

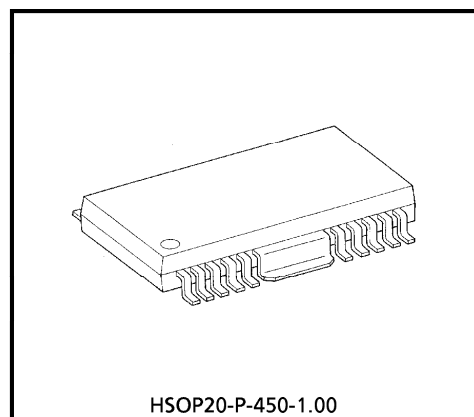
TA8192F

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

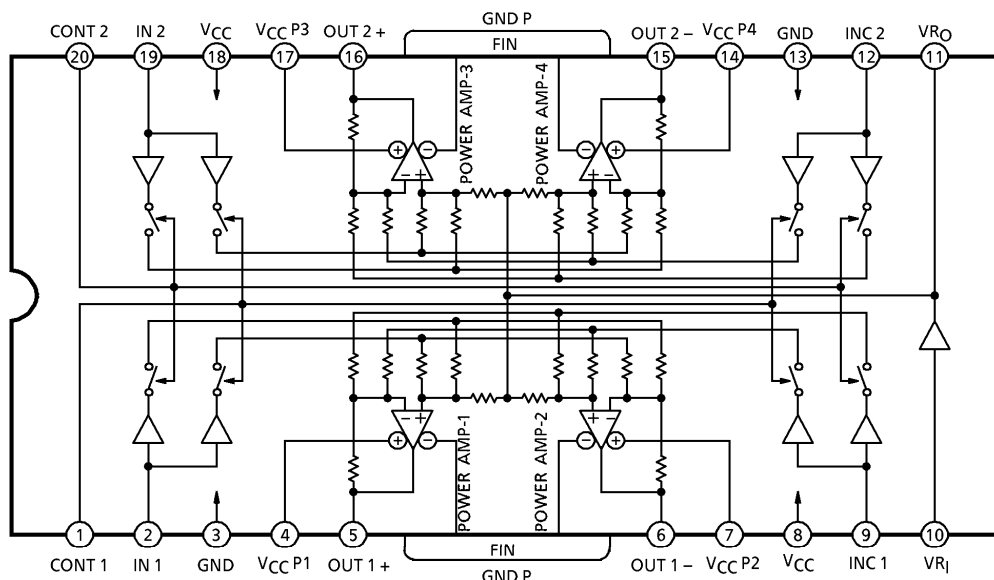
- BTL power drivers for 2 channels.
- Circuits can reduce external components without utilizing a bootstrap technique.
- High output voltage.
- High output current : I_O (Typ.) = 0.5A
- Wide operating power supply voltage range : $V_{CC} = 4 \sim 12V$
- Gain switch / output off (VR fixed output) are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



HSOP20-P-450-1.00

Weight : 0.8g (Typ.)

BLOCK DIAGRAM / PIN CONNECTION



980508EBA2

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FUNCTION OF EACH PIN

| PIN No. | SYMBOL | I/O | FUNCTION DESCRIPTION | | | REMARKS |
|---------|--------------------|-----|---|--------|------|----------|
| | | | CONT 1 | CONT 2 | Gain | |
| 1 | CONT 1 | I | Input terminal for gain switch. | 0 | 0 | VR fixed |
| 20 | CONT 2 | | | 1 | 0 | 2 times |
| | | | | 0 | 1 | 4 times |
| | | | | 1 | 1 | 6 times |
| 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. | | | |

980508EBA2'

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

MAXIMUM RATINGS (Ta = 25°C)

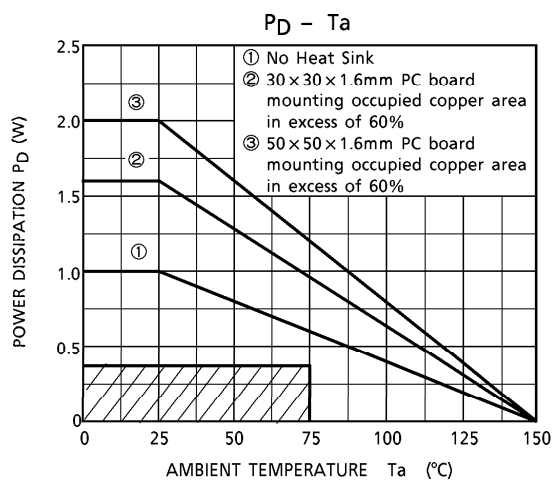
| CHARACTERISTIC | SYMBOL | RATING | UNIT |
|-----------------------|-----------------------|----------------|------|
| Power Supply Voltage | V _{CC} | 14 | V |
| Output Current | I _O (Typ.) | 0.5 | A |
| Power Dissipation | No Heat Sink | P _D | W |
| | Heat Sink | | |
| Operating Temperature | T _{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 | 2 times | 16 | 30 | mA | |
| | | | | 4 times | 16 | | | |
| | | | | 6 times | 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 | 6.5 | dB |
| | | | | 4 times | 10.5 | 11.0 | 12.5 | |
| | | | | 6 times | 14.5 | 15.0 | 16.5 | |
| 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 | — | $f = 1\text{kHz}, R_L = 5\Omega$ $V_O = 1V_{\text{rms}}$ | 2 times | — | -88 | — | dB | | |
| | | | | 4 times | — | -86 | | | | |
| | | | | 6 times | — | -80 | | | | |
| Ripple Rejection Ratio | RR | — | $f_R = 100\text{Hz},$ $77.5mV_{\text{rms}} (-20\text{dBm})$ | 2 times | — | -70 | — | dB | | |
| | | | | 4 times | — | -66 | | | | |
| | | | | 6 times | — | -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 | |

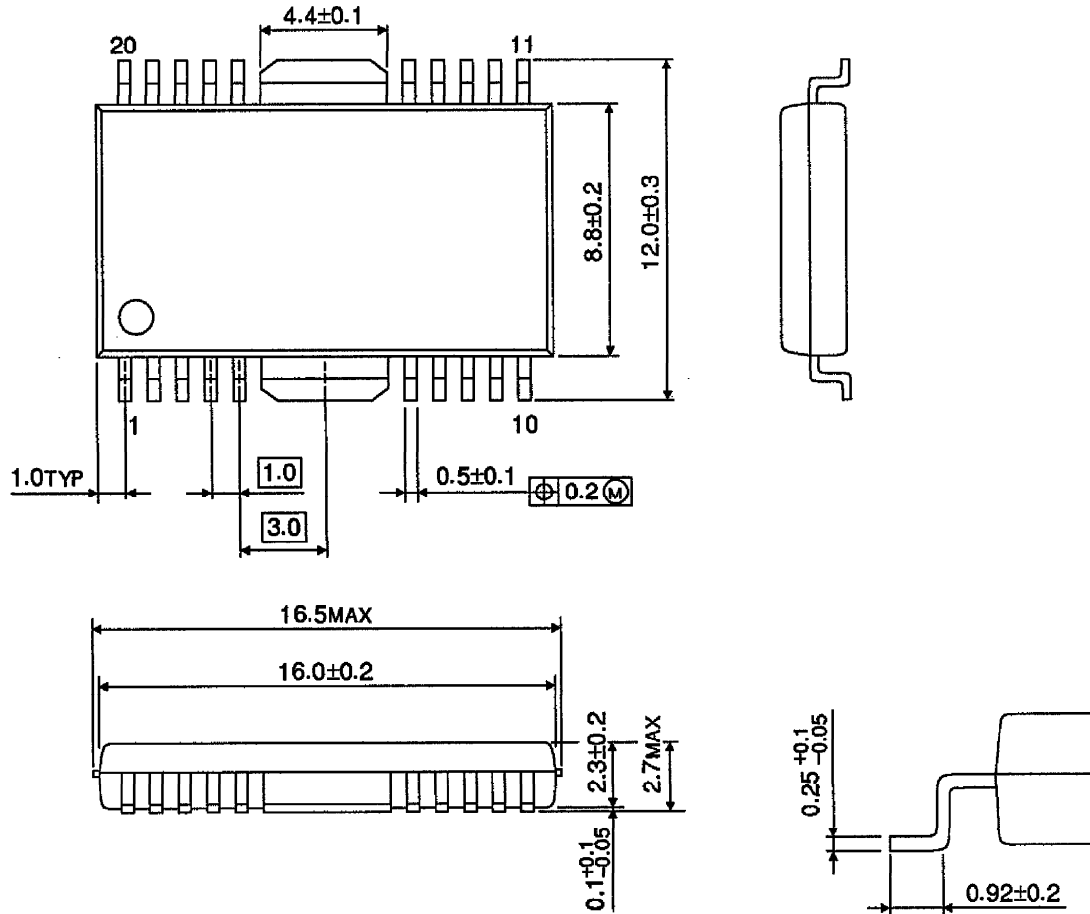
HSOP 20 POWER DISSIPATION



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

OUTLINE DRAWING
HSOP20-P-450-1.00

Unit : mm



Weight : 0.8g (Typ.)