

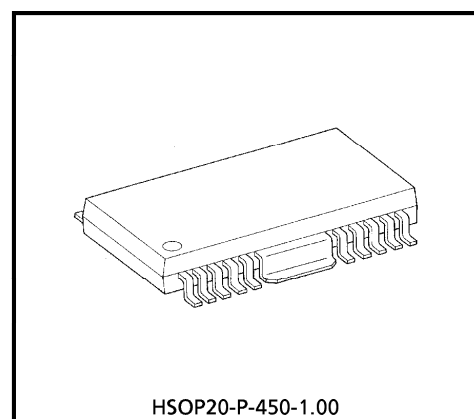
TA8192F

POWER DRIVER IC FOR CD PLAYER

TA8192F is a power driver IC developed for CD players. It controls the focus/tracking coil of a 3-beam pickup head, the disc motor and feed motor.

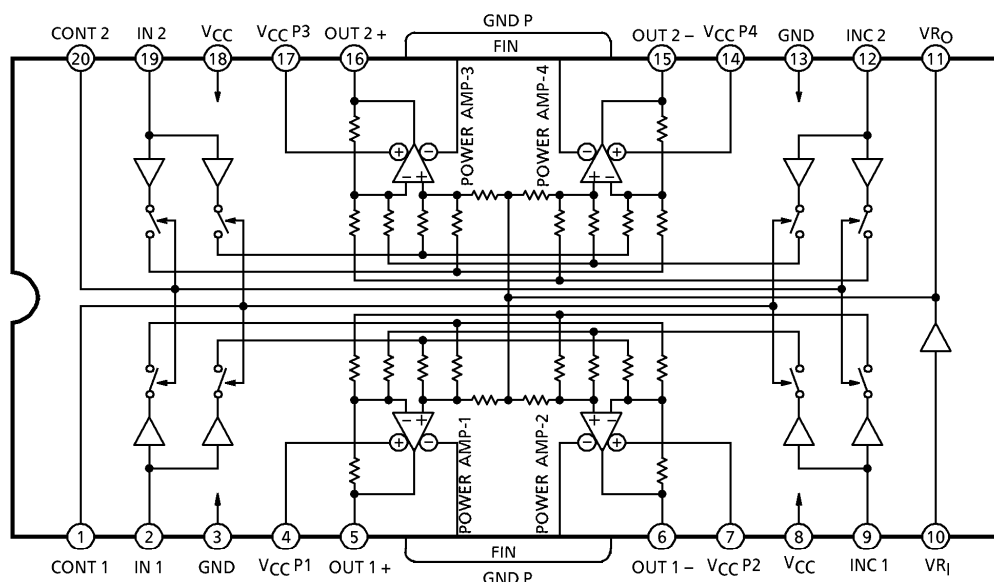
FEATURES

- BTL power drivers for 2 channels.
- Circuits can reduce external components without utilizing a bootstrap technique.
- High output voltage.
- High output current : I_O (Typ.) = 0.5A
- Wide operating power supply voltage range : $V_{CC} = 4 \sim 12V$
- Gain switch/output off (VR fixed output) are possible.
Gain selection : 2, 4, 6 times
- Built-in thermal shutdown circuit.
- 20 pin power flat package.



Weight : 0.8g (Typ.)

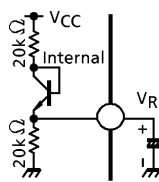
BLOCK DIAGRAM / PIN CONNECTION



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FUNCTION OF EACH PIN

PIN No.	SYMBOL	I/O	FUNCTION DESCRIPTION				REMARKS															
1	CONT 1	I	Input terminal for gain switch.	<table><tr><td>CONT 1</td><td>CONT 2</td><td>Gain</td></tr><tr><td>0</td><td>0</td><td>VR fixed</td></tr><tr><td>1</td><td>0</td><td>2 times</td></tr><tr><td>0</td><td>1</td><td>4 times</td></tr><tr><td>1</td><td>1</td><td>6 times</td></tr></table>			CONT 1	CONT 2	Gain	0	0	VR fixed	1	0	2 times	0	1	4 times	1	1	6 times	
CONT 1	CONT 2			Gain																		
0	0			VR fixed																		
1	0			2 times																		
0	1	4 times																				
1	1	6 times																				
20	CONT 2																					
2	IN 1	I	Control signal input terminal for power Amp-1 and 2.																			
3	GND	—	Ground terminal.																			
4	V _{CC} P1	—	Power supply voltage terminal. (Power Amp-1)																			
5	OUT 1 +	O	Power Amp-1 output terminal.																			
6	OUT 1 –	O	Power Amp-2 output terminal.																			
7	V _{CC} P2	—	Power supply voltage terminal. (Power Amp-2)																			
8	V _{CC}	—	Power supply voltage terminal.																			
9	INC 1	I	Control signal input terminal common to power Amp-1 and 2.																			
10	VR _I	I	Internal reference voltage terminal. Capacitor for filter is connected with GND.																			
11	VR _O	O	Reference voltage output terminal. VR _O = VR _I																			
12	INC 2	I	Control signal input terminal common to power Amp-3 and 4.																			
13	GND	—	Ground terminal.																			
14	V _{CC} P4	—	Power supply voltage terminal. (Power Amp-4)																			
15	OUT 2 –	O	Power Amp-4 output terminal.																			
16	OUT 2 +	O	Power Amp-3 output terminal.																			
17	V _{CC} P3	—	Power supply voltage terminal. (Power Amp-3)																			
18	V _{CC}	—	Power supply voltage terminal.																			
19	IN 2	I	Control signal input terminal for power Amp-3 and 4.																			
FIN	GND P	—	Heat sink and power ground terminal.																			

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MAXIMUM RATINGS (Ta = 25°C)

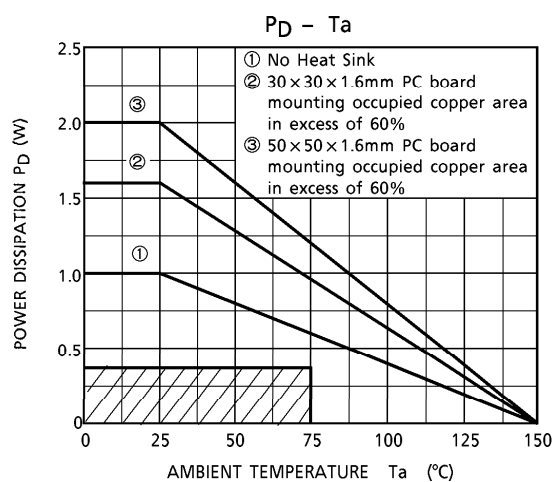
CHARACTERISTIC		SYMBOL	RATING	UNIT
Power Supply Voltage		V _{CC}	14	V
Output Current		I _O (Typ.)	0.5	A
Power Dissipation	No Heat Sink	P _D	1	W
	Heat Sink		2	
Operating Temperature		T _{opr}	– 25~75	°C
Storage Temperature		T _{stg}	– 55~150	°C

ELECTRICAL CHARACTERISTICS (Unless otherwise specified, V_{CC} = 5V, Ta = 25°C, BTL connection)

CHARACTERISTIC	SYMBOL	TEST CIR-CUIT	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Operating Power Supply Voltage	V _{CC}	—	V _{CC} , V _{CC} P1 – V _{CC} P4	4	5	12	V
Power Supply Current	I _{CCQ}	—	IN 1 = IN 2 = 2.1V INC 1 = INC 2 = 2.1V	10	16	30	mA
					16		
					18		
Input Offset Current	I _{IO}	—	IN 1 – INC 1, IN 2 – INC 2	—	10	100	nA
Input Bias Current	I _{IB}	—	IN 1, INC 1, IN 2, INC 2 terminals	—	500	1600	nA
Output Offset Voltage	V _{OS}	—	IN 1 = IN 2 = 2.1V INC 1 = INC 2 = 2.1V	V _{CC} = 5V	10	30	mV
				V _{CC} = 8V	—	50	
				V _{CC} = 12V	—	100	
Output Voltage	V _O	—	f = 1kHz, R _L = 5Ω	4.5	5.0	—	V _{p-p}
Voltage Gain	G _V	—	f = 1kHz, R _L = 5Ω V _{in} = 100mV _{rms}	2 times	4.5	5.0	dB
				4 times	10.5	11.0	
				6 times	14.5	15.0	
Frequency Band Range	f _c	—	R _L = 5Ω V _{in} = 100mV _{rms}	2 times	220	—	kHz
				4 times	180		
				6 times	150		
Total Harmonic Distortion	THD	—	f = 1kHz, R _L = 5Ω V _{in} = 100mV _{rms} V _O = 4V _{p-p}	2 times	– 46	—	dB
				4 times	– 49		
				6 times	– 51		
Slew Rate	SR	—	R _L = 5Ω, V _O = 2V _{p-p}	2 times	1.5	—	V / μs
				4 times	1.2		
				6 times	1.0		
Output Noise Voltage	V _{ON}	—	R _g = 10kΩ DIN AUDIO	2 times	15	—	μV _{rms}
				4 times	25		
				6 times	30		

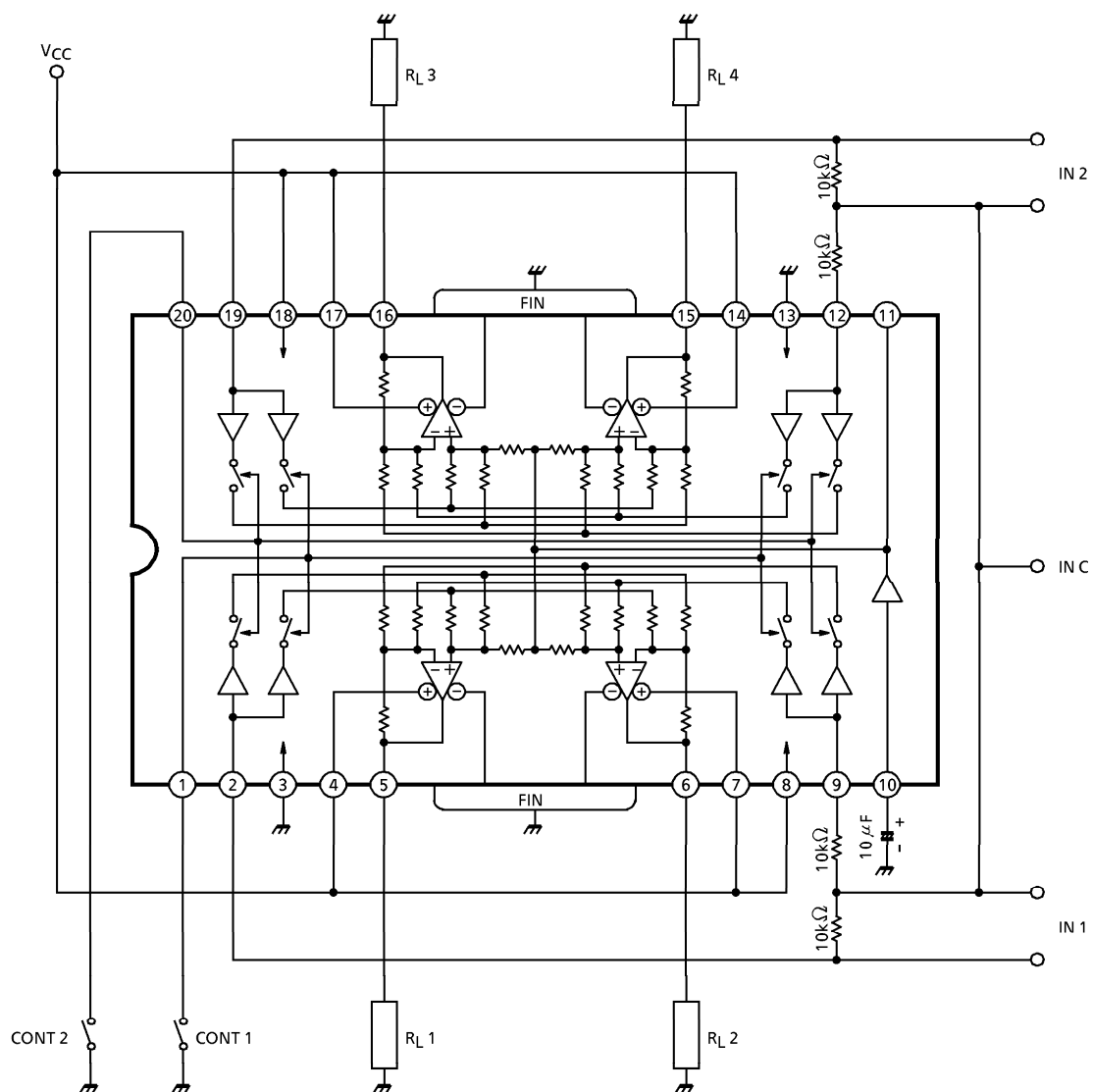
CHARACTERISTIC	SYMBOL	TEST CIRCUIT	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Cross-talk	CT	—	$f = 1\text{kHz}$, $R_L = 5\Omega$ $V_O = 1V_{\text{rms}}$	—	– 88	—	dB
					– 86		
					– 80		
Ripple Rejection Ratio	RR	—	$f_R = 100\text{Hz}$, $77.5mV_{\text{rms}} (-20\text{dBm})$	—	– 70	—	dB
					– 66		
					– 60		
Reference Output Voltage	V_{RO}	—	V_{RO} terminal, $V_{RO} = (V_{CC} - V_{BE}) / 2$	—	2.1	—	V
Input Voltage	"H" level	V_{IH}	CONT 1, CONT 2 terminals	2.0	—	—	V
	"L" level	V_{IL}		—	—	0.3	
Thermal Shutdown Operation Temperature	T_{ON}	—		—	165	—	°C

HSOP 20 POWER DISSIPATION



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

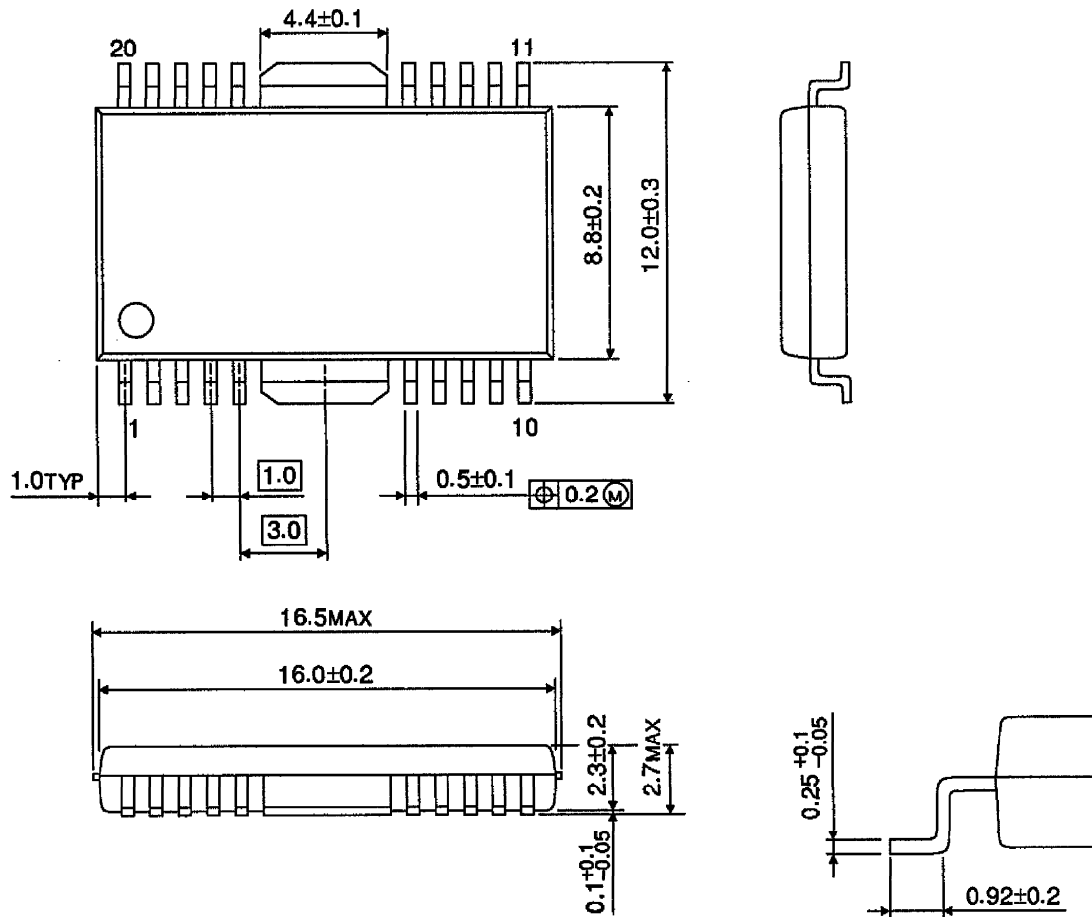
TEST CIRCUIT / APPLICATION CIRCUIT



OUTLINE DRAWING

HSOP20-P-450-1.00

Unit : mm



Weight : 0.8g (Typ.)