

FEATURES

- 1 μ Vp-p Noise
- 2ppm Stability
- Low Hysteresis
- Temperature Stabilized
- 0.3ppm/ $^{\circ}$ C Drift

APPLICATIONS

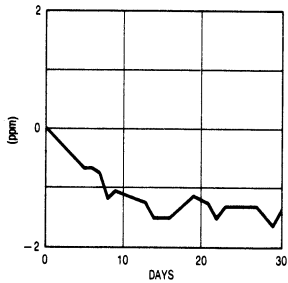
- 7-1/2 Digit Meters
- Scales
- Calibrators
- References

DESCRIPTION

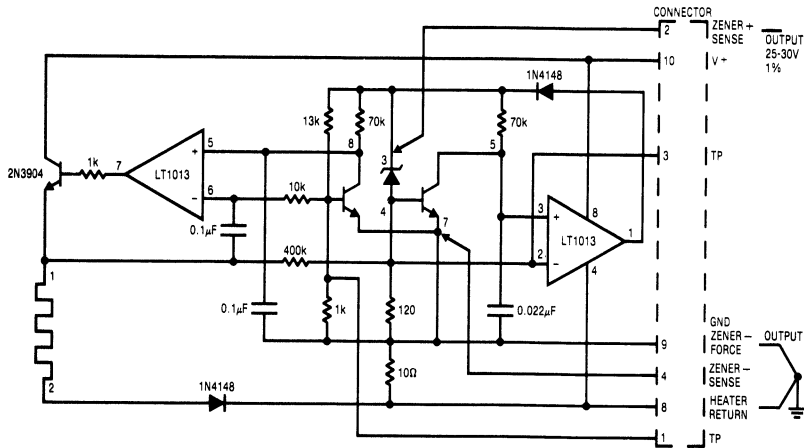
The Super-Zener is a monolithic IC voltage reference designed for exceptionally low temperature drift (0.1ppm/ $^{\circ}$ C), about 1 μ V peak-to-peak noise, and less than 5ppm long term stability. It offers superior performance to the 199 family at the expense of increased circuit complexity and thermal layout considerations.

Included on the die is the reference with temperature compensating transistor, heater for temperature stabilizing and a temperature sensing transistor. All the control and biasing circuitry is external to allow maximum flexibility and best long term stability.

Typical stabilized temperature is about 60 $^{\circ}$ C for best performance although both higher and lower temperatures can be set.

Long Term Stability


LONG TERM STABILITY OF A TYPICAL DEVICE FROM TIME = 0 WITH NO PRECONDITIONING OR AGING

7V Reference Circuit


NEW PRODUCTS

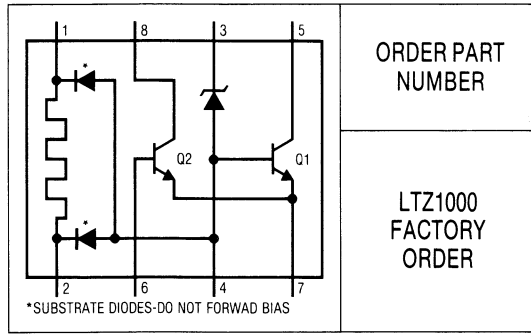
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ABSOLUTE MAXIMUM RATINGS

Heater to Substrate (Pin 4)	40V
Collector-Emitter Breakdown (Q1)	15V
Collector-Emitter Breakdown (Q2)	25V
Emitter-Base Reverse Bias	2V
Operating Temperature Range	-55°C to 125°C
Storage Temperature Range	-65°C to 150°C
Substrate Diode Forward Bias	0.1V

PACKAGE/ORDER INFORMATION



Linear Technology number of high performance devices in surface mount book printing, the fo

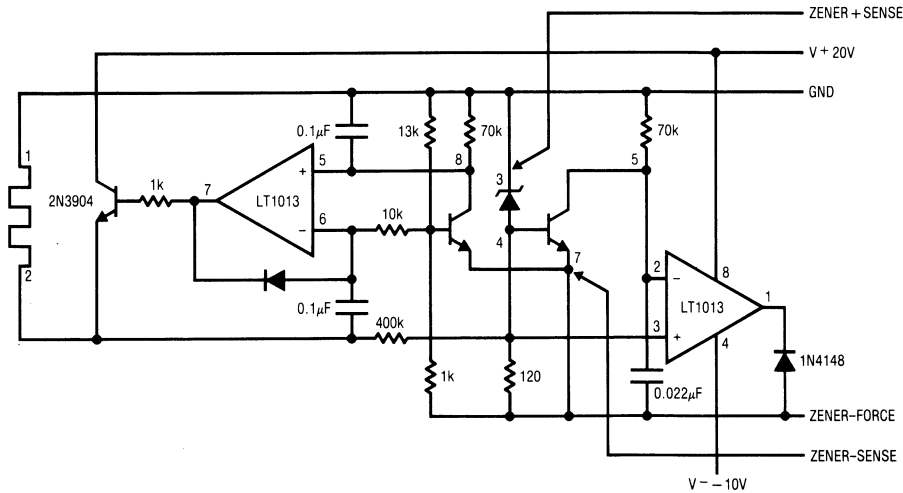
TYPICAL ELECTRICAL CHARACTERISTICS

Reference Voltage ($I_z = 5\text{mA}$)	7.2V	Long Term Stability	<2ppm/month
Drift	0.1ppm/°C	(This Measurement Test Equipment Limited)	
Operating Current	5mA	Transistor Current Gain	150
Voltage Noise (0.1Hz to 10Hz)	1 $\mu\text{Vp-p}$	Transistor V_{BE}	620mV
Heater Resistance	600 Ω	Zener Impedance ($I_z = 5\text{mA}$)	0.20 Ω

Device must be shielded from air currents. More thermal insulation around the LTZ1000 improves performance.



Negative Voltage Reference



Op Amps:

- LT1001 Precision C
- LT1008 Low Bias C
- LT1012 Low Bias C
- LT1013 Precision.
- LT1056 Precision.
- OP-07 Precision Op

Note: By the time you rea



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LINEAR TECHNOLOGY CORPORATION

1630 McCarthy Blvd., Milpitas, CA 95035
Phone: (408) 942-0810
FAX: (408) 434-0507
Telex: 499-3977

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