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NEW ENGLAND SEMICONDUCTOR

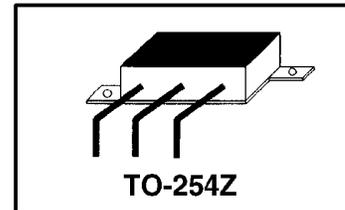
NSG2591

LOW DROPOUT VOLTAGE REGULATORS

**3 TERMINAL
POSITIVE
ADJUSTABLE**

- 1V Dropout, 1.5V @ Max Current
- 0.01% Load Regulation
- 0.015% Line Regulation
- 1% Reference Voltage
- Hermetic TO-254Z Pak
- Output Current 3.0A

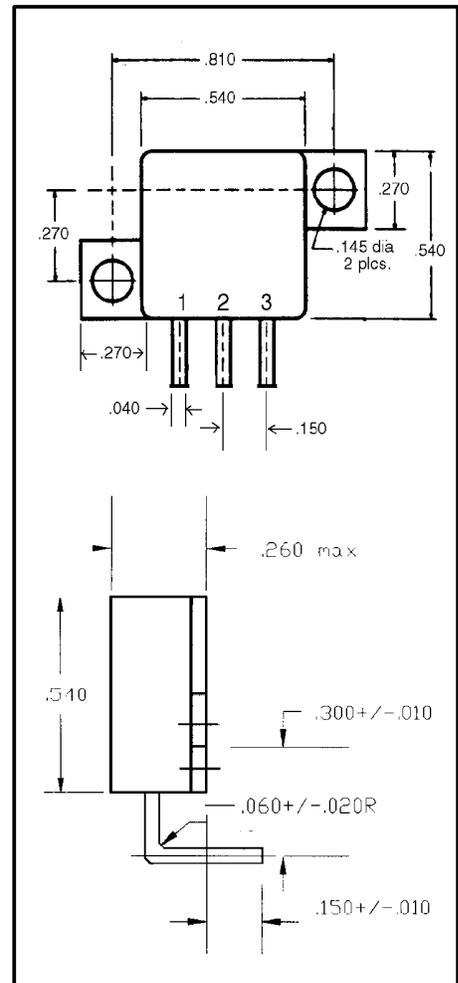
Pinout	
Pin 1	Adjust
Pin 2	V _{out}
Pin 3	V _{in}



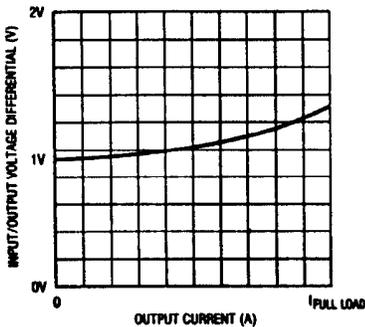
ABSOLUTE MAXIMUM RATINGS

Power Dissipation.....	Internally limited
Operating Junction Temperature Range.....	- 55°C to + 150°C
Storage Temperature.....	- 65°C to + 150°C
Output Current--	
NSG2591.....	3.0 A
Input Voltage.....	35 V

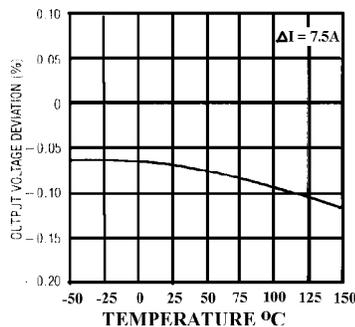
MECHANICAL OUTLINE



**DROPOUT VOLTAGE vs
OUTPUT CURRENT**



LOAD REGULATION



NEW ENGLAND SEMICONDUCTOR

6 Lake Street Lawrence, MA 01841
1-800-446-1158 / (978) 794-1666 / FAX: (978) 689-0803

T4-4.8-860-028 REV: --



NSG
NEW ENGLAND SEMICONDUCTOR

NSG2591

ELECTRICAL CHARACTERISTICS ($T_C = 25^{\circ}\text{C}$ unless otherwise noted)

Parameter	Conditions	NSG2591			Units
		Min	Typ	Max	
Line Regulation	$I_L = 10 \text{ mA}$, $1.5\text{V} \leq V_{IN} - V_{OUT} \leq 15\text{V}$ $T_j = 25^{\circ}\text{C}$		0.015	0.2	%
			0.035	0.2	%
			0.05	0.5	%
Load Regulation	$ V_{IN} - V_{OUT} = 3\text{V}$ $10 \text{ mA} \leq I_{OUT} \leq I_{FULL \text{ LOAD}}$ $T_j = 25^{\circ}\text{C}$ (1,2,3)		0.1	0.3	%
			0.2	0.4	%
Thermal Regulation NSG2591	$T_A = 25^{\circ}\text{C}$, 30 ms Pulse		0.004	0.02	%/W
Adjustment Pin Current Change	$10 \text{ mA} \leq I_{OUT} \leq I_{FULL \text{ LOAD}}$ $1.5 \text{ V} \leq V_{IN} - V_{OUT} \leq 25\text{V}$		0.2	5	μA
Adjustment Pin Current	$T_j = 25^{\circ}\text{C}$		55		μA
Reference Voltage	$I_{OUT} = 10 \text{ mA}$, $T_j = 25^{\circ}\text{C}$ $ V_{IN} - V_{OUT} = 3\text{V}$ $10 \text{ mA} \leq I_{OUT} \leq I_{FULL \text{ LOAD}}$ $1.5 \text{ V} \leq V_{IN} - V_{OUT} \leq 25 \text{ V}^{(3)}$	1.238	1.250	1.262	V
		1.225	1.250	1.270	V
Temperature Stability	$-55^{\circ}\text{C} \leq T_j \leq +150^{\circ}\text{C}$		0.5		%
Minimum Load Current	$ V_{IN} - V_{OUT} = 25\text{V}$		5	10	mA
Current Limit NSG2591	$ V_{IN} - V_{OUT} = 5\text{V}$ $ V_{IN} - V_{OUT} = 25\text{V}$	3.2	4.0		A
		0.2	0.5		A
RMS Output Noise (% of V_{OUT})	$T_A = 25^{\circ}\text{C}$, $10 \text{ Hz} \leq f \leq 10 \text{ kHz}$		0.003		%
Ripple Rejection Ratio	$f = 120 \text{ Hz}$ $C_{ADJ} = 25 \mu\text{F}$, $C_{OUT} = 25 \mu\text{F}$ Tantalum $I_{OUT} = I_{FULL \text{ LOAD}}$, $ V_{IN} - V_{OUT} = 3\text{V}$	60	75		dB
Long-Term Stability	$T_A = 125^{\circ}\text{C}$, 1000 Hours		0.3	1	%
Dropout Voltage	$\Delta V_{REF} = 1\%$, $I_{OUT} = I_{FULL \text{ LOAD}}$		1.3	1.5	V

- 1). Load and line regulation are measured at a constant junction temperature by low duty cycle pulse testing.
- 2). Line and load regulation are guaranteed up to the maximum power dissipation (30w for NSG2591). Power dissipation is determined by the input/output differential and the output current. Guaranteed maximum dissipation will not be available over the full input/output voltage range.
- 3). $I_{FULL \text{ LOAD}}$ is defined in the current limit curves. $I_{FULL \text{ LOAD}}$ curve is defined as the minimum value of current limit as a function of input to output voltage. Note that the 30w power dissipation is only achievable over a limited range of input to output voltage.

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