



High Temperature, 3-Terminal, Negative Linear Regulator featuring Low Dropout and Short Circuit Protection

FEATURES

- Operating Temperature Range: -55 °C to + 200 °C
- Output Current : 250Ma
- Fixed Output Voltages -3.3, -5.0, -10, -12, or -15
- Low Dropout Voltage : < 1 Volt
- Short Circuit Protected
- Input Voltage up to 32Vdc
- TO-254 Hermetic Metal Package
- Well behaved turn-on characteristics

APPLICATIONS

- Downhole Logging
- Avionics / Space Systems
- Earth Sciences
- Measurement While Drilling
- Turbine Engine control

OUTPUT vs DASH

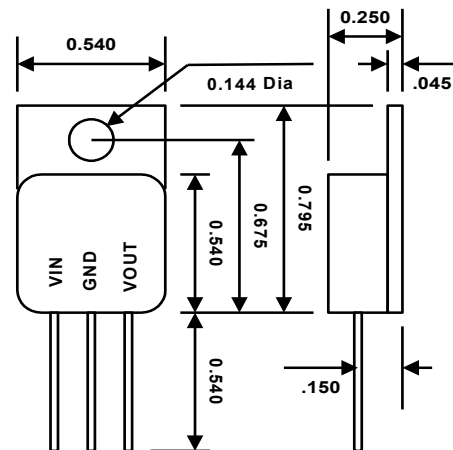
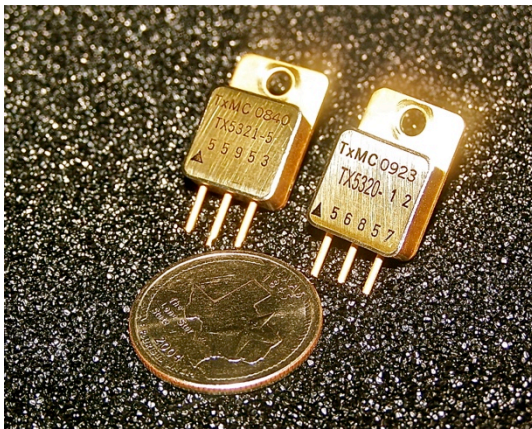
- TX5321-3.3 -3.3 Volts
- TX5321-5.0 -5.0 Volts
- TX5321-10 -10 Volts
- TX5321-12 -12 Volts
- TX5321-15 -15 Volts

DESCRIPTION

The TX5321 is a family of hybrid linear regulators specifically designed for sustained high temperature applications. All parts are 100% screened and tested to eliminate infant mortality. All devices receive an active burn-in at 150°C for 80 hours.

The TX5321 is a precision regulator with voltage output settings trimmed to specific voltages within $\pm 0.5\%$. Users may select from 5 fixed output voltages of -3.3, -5.0, -10, -12, -15 volts or custom output voltages upon request. The TX5321 is self-protected against prolonged short circuits at any temperature within its operating range. Only two 10uF external capacitors are necessary to insure unit stability and to improve high frequency load regulation. The low voltage dropout feature enhances functionality by maintaining the output voltage with input voltages only 0.8 volts greater than the output.

The TX5321 is also designed to shut-down to a minimum current level (< 4 mA) in the presence of an output short circuit and recover when the short is removed. This is designed to protect both the regulator and system components.



TO-254 (Top View)

TX5321 Specifications

ABSOLUTE MAXIMUM RATINGS

Power Dissipation	6 Watts
Input Voltage	+ 32Vdc
Operating Case Temperature Range	-55°C to + 200°C
Storage Temperature Range	-65°C to + 240°C
Lead Soldering Temperature	+300°C

ELECTRICAL CHARACTERISTICS (unless otherwise indicated: $T_{case} = 25^{\circ}C$)

PARAMETER	CONDITIONS	TYP	
Line Regulation	$I_{out} = 250mA$	0.1	%
Load Regulation	$E_{in} = E_{out} + 2 Vdc$ $50mA \leq I_{out} \leq 250mA$	0.5	%
Dropout voltage	$I_{out} = 50mA, T_{case} = 25^{\circ}C$.1	Vdc
	$I_{out} = 250mA, T_{case} = 25^{\circ}C$.8	Vdc
	$I_{out} = 50mA, T_{case} = 200^{\circ}C$.2	Vdc
	$I_{out} = 250mA, T_{case} = 200^{\circ}C$.9	Vdc
Quiescent Current	$E_{in} = E_{out} + 2 Vdc$ $T_{case} = 25^{\circ}C$	4.5	mA
	$T_{case} = 200^{\circ}C$	4.2	mA
Current Limit	$E_{in} = E_{out} + 2 Vdc$	480 (Nom)	mA
Turn on Time / Overshoot		< 2	ms
Temperature Stability	$E_{in} = E_{out} + 2 Vdc @ 180^{\circ}C$	-1.4% max	See Figure 1
Ripple Rejection			See Figure 2
Thermal Resistance	Junction to Case	8.7	$^{\circ}C/W$

Performance Graphs

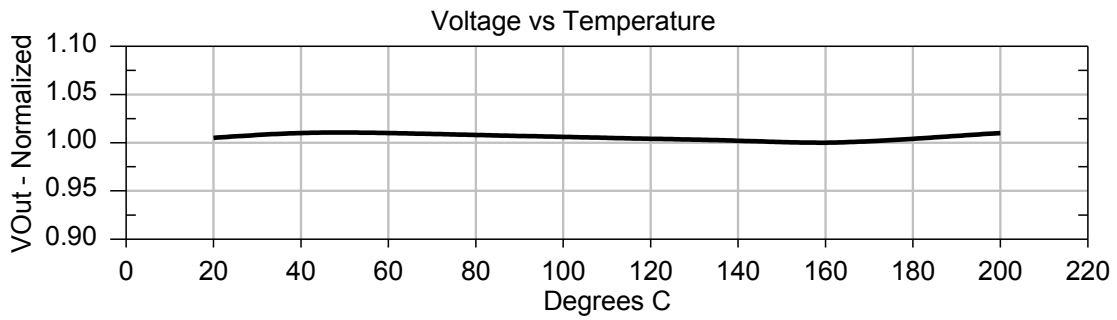


Figure 1

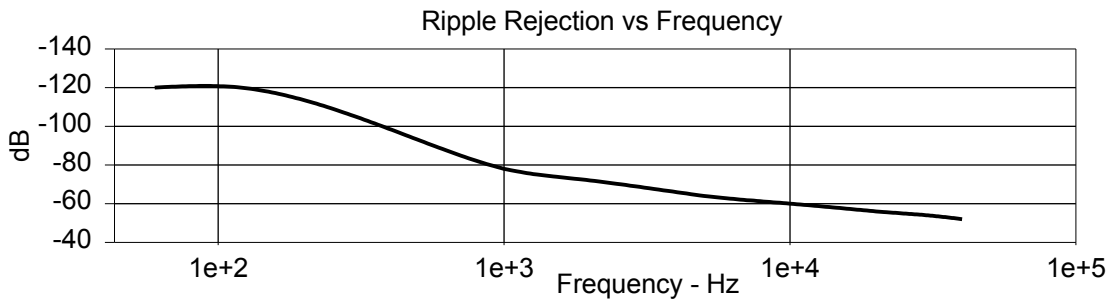
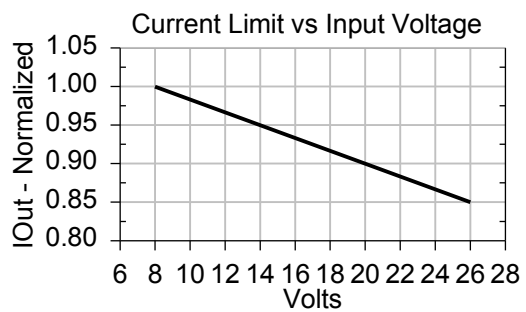
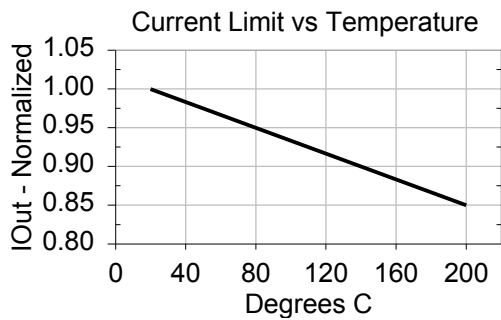


Figure 2



Current Limit change with Temperature and Input Voltage