

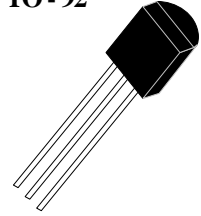
# LOW DROPOUT VOLTAGE REGULATORS

**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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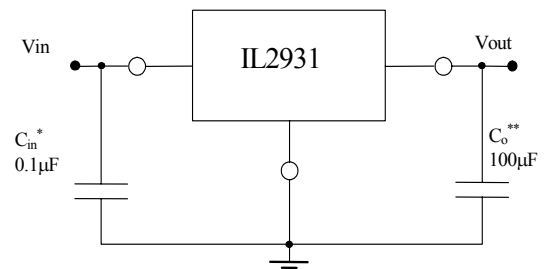


Pin 1. Input  
2. Ground  
3. Output

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 Than 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	$\theta_{jC}$	83	$^{\circ}C/W$
Thermal Resistance, Junction to Ambient	$\theta_{jA}$	178	$^{\circ}C/W$
Junction Temperature	$T_j$	150	$^{\circ}C$

# **ELECTRICAL CHARACTERISTICS**

( $V_{in}=14V$ ,  $I_o=10mA$ ,  $C_i=0.1\mu F$ ,  $C_o=100\mu F$ ,  $T_j=25^{\circ}C$ , (Note 1).)

Characteristic	Symbol	Norm		Unit
		Min	Max	
Output Voltage $V_{in}=14V$ , $I_o=10mA$ $V_{in}=6.0V$ to $26V$ , $I_o\leq 100mA$ .	$V_o$	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 ( $I_o=5.0mA$ to $100mA$ )	$Reg_{load}$	-	50	mV
Bias Current $V_{in}=14V$ , $I_o=100mA$ . $V_{in}=6.0V$ to $26V$ , $I_o=10mA$ .	$I_B$	- -	30 1.0	mA
Dropout Voltage $I_o=10mA$ $I_o=100mA$	$V_I-V_o$	- -	0.2 0.6	V
Over-Voltage Shutdown Threshold	$V_{th(OV)}$	26	40	V
Output Voltage with Reverse Polarity Input ( $V_{in}=-15V$ )	$-V_o$	-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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