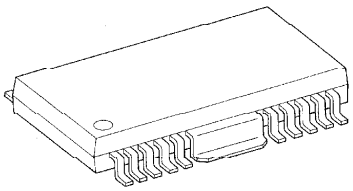
TOSHIBA BIPOLAR LINEAR INTEGRATED CIRCUIT SILICON MONOLITHIC

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.



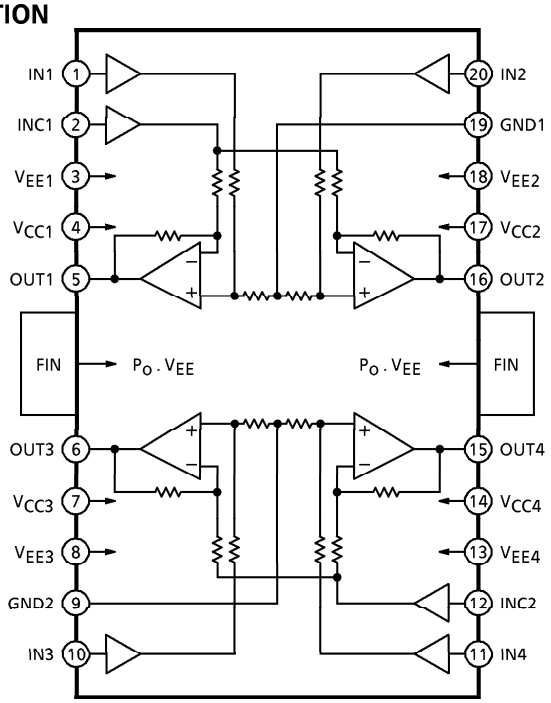
HSOP20-P-450-1.00

Weight : 0.8g (Typ.)

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.

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_{EE1}	—	Negative supply voltage terminal.	Connect to terminals ⑧, ⑬, ⑱ and FIN.
4	V_{CC1}	—	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_{CC3}	—	Positive supply voltage terminal.	Connect to terminals ④, ⑭ and ⑰.
8	V_{EE3}	—	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_{EE4}	—	Negative supply voltage terminal.	Connect to terminals ③, ⑧, ⑱ and FIN.
14	V_{CC4}	—	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_{CC2}	—	Positive supply voltage terminal.	Connect to terminals ④, ⑦ and ⑭.
18	V_{EE2}	—	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	$P_O.V_{EE}$	—	Heat Sink and negative supply voltage terminal.	Connect to terminals ③, ⑧, ⑬ and ⑱.

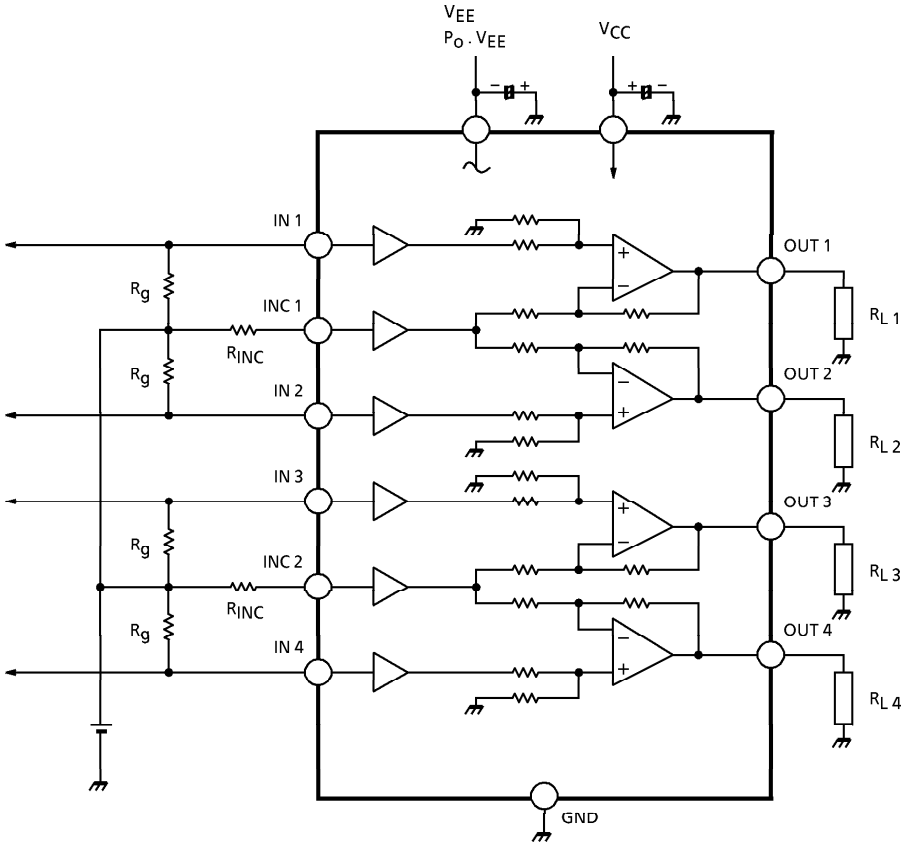
MAXIMUM RATINGS (Ta = 25°C)

CHARACTERISTIC	SYMBOL	RATING	UNIT
Power Supply Voltage	$V_{CC} - V_{EE}$	14.5	V
Output Current	I_O(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

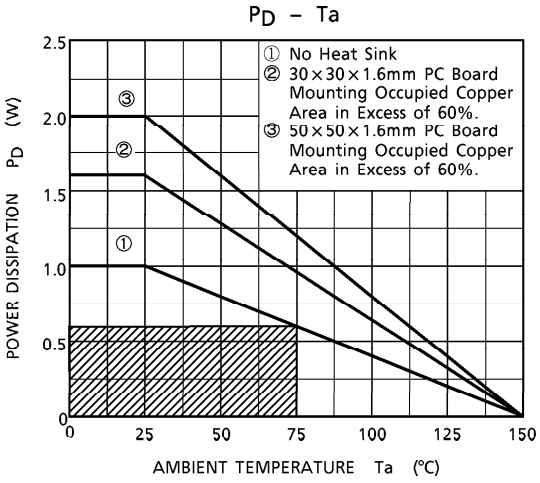
ELECTRICAL CHARACTERISTICS (Unless otherwise specified, V_{CC} = 5V, V_{EE} = − 5V, R_L = 5Ω, Ta = 25°C)

CHARACTERISTIC	SYMBOL	TEST CIR-CUIT	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Operating Power Supply Voltage	$V_{CC} - V_{EE}$	—		8	10	12	V
Power Supply Current	I_{CCQ}	—	IN = INC = 2V, $R_L = \infty$	5	17	29	mA
Input Offset Current	$\|I_{IO}\|$	—		—	100	300	nA
Input Bias Current	I_I	—		—	0.5	—	μA
Output Offset Voltage	$\|V_{IO}\|$	—	Rg = 10kΩ, R_{INC} = 10kΩ	—	—	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 / μs
Output Noise Voltage	V_{NO}	—	Rg = 10kΩ	—	0.1	—	mV_{rms}
Cross-talk	C . T	—	Rg = 10kΩ, f = 1kHz V_O = 775mV_{rms} (0dBm), for each ch	—	− 60	—	dB
Ripple Rejection Ratio	RR	—	Rg = 10kΩ f_R = 100Hz, 77.5mV_{rms} (− 20dBm)	—	− 65	—	dB
Thermal Shutdown Operation Temperature	T_j (ON)	—		150	—	—	°C

TEST CIRCUIT

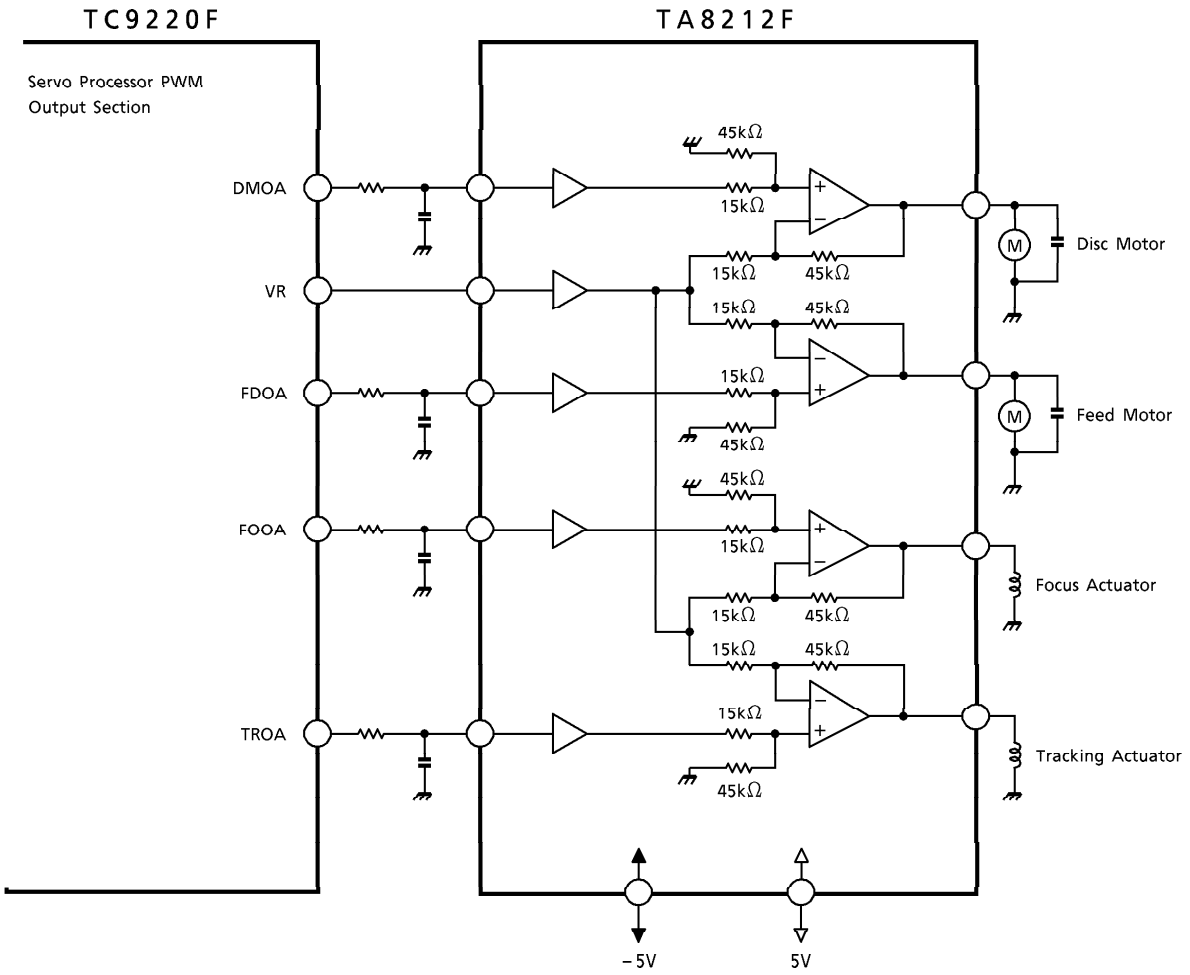


POWER DISSIPATION



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

APPLICATION CIRCUIT

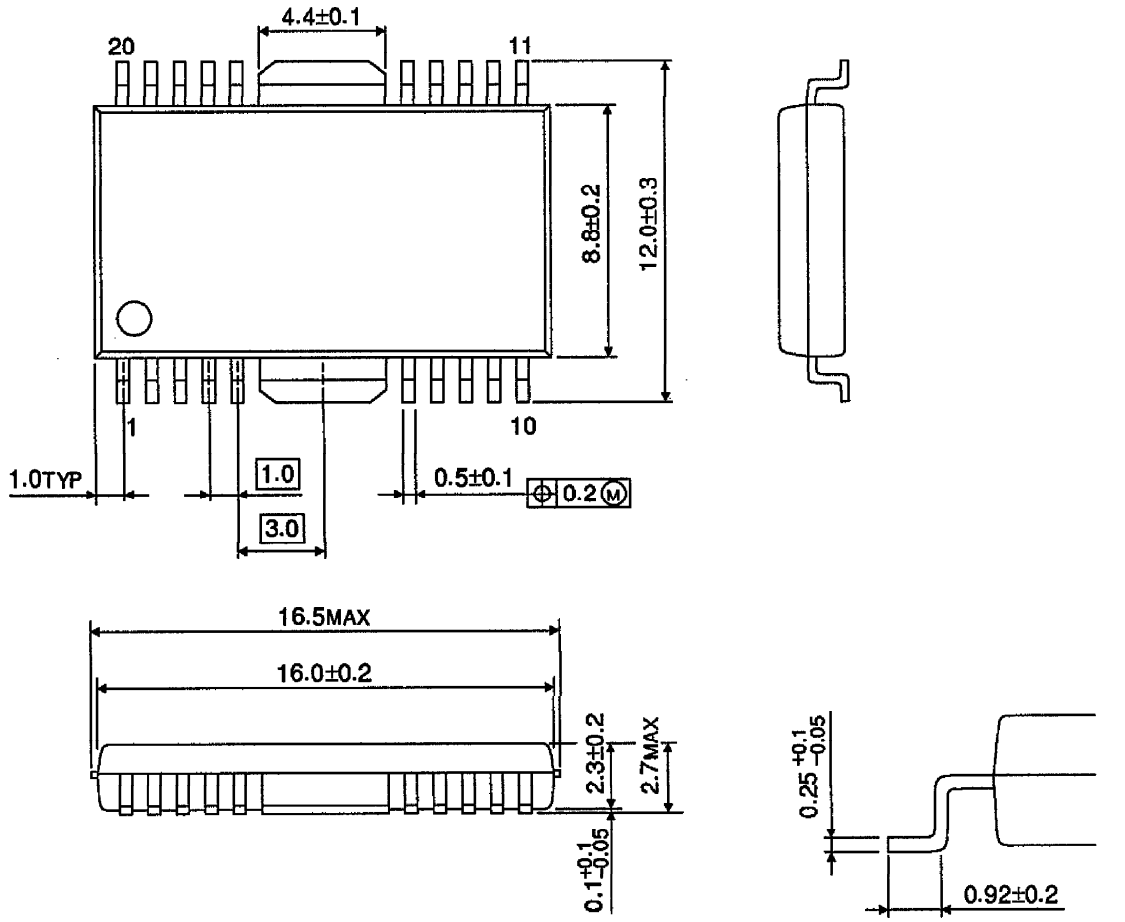


Gain G_V = 9.5dB (Typ.) fixed

OUTLINE DRAWING

HSOP20-P-450-1.00

Unit : mm



Weight : 0.8g (Typ.)