LOW DROPOUT VOLTAGE REGULATORS

IL2931AZ-5

The IL2931 series consists of positive fixed and adjustable output voltage regulators that are specifically designed to maintain proper regulation with an extremely low input-to-output voltage differential. These devices are capable of supplying output currents in excess of 100 mA and feature a low bias current of 0.4 mA at 10 mA output.

Designed primarily to survive in the harsh automotive environment, these devices will protect all external load circuitry from battery jump starts, and excessive line transients during load dump. This series also includes internal current limiting, thermal shutdown, and additionally, is able to withstand temporary power-up with mirror-image insertion.

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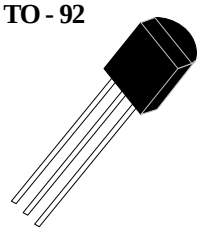
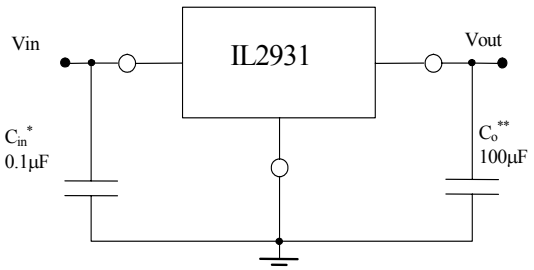


Pin 1. Input
2. Ground
3. Output

Due to the low dropout voltage and bias current specifications, the IL2931 series is ideally suited for battery powered industrial and consumer equipment where an extension of useful battery life is desirable. The 'C' suffix adjustable output regulators feature an output inhibit pin which is extremely useful in microprocessor-based systems.

- Input-to-Output Voltage Differential of Less Then 0.6 V at 100mA
- Output Current in Excess of 100 mA
- Low Bias Current
- 60 V Load Dump Protection
- -50 V Reverse Transient Protection
- Internal Current Limiting with Thermal Shutdown
- Temporary Mirror-Image Protection
- Ideally Suited for Battery Powered Equipment

Standard Application



Maximum Ratings

Rating	Symbol	Value	Unit
Input Voltage Continuous	V_I	40	V_{dc}
Transient Input Voltage ($\tau \leq 100ms$)	$V_{I(\tau)}$	60	V_{pk}
Translent Reverse Polarity Input Voltage 1.0% Duty Cycle, $\tau \leq 100ms$	$- V_{I(\tau)}$	-50	V_{pk}
Thermal Resistance Junction to Case	OjC	83	°C/W
Thermal Resistance, Junction to Ambient	OjA	178	°C/W
Junction Temperature	T_j	150	°C

ELECTRICAL CHARACTERISTICS

(V_{in}=14V,Io=10mA,C_i=0.1μF,Co=100μF,Tj=25°C, (Note 1).)

Characteristic	Symbol	Norm		Unit
		Min	Max	
Output Voltage V_{in}=14V, Io=10mA V_{in}=6.0V to 26V, Io≤100mA.	Vo	4.81 4.75	5.19 5.25	V
Line Regulation V_{in}=9.0V to 16V V_{in}=6.0V to 26V	Reg_{line}	- -	10 30	mV
Load Regulation (Io=5.0mA to 100mA)	Reg_{load}	-	50	mV
Bias Current V_{in}=14V, Io=100mA. V_{in}=6.0V to 26V, Io=10mA.	I_B	- -	30 1.0	mA
Dropout Voltage Io=10mA Io=100mA	V_I-Vo	- -	0.2 0.6	V
Over-Voltage Shutdown Threshold	$V_{th(OV)}$	26	40	V
Output Voltage with Reverse Polarity Input (V_{in}=-15V)	-Vo	-0.3	-	V

Note 1: Low duty cycle pulse techniques are used during test to maintain junction temperature as to ambient as possible.

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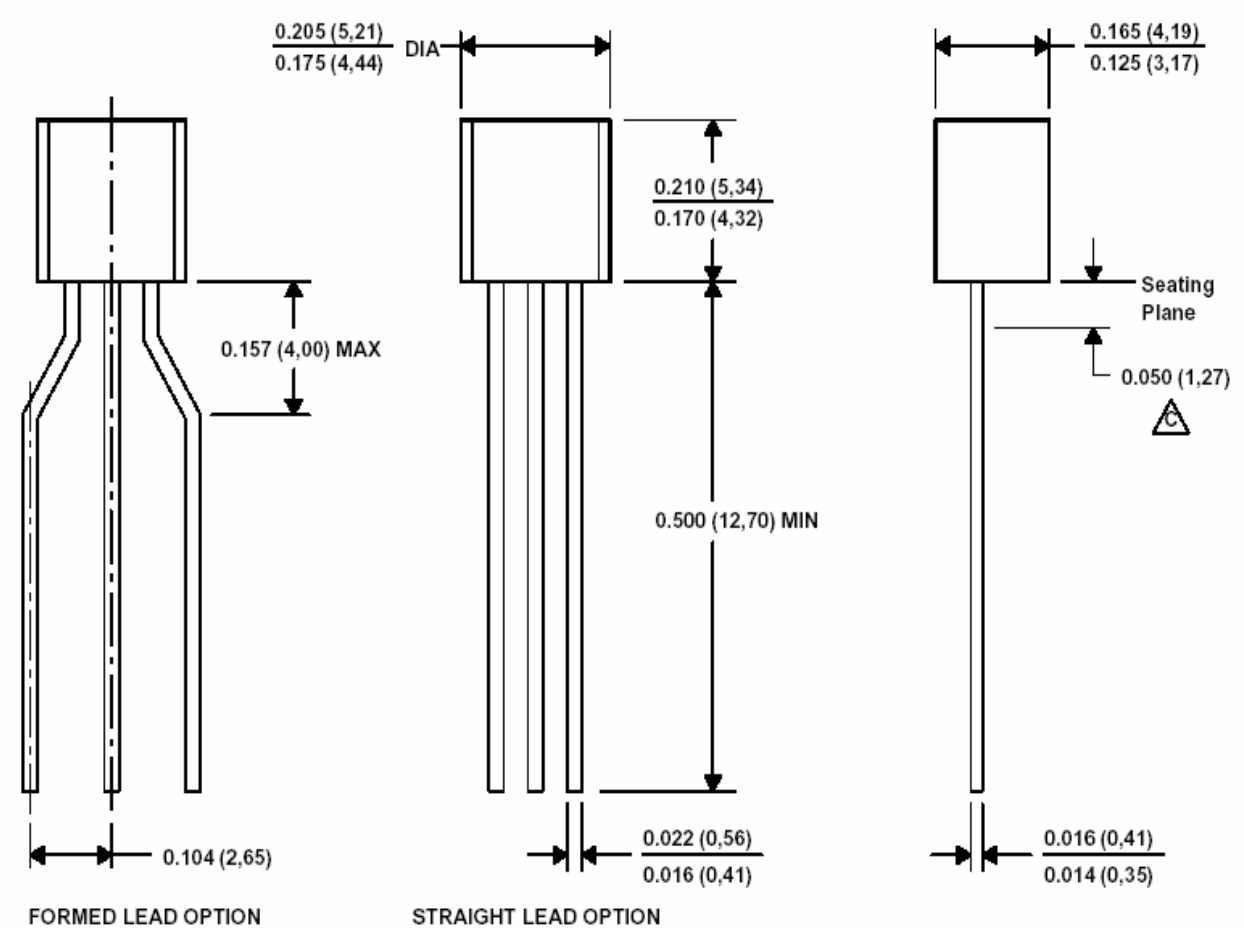
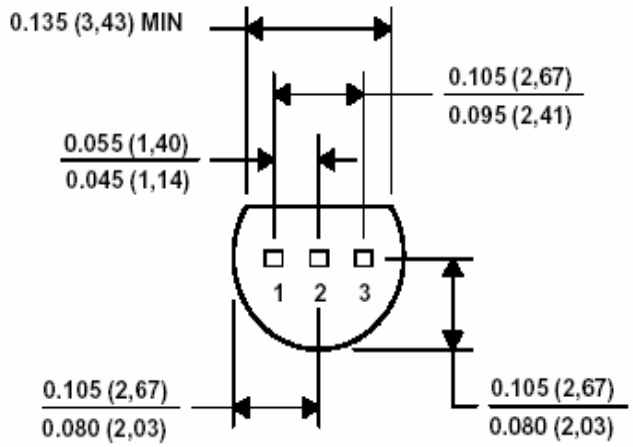

0.205 (5,21)
0.175 (4,44)
DIA
0.210 (5,34)
0.170 (4,32)
0.165 (4,19)
0.125 (3,17)
Seating
Plane
0.050 (1,27)
0.157 (4,00) MAX
0.500 (12,70) MIN
0.104 (2,65)
0.022 (0,56)
0.016 (0,41)
0.016 (0,41)
0.014 (0,35)
FORMED LEAD OPTION
STRAIGHT LEAD OPTION


0.135 (3,43) MIN
0.105 (2,67)
0.095 (2,41)
0.055 (1,40)
0.045 (1,14)
1
2
3
0.105 (2,67)
0.080 (2,03)
0.105 (2,67)
0.080 (2,03)