

HIGH TEMPERATURE LINEAR REGULATOR

HT-LREG

FEATURES

- Tested -55 to +225°C
- Output Current up to 300 mA
- Adjustable or Calibrated +15, +10, and +5V Output
- Input Voltage up to 28V
- 2.0 mA Quiescent Current
- Current Limit and Foldback Short Circuit Protection

APPLICATIONS

- Down-Hole Oil Well
- Avionics
- Turbine Engine Control
- Process Control
- Nuclear Reactor
- Electric Power Conversion

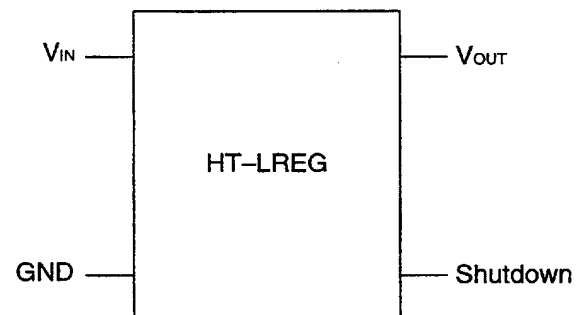
GENERAL DESCRIPTION

The HT-LREG is a hybrid linear regulator designed to operate over an extremely wide temperature range. The regulator's control circuit is fabricated with Honeywell's dielectrically isolated high-temperature (HTMOS™) process. A silicon-on-insulator MOSFET is the power device. The HT-LREG is designed specifically for severe high-temperature applications such as down-hole oil well, aerospace, turbine engine and industrial control.

The HT-LREG is available with a calibrated +5, +10, or +15V output. Output current is 300 mA over the specified temperature range, while quiescent current is 2.0 mA. Internal short circuit protection is provided which includes current limit and foldback.

All parts are burned in at elevated temperature to eliminate infant mortality. Additionally, each part is tested over -55 to +225°C to provide guaranteed performance over the entire temperature band. The HT-LREG is a high-reliability part designed specifically for applications with an extremely wide operating temperature range.

FUNCTIONAL DIAGRAM



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HT-LREG

ELECTRICAL CHARACTERISTICS

-55 to +225°C, unless otherwise specified

Parameter	Test Conditions	Typical
Output Voltage	$V_{IN} = V_{OUT} + 3VDC$ $I_{OUT} = 300\text{ mA}$	$V_{OUT} \pm 1.0\%$
Line Regulation	$V_{IN} = V_{OUT} + 3VDC$ $I_{OUT} = 50\text{ mA}$	$V_{OUT} \pm 0.3\%$
Load Regulation	$V_{IN} = V_{OUT} + 5VDC$ $I_{OUT} = 50\text{ to }300\text{ mA}$	$V_{OUT} \pm 0.5\%$
Ripple Rejection at 120 Hz	$V_{IN} = V_{OUT} + 5VDC$	-60db
Standby Current	$V_{IN} = V_{OUT} + 5VDC$ $I_{OUT} = 0$	2mA
Short Circuit Current Limit Treshold	$V_{IN} = V_{OUT} + 5VDC$	350mA
Short Circuit Current	$V_{IN} = 10V, V_{OUT} = 0V$	60mA
Noise Output	$V_{IN} = V_{OUT} + 5VDC$ $I_{OUT} = 300\text{ mA}, 25^\circ\text{ C}$	2mVRMS
Differential Voltage $V = V_{IN} - V_{OUT}$	$I_{OUT} = 300\text{ mA}$	3V Min

ABSOLUTE MAXIMUM RATINGS (1)

Rating	Symbol	Value	Unit
Output Current	I_{OUT}	350	mA
Input Voltage	V_{IN}	+30	VDC
Operating Temperature	T_{OP}	300	° C
Power Dissipation	P_d	5	W

(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 affect device reliability.

ORDERING INFORMATION

Type	V_{IN}	V_{OUT}	MAX I_{OUT}
HT-LREG 05	8-25V	5V	300mA
HT-LREG 10	13-28V	10V	300mA
HT-LREG 15	18-28V	15V	300mA

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