

HTMOS™ High Temperature Products

Preliminary

HIGH TEMPERATURE QUAD ULTRALOW INPUT BIAS CURRENT OPERATIONAL AMPLIFIER HT1104Z

FEATURES

- Specified Over -55 to +225°C
- Single or Split Supply Operation
- Common-Mode Input Voltage Range Includes Negative Rail
- Low Input Bias and Offset Parameters
- Input/Output Overload Protection
- High Input Impedance and Ultra-Low Bias Current
- Latchup Free Design with Dielectric Isolation
- Hermetic 14-Lead Ceramic DIP

APPLICATIONS

- Down-Hole Oil Well
- Turbine Engine Control
- Avionics
- Industrial Process Control
- Nuclear Reactor
- Electric Power Conversion
- Heavy Duty Internal Combustion Engines

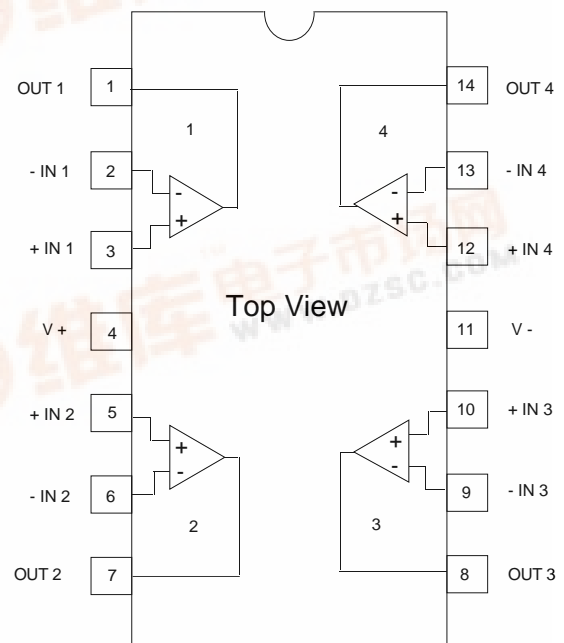
GENERAL DESCRIPTION

The HT1104Z monolithic quad operational amplifier is a versatile performer over an extremely wide temperature range. It is fabricated with Honeywell's dielectrically isolated high-temperature linear (HTMOS™) process, and is designed specifically for use in systems operating in severe high-temperature environments. All parts are burned in at 250°C to eliminate infant mortality.

These amplifiers provide guaranteed performance over the full -55 to +225°C temperature range. Typically, parts will operate up to +300°C for a year, with derated performance. The HT1104Z will operate with both single and split supplies. High-temperature applications such as transducer interfacing, amplification, active filtering, and signal buffering are all possible with the HT1104Z.

The HT1104Z is an option of the HT1104 with the ESD protection circuitry removed to achieve high input impedance. This higher impedance also provides the HT1104Z with an ultra-low bias current.

PACKAGE PINOUT

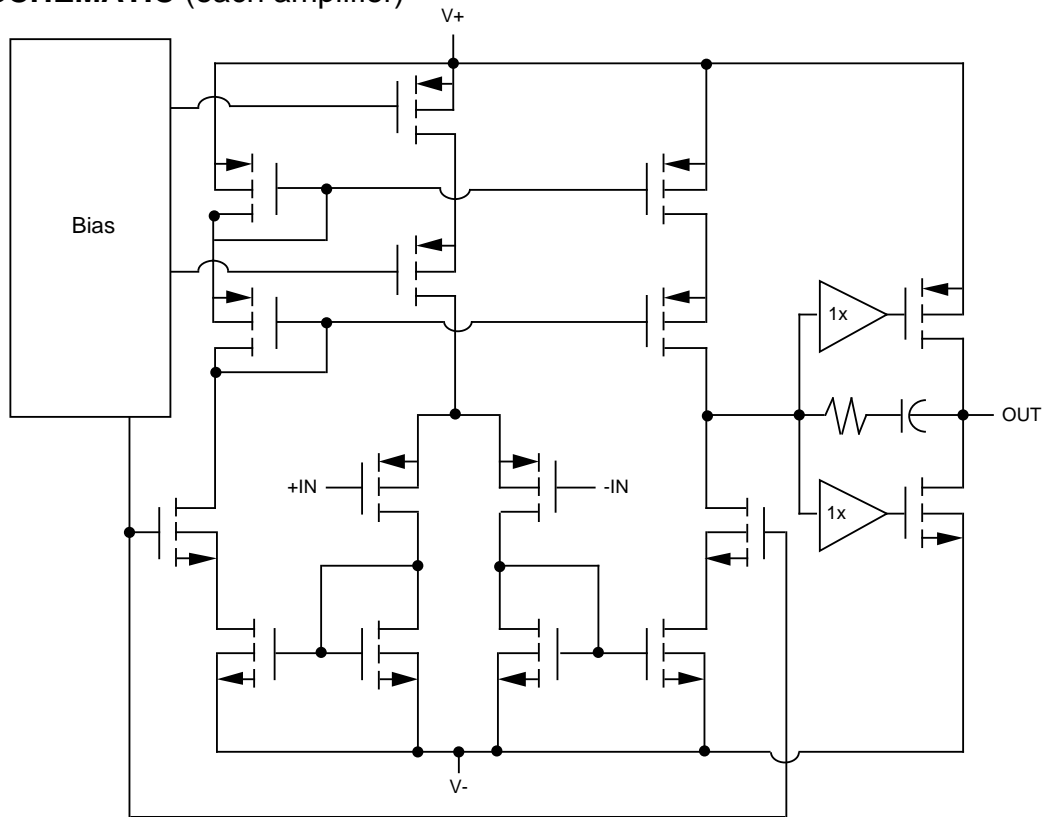


14-Lead CerDip
 $\theta_{jc} = 7^{\circ}\text{C/W}$

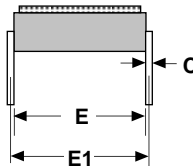
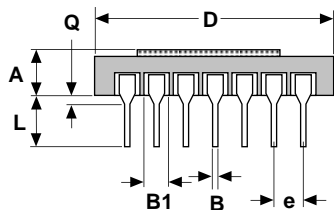


HT1104Z

SIMPLIFIED SCHEMATIC (each amplifier)



PACKAGE DETAIL



A	0.150 (max)
B	0.018 ± 0.002
C	0.010 ± 0.002
D	0.700 ± 0.010
E	0.295 REF

E1	0.300 ± 0.010
B1	0.047 ± 0.002
e	0.100 ± 0.005
L	0.125 to 0.180
Q	0.035 ± 0.010

All dimensions in inches
Leads are Gold Plated Nickel

ABSOLUTE MAXIMUM RATINGS (1)

Total Supply Voltage (V+ to V-)	13 V
Input Voltage	- 0.5 to $V_{DD} + 0.5$ V
Output Short Circuit Duration	Continuous
Input Current (each input)	±5 mA
Output Current (each output)	±50 mA
Storage Temperature	-65 to +325°C
Lead Temperature (attachment, 10 sec)	355°C
ESD Protection (2)	500 V

(1) Stresses in excess of those listed above may result in permanent damage. These are stress ratings only, and operation at these levels is not implied. Frequent or extended exposure to absolute maximum conditions may effect device reliability.

(2) Guaranteed by Design for the Human Body Model, 1.5 kΩ in series with 100 pF.

ORDERING INFORMATION

HT1104ZDC

D - Indicates package type
D = Standard DIP
For packaging options, call Honeywell

C - Indicates screening level
C = Commercial
B = High Temperature Class B