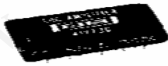


For Immediate Assistance, Contact Your Local Salesperson

勝特力材料 886-3-5758170
 勝特力電子(上海) 86-21-34070699
 勝特力電子(深圳) 86-755-83298787
 Http://www.100y.com.tw



4127

LOGARITHMIC AMPLIFIER

FEATURES

- ACCEPTS INPUT VOLTAGES OR CURRENTS OF EITHER POLARITY
- WIDE INPUT DYNAMIC RANGE
6 Decades of Current
4 Decades of Voltage
- VERSATILE
Log, Antilog, and Log Ratio Capability

DESCRIPTION

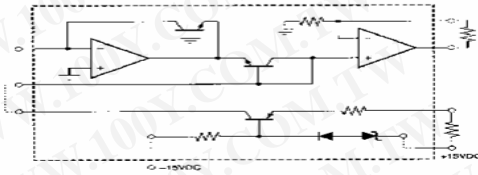
Packaged in a ceramic double wide DIP, the 4127 is the first hybrid logarithmic amplifier that accepts signals of either polarity from current or voltage sources. A special purpose monolithic chip, developed specifically for logarithmic conversions, functions accurately for up to six decades of input

current and four decades of input voltage. In addition, a current inverter and a precise internal reference allow pin programming of the 4127 as a logarithmic, log ratio, or antilog amplifier.

To further increase its versatility and reduce your system cost, the 4127 has an uncommitted operational amplifier in its package that can be used as a buffer, inverter, filter, or gain element.

The 4127 is available with initial accuracies (log conformity) of 0.5% and 1.0%, and operates over an ambient temperature range of -10°C to +70°C.

With its versatility and high performance, the 4127 has many applications in signal compression, transmitter linearization, and photostatic buffering. Manufacturers of medical equipment, analytical instruments, and process control instrumentation will find the 4127 a low cost solution in many signal processing problems.



Or, Call Customer Service at 1-800-548-6132 (USA Only)

SPECIFICATIONS

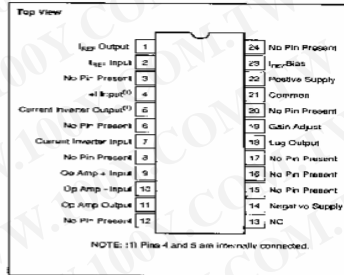
ELECTRICAL

Typical Specifications at 25°C with rated supplies, unless otherwise noted.

MODEL	4127KG	4127JG
ACCURACY 1% of MSB		
Current Source Input: 1nA to 1mA	0.5% max	1% max
Voltage Input: 1mV to 10V	0.5% max	1% max
INPUT		
Current Source Input, Pin 4	-1nA to +1mA	
Current Source Input, Pin 7	-1nA to +1mA	
Reference Current Input, Pin 2	+1nA to +1mA	
Absolute Maximum Inputs	±10mA or ±5Supply Volts	
CURRENT		
Voltage	±10V	
Current	±5mA	
Impedance	10Ω	
FREQUENCY RESPONSE		
-3dB Small Signal or Current Input of 100nA	90kHz	
of 10nA	50kHz	
of 100nA	20kHz	
of 10nA	6kHz	
Step Response to within 1% of Final Value (R = 1, A = 3)	10ms	
STABILITY		
Scale Factor Drift (ΔA/A) (°C)	±0.005%/°C	
Reference Current Drift (ΔI _R /I _R) (°C)	±0.001%/°C for I _R ≥ 1μA	
Input Offset Current Drift (ΔI _{OS} /I _{OS}) (°C)	±0.003%/°C for 490nA ≤ I _{OS} ≤ 1μA	
Input Offset Voltage Drift	10nV at 25°C; Doubles Every 10°C	
Accuracy vs Supply Variation (Reference Current)	±0.001%/V	
Input Offset Voltage	±300mV	
Input Noise - Current Input	10nA rms, 10Hz to 10kHz	
Input Noise - Voltage Input	50nV	
UNCOMMITTED OP AMP CHARACTERISTICS		
Input Offset Voltage	5mV	
Input Bias Current	40nA	
Input Impedance	1MΩ	
Large Signal Voltage Gain	80dB	
Output Current	50mA	
TEMPERATURE RANGE		
Specification	0°C to +65°C	
Operating Storage	-10°C to +70°C	
	-55°C to +125°C	
POWER SUPPLY REQUIREMENTS		
Rated Supply Voltage	±15VDC	
Supply Voltage Range	±14VDC to ±16VDC	
Supply Current Drain at Full Load, max	±20mA	
	±25mA	

NOTE: (1) Log conformity at 25°C.

PIN CONFIGURATION



PACKAGE INFORMATION(1)

MODEL	PACKAGE	PACKAGE DRAWING NUMBER
4127KG	24-Pin	075
4127JG	24-Pin	076

NOTE: (1) For detailed drawing and dimensions, please see end of data sheet, or Appendix D of Burr-Brown IC Data Book.

4127
 AL FUNCTIONS

CONNECTION DIAGRAMS

Transfer function is $E_o = -A \log \frac{I_1}{I_R}$ where I_1 is a positive input current and I_R is the resistor-programmed internal reference current (see Figure 2).

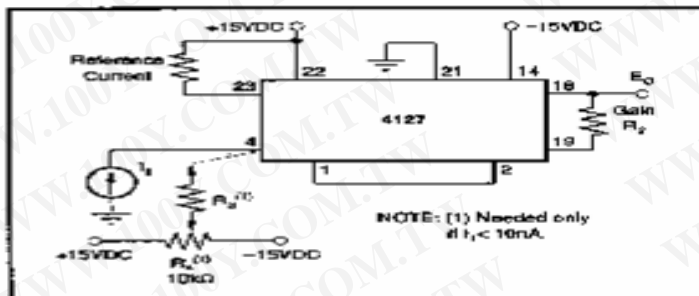


FIGURE 2. Transfer Function When I_1 is Positive.