

TOSHIBA BIPOLAR LINEAR INTEGRATED CIRCUIT SILICON MONOLITHIC

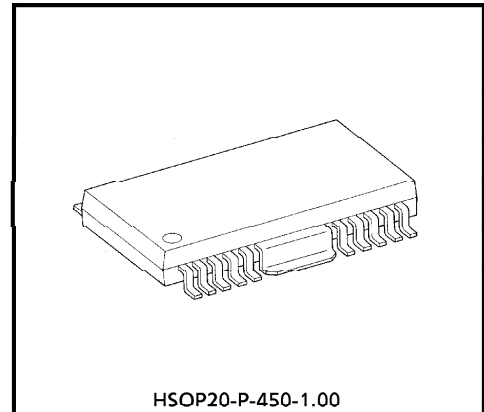
# TA8212F

## 4ch POWER DRIVER IC FOR CD PLAYER

TA8212F is a 4ch power driver IC developed for controlling a pickup focus actuator coil, tracking actuator coil, disc motor and feed motor of CD players. In addition, the TA8212F is also best suited for use as a power driver for general purpose motors.

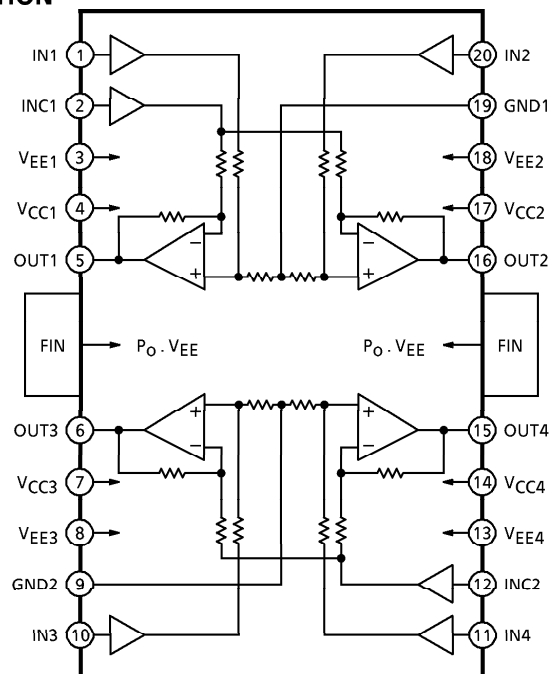
### FEATURES

- Built-in 4ch power amplifiers (for driving disc motor, feed motor, focus coil and tracking coil).
- Built-in thermal shut down circuit.
- High input impedance realized by built-in buffer amplifier.
- HSOP20 pin package enabling a compact design.



Weight : 0.8g (Typ.)

### BLOCK DIAGRAM / PIN CONNECTION



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## FUNCTION OF EACH PIN

PIN No.	SYMBOL	I/O	FUNCTIONAL DESCRIPTION	REMARKS
1	IN1	I	Power amp-1 control signal input terminal.	
2	INC1	I	Power amp-1, 2 common control signal input terminal.	
3	V <sub>EE1</sub>	—	Negative supply voltage terminal.	Connect to terminals ⑧, ⑬, ⑱ and FIN.
4	V <sub>CC1</sub>	—	Positive supply voltage terminal.	Connect to terminals ⑦, ⑭ and ⑰.
5	OUT1	O	Power amp-1 output terminal. IN1 and INC1 error signal amp output.	
6	OUT3	O	Power amp-3 output terminal. IN3 and INC2 error signal amp output.	
7	V <sub>CC3</sub>	—	Positive supply voltage terminal.	Connect to terminals ④, ⑭ and ⑰.
8	V <sub>EE3</sub>	—	Negative supply voltage terminal.	Connect to terminals ③, ⑬, ⑱ and FIN.
9	GND2	—	Ground terminal.	Connect to terminal ⑲.
10	IN3	I	Power amp-3 control signal input terminal.	
11	IN4	I	Power amp-4 control signal input terminal.	
12	INC2	I	Power amp-3, 4 common control signal input terminal.	
13	V <sub>EE4</sub>	—	Negative supply voltage terminal.	Connect to terminals ③, ⑧, ⑱ and FIN.
14	V <sub>CC4</sub>	—	Positive supply voltage terminal.	Connect to terminals ④, ⑦ and ⑰.
15	OUT4	O	Power amp-4 output terminal. IN4 and INC2 error signal amp output.	
16	OUT2	O	Power amp-2 output terminal. IN2 and INC1 error signal amp output.	
17	V <sub>CC2</sub>	—	Positive supply voltage terminal.	Connect to terminals ④, ⑦ and ⑭.
18	V <sub>EE2</sub>	—	Negative supply voltage terminal.	Connect to terminals ③, ⑧, ⑬ and FIN.
19	GND1	—	Ground terminal.	Connect to terminal ⑨
20	IN2	I	Power amp-2 control signal input terminal.	
FIN	P <sub>O</sub> -V <sub>EE</sub>	—	Heat Sink and negative supply voltage terminal.	Connect to terminals ③, ⑧, ⑬ and ⑱.

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- The information contained herein is subject to change without notice.

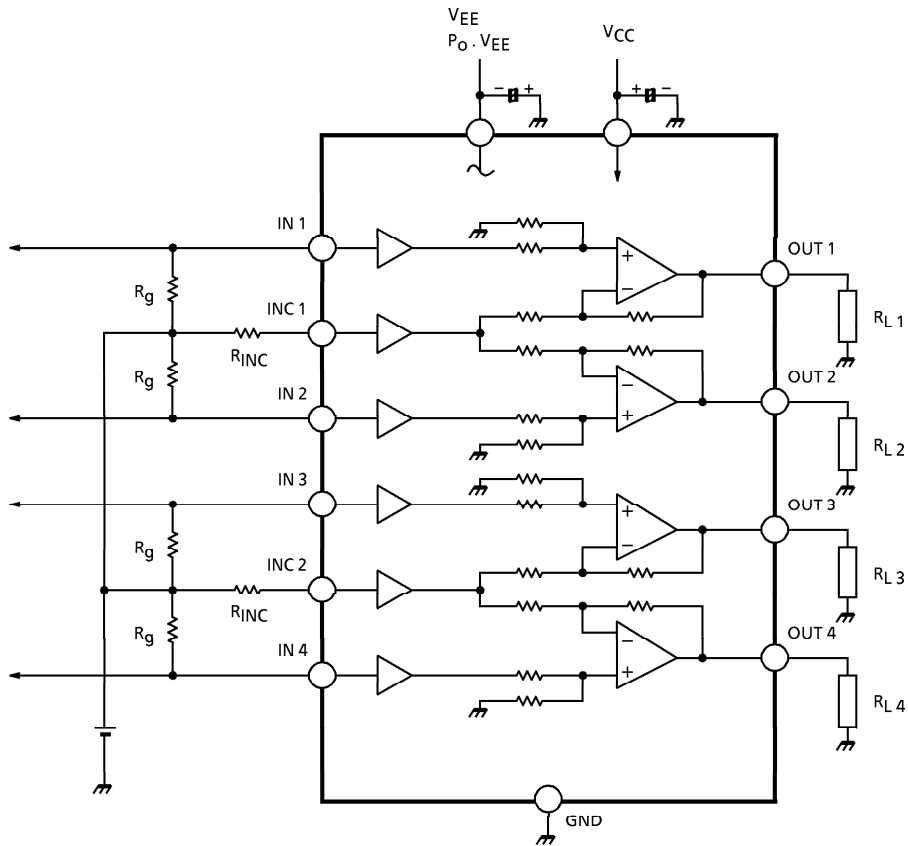
## MAXIMUM RATINGS (Ta = 25°C)

CHARACTERISTIC	SYMBOL	RATING	UNIT
Power Supply Voltage	$V_{CC} - V_{EE}$	14.5	V
Output Current	$I_O(\text{peak})$	700	mA
Power Dissipation	$P_D$	1 (No Heat Sink)	W
		2 (Heat Sink)	
Operating Temperature	$T_{opr}$	- 25 ~ 75	°C
Storage Temperature	$T_{stg}$	- 55 ~ 150	°C

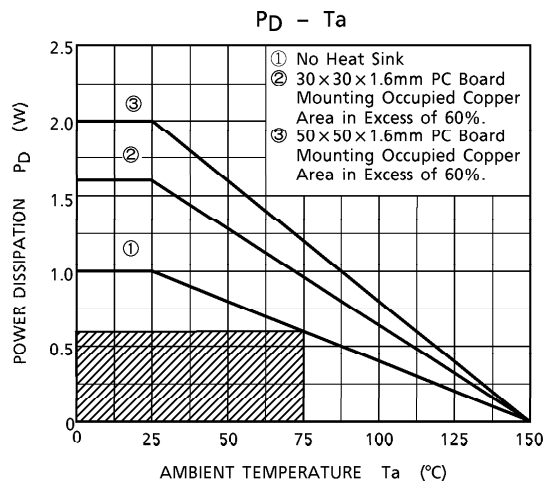
ELECTRICAL CHARACTERISTICS (Unless otherwise specified,  $V_{CC} = 5V$ ,  $V_{EE} = -5V$ ,  $R_L = 5\Omega$ ,  $T_a = 25^\circ\text{C}$ )

CHARACTERISTIC	SYMBOL	TEST CIRCUIT	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Operating Power Supply Voltage	$V_{CC} - V_{EE}$	—		8	10	12	V
Power Supply Current	$I_{CCQ}$	—	$I_N = I_{NC} = 2V$ , $R_L = \infty$	5	17	29	mA
Input Offset Current	$ I_{IO} $	—		—	100	300	nA
Input Bias Current	$I_I$	—		—	0.5	—	$\mu\text{A}$
Output Offset Voltage	$ V_{IO} $	—	$R_g = 10k\Omega$ , $R_{INC} = 10k\Omega$	—	—	60	mV
Output Voltage	$V_{OH}$	—		2.7	3.3	—	V
	$V_{OL}$			—	-3.3	-2.8	
Gain	$G_V$	—	$V_{IN} = 100mV_{rms}$ , $f = 1kHz$	8.5	9.5	10.5	dB
Frequency Band Range	$f_C$	—	$V_{IN} = 100mV_{rms}$ , $G = -3dB$	50	—	—	kHz
Total Harmonic Distortion	THD	—	$f = 1kHz$ , $V_{OUT} = 5V_{p-p}$	—	-50	—	dB
Slew Rate	SR	—	$V_{OUT} = 2V_{p-p}$	—	0.5	—	$V / \mu s$
Output Noise Voltage	$V_{NO}$	—	$R_g = 10k\Omega$	—	0.1	—	$mV_{rms}$
Cross-talk	C.T	—	$R_g = 10k\Omega$ , $f = 1kHz$ $V_O = 775mV_{rms}$ (0dBm), for each ch	—	-60	—	dB
Ripple Rejection Ratio	RR	—	$R_g = 10k\Omega$ $f_R = 100Hz$ , $77.5mV_{rms}$ (-20dBm)	—	-65	—	dB
Thermal Shutdown Operation Temperature	$T_j(\text{ON})$	—		150	—	—	°C

TEST CIRCUIT

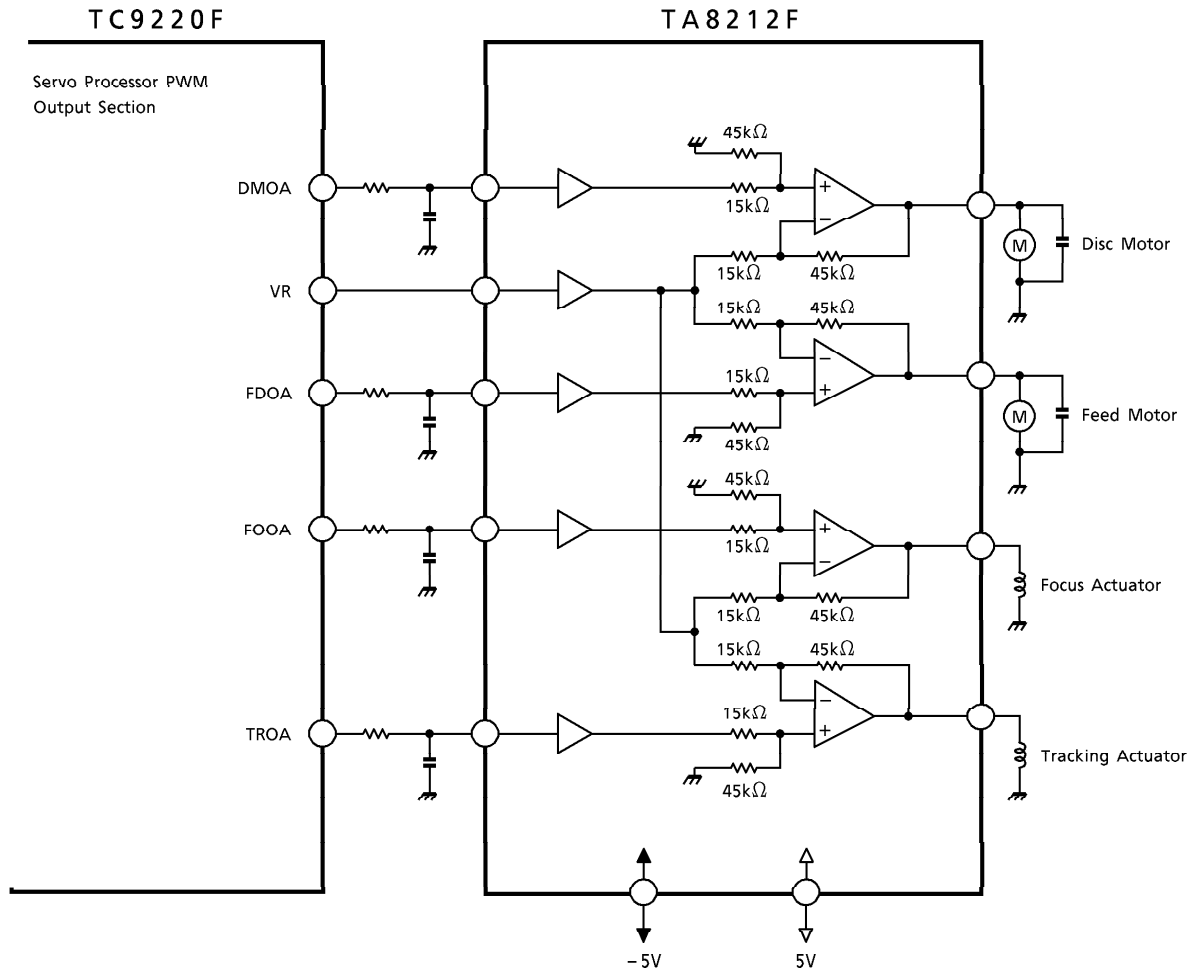


POWER DISSIPATION



Note : In case of normal use, power dissipation of IC only is oblique line portion.

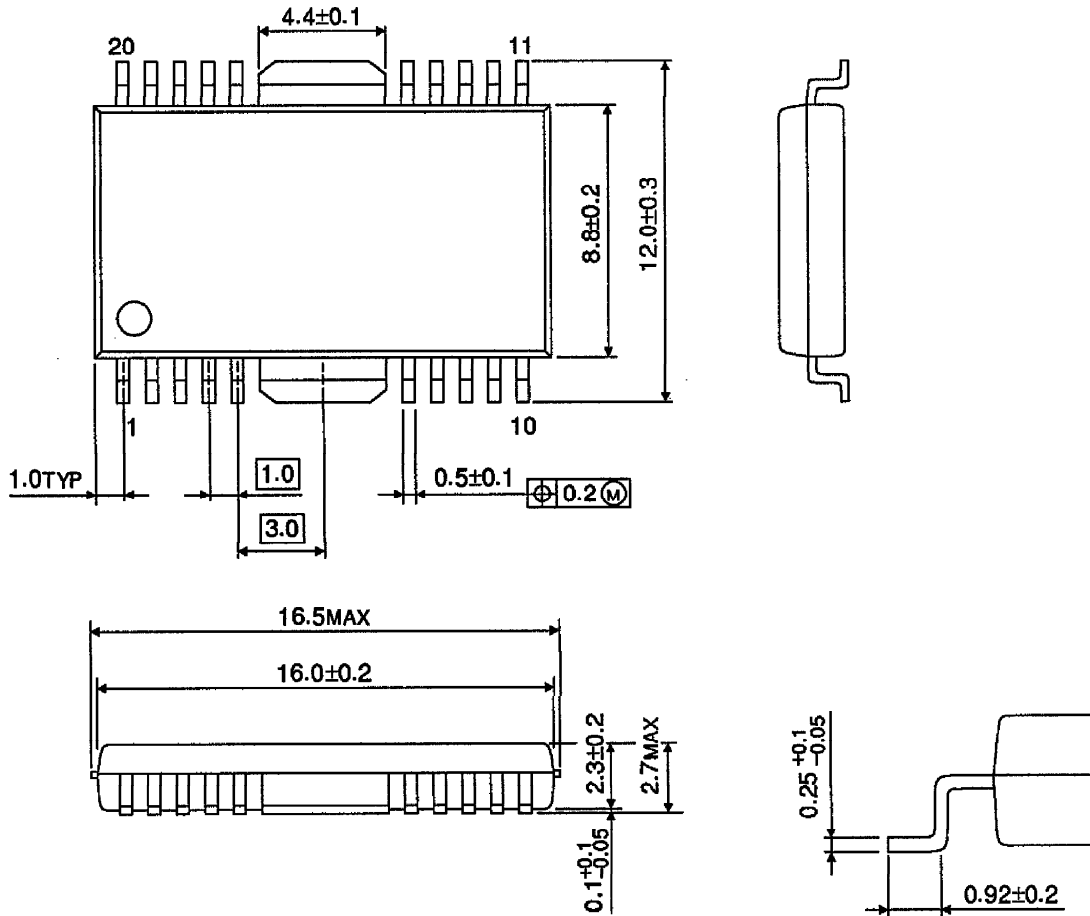
APPLICATION CIRCUIT



Gain  $G_Y = 9.5\text{dB}$  (Typ.) fixed

**OUTLINE DRAWING**  
HSOP20-P-450-1.00

Unit : mm



Weight : 0.8g (Typ.)