

HIGH TEMPERATURE NEGATIVE LINEAR REGULATOR

HTNLREG

FEATURES

- Specified Over -55 to +225°C
- Output Current to -300 mA
- Adjustable or Calibrated -15, -10, and -5V Output
- Input Voltage to -28V
- -3.0 mA Quiescent Current
- Current Limit and Foldback Short Circuit Protection
- Hermetic 4-Pin Package

APPLICATIONS

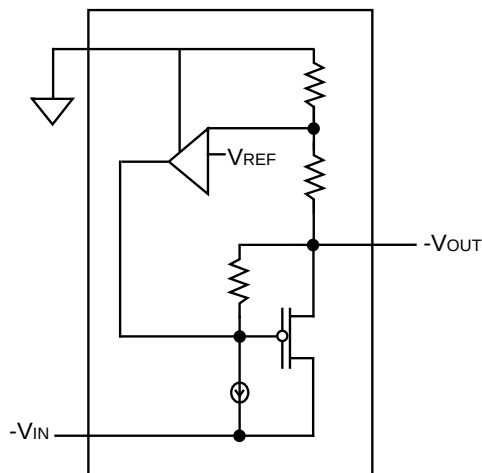
- Down-Hole Oil Well
- Avionics
- Turbine Engine Control
- Industrial Process Control
- Nuclear Reactor
- Electric Power Conversion
- Heavy Duty Internal Combustion Engines

GENERAL DESCRIPTION

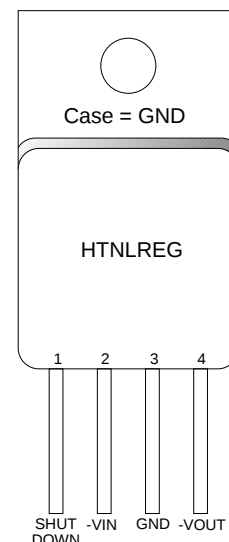
The HTNLREG is a hybrid linear regulator designed to operate over an extremely wide temperature range. The regulator's control circuit is fabricated with Honeywell's dielectrically isolated high-temperature (HTMOS™) process. A silicon-on-insulator MOSFET is the power device. The HTNLREG is designed specifically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

The HTNLREG is available with a calibrated -5, -10, or -15V output. Output current is -300 mA over the specified temperature range, while quiescent current is -3.0 mA. Internal short circuit protection is provided which includes current limit and foldback. All parts are burned in at +250°C to eliminate infant mortality. Typically, parts will operate up to +300°C for a year, with derated performance. The HTNLREG is a high-reliability part designed specifically for applications with an extremely wide operating temperature range.

FUNCTIONAL DIAGRAM



PACKAGE DRAWING



ELECTRICAL CHARACTERISTICS

TA = -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	$V_{IN} = V_{OUT} - 5VDC$ $I_{OUT} = 0$	-3mA
Short Circuit Current Limit Threshold	$V_{IN} = V_{OUT} - 5VDC$	-350mA
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
Storage Temperature	Top	-65 to +325° C	° C
Power Dissipation	Pd	5	W

ORDERING INFORMATION

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

(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.

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