

**DESCRIPTION**

The LP2950 is monolithic integrated voltage regulators with low dropout voltage, and low quiescent current. It includes many features that suitable for different applications.

The LP2950 is available in TO-92 and TO-252 packages.

ORDERING INFORMATION

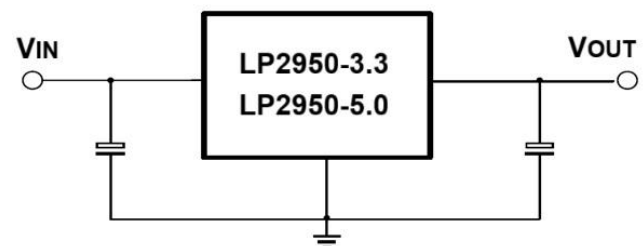
Package Type	Part Number		
TO-92 A: SPQ: 2,000pcs/Box B: SPQ: 1,000pcs/Bag	Z	LP2950ZA-33 LP2950ZA-50	
		LP2950ZB-33 LP2950ZB-50	
TO-252 SPQ: 2,500pcs/Reel		D	LP2950DR-33 LP2950DR-50
Note	Output Voltage: 33= 3.3V, 50=5.0V R: Tape & Reel Y: Ammo or Bulk A=Ammo Packing B=Bulk Packing		
AiT provides all RoHS products			

FEATURES

- Fixed output versions 3.3V and 5.0V are available
- High accuracy output voltage
- Extremely low quiescent current and dropout voltage
- Extremely tight load and line regulation
- Current and thermal limiting
- Very low temperature coefficient
- Output voltage programmable for LP2951

APPLICATION

- Grid Infrastructure
- Factory Automation
- Motor Drives
- Building Automation

TYPICAL APPLICATION



PIN DESCRIPTION

<p>LP2950 TO-92</p> <p>OUT GND IN</p> <p>TO-92, Z Top View</p>		<p>LP2950 TO-252</p> <p>GND</p> <p>IN OUT</p> <p>TO-252, D Top View</p>	
Pin #		Symbol	Function
TO-92	TO-252		
1	3	OUT	Output
2	2	GND	Ground
3	1	IN	Input

ABSOLUTE MAXIMUM RATINGS

V _{CC} , Supply Voltage		-0.3V ~ +30V
V _{FB} , Feedback Voltage		-1.5V ~ +30V
V _{SHDN} , Shutdown Voltage		-0.3V ~ +30V
P _D , Power Dissipated		Internally Limited
T _J , Operation Junction Temperature		-40°C ~ +125°C
T _{STG} , Storage Temperature		-65°C ~ +150°C
θ _{JA} , Junction-to-Ambient	TO-92	180°C/W
	TO-252	92°C/W
θ _{JC} , Junction-to-Case	TO-92	83°C/W
	TO-252	6°C/W

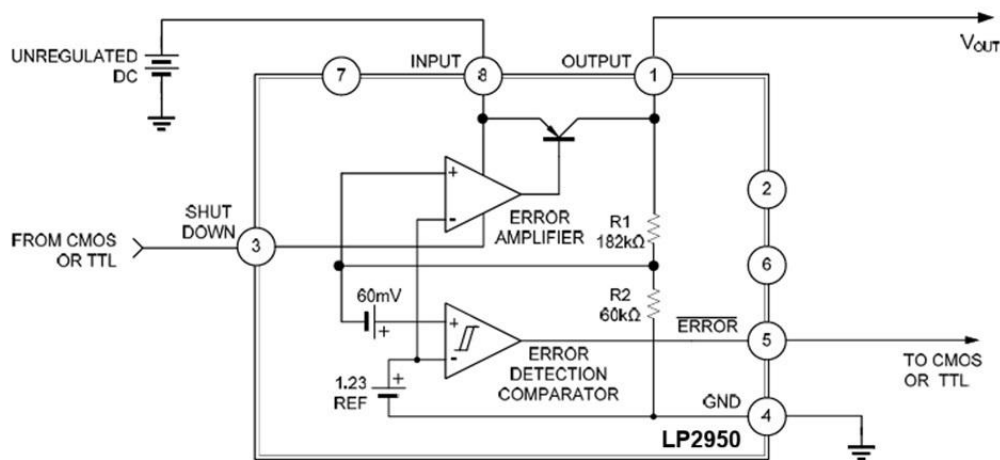
Stress beyond above listed "Absolute Maximum Ratings" may lead permanent damage to the device. These are stress ratings only and operations of the device at these or any other conditions beyond those indicated in the operational sections of the specifications are not implied. Exposure to absolute maximum rating conditions for extended periods may affect device reliability.

**ELECTRICAL CHARACTERISTICS**

$T_J=25^{\circ}\text{C}$, $V_{IN}=6\text{V}$, $I_L=100\mu\text{A}$, $C_L=1\mu\text{F}$, unless otherwise noted.

Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Output Voltage	V_{OUT}	$T_J=25^{\circ}\text{C}$	$V_{OUT}\times 0.98$	V_{OUT}	$V_{OUT}\times 1.02$	V
		$100\mu\text{A}\leq I_L\leq 100\text{mA}$, $T_J\leq T_{J(\text{max})}$	$V_{OUT}\times 0.98$	V_{OUT}	$V_{OUT}\times 1.02$	
Output Voltage Temperature Coefficient	$T_C V_O$	-	20	-	100	ppm/ $^{\circ}\text{C}$
Line Regulation	ΔV_{OUT}	$6\text{V}\leq V_{IN}\leq 30\text{V}$	0.03	0.10	0.20	%
Load Regulation	ΔV_{OUT}	$100\mu\text{A}\leq I_L\leq 100\text{mA}$	0.04	0.10	0.20	%
Dropout Voltage	V_D	$I_L=100\mu\text{A}$	50	80	150	mV
		$I_L=100\text{mA}^*$	380	450	600	
Ground Current	I_G	$I_L=100\mu\text{A}$	-	120	140	μA
		$I_L=100\text{mA}$	-	12	14	mA
Dropout Ground Current	-	$V_{IN}=(V_{ONOM}-0.5)\text{V}$, $I_L=100\mu\text{A}$	-	170	200	μA
Current Limit	I_{LIMIT}	$V_{OUT}=0$	130	190	250	mA

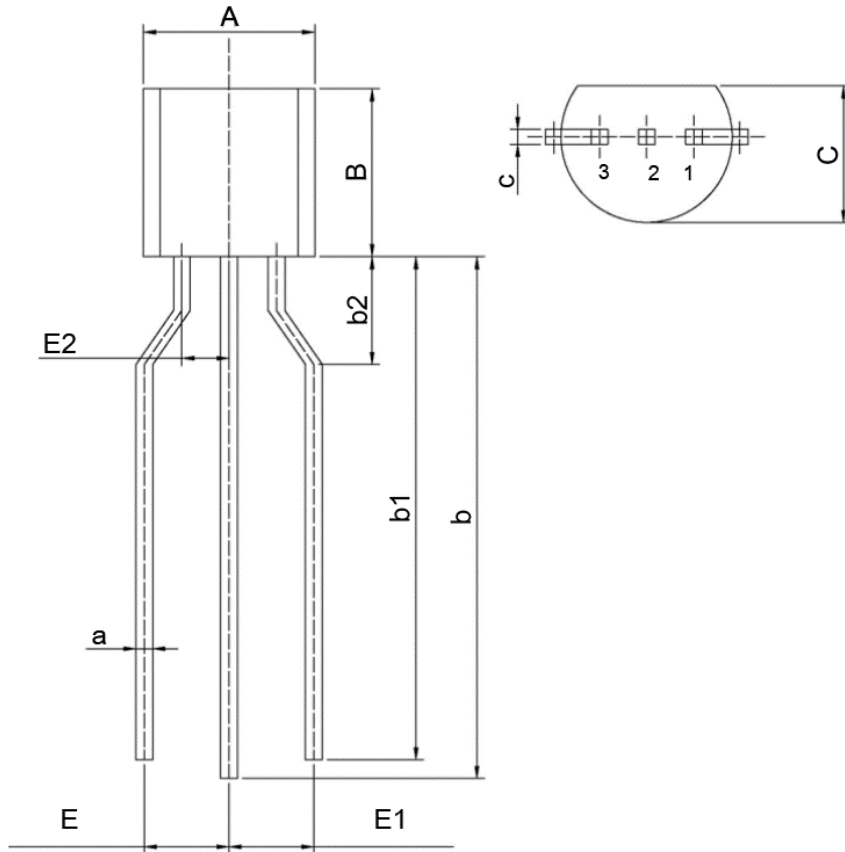
*Dropout Voltage is defined as the input to output differential at which the output voltage drops 100mV below its nominal value measured at 1V differential

BLOCK DIAGRAM



PACKAGE INFORMATION

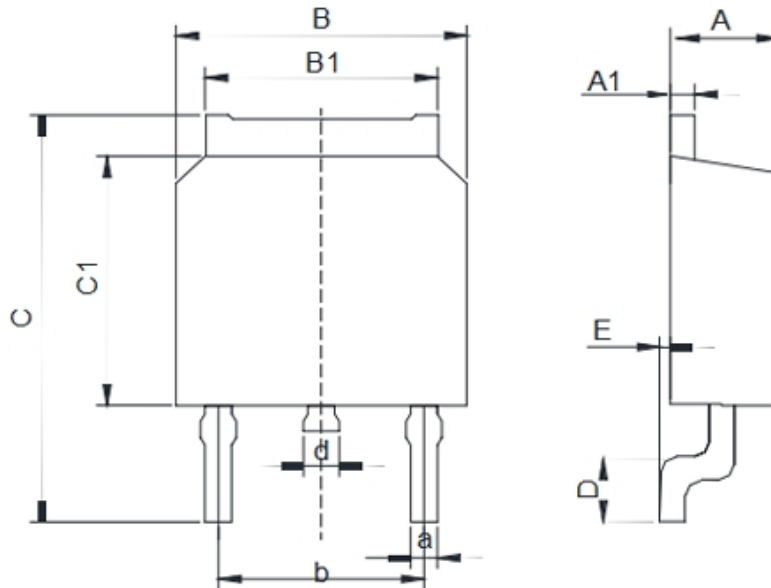
Dimension in TO-92 (Unit: mm)



Symbol	Millimeters	
	Min	Max
A	4.400	4.800
a	0.400	0.600
B	4.300	4.700
b	13.000	15.000
b1	12.50	14.500
b2	2.000	3.000
C	3.400	3.800
c	0.300	0.500
E	2.400	2.800
E1	2.400	2.800
E2	1.220	1.320



Dimension in TO-252 (Unit: mm)



Symbol	Min.	Max.
A	2.100	2.500
A1	0.450	0.700
a	0.500	0.800
B	6.300	6.750
B1	5.100	5.500
b	4.450	4.750
C	9.200	10.600
C1	5.300	6.300
D	0.900	1.750
d	0.700	1.200
E	0.000	0.230



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