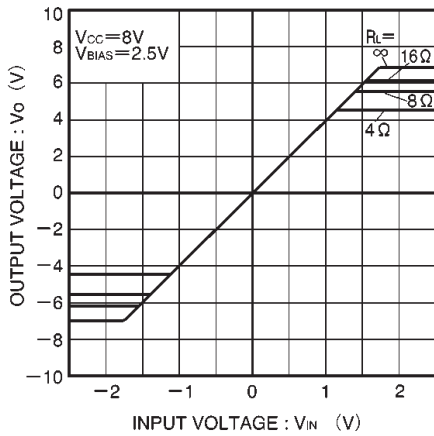


Fig. 6 Input and output characteristics (Vcc = 8V, variable load)

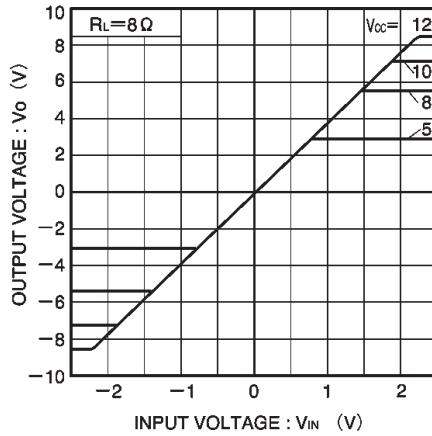


Fig. 7 Input and output characteristics (variable Vcc)

●External dimensions (Units: mm)

