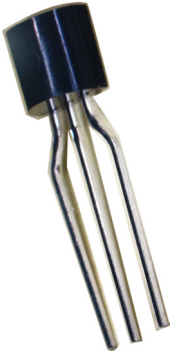


Low Dropout Voltage Regulator **multicomp**^{PRO}

RoHS
Compliant



Description

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

Features

- Fixed output 3V, 3.3V, 5V 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

Absolute Maximum Ratings (Ta=25°C)

Characteristic	Symbol	Value	Unit
Supply voltage	V _{CC}	-0.3 to +30	V
Feedback voltage	V _{FB}	-1.5 to +30	
Shutdown voltage	V _{SHDN}	-0.3 to +30	
Junction-to-Ambient	R _{thJA}	160	°C/W
Junction-to-Case	R _{thJC}	83	
Power dissipation	P _D	Internally Limited	W
Operation junction temperature	T _J	-40 to 125	°C
Storage temperature	T _{stg}	-65 to 150	

Absolute maximum ratings are those values beyond which the device could be permanently damaged. Absolute maximum ratings are stress ratings only and functional device operation is not implied.

Low Dropout Voltage Regulator **multicomp** PRO

Electrical Characteristics (unless otherwise specified: $V_{IN}=V_o+1V$, $I_L=100\mu A$, $C_L=1\mu F$, $T_J=25$)

Characteristic	Symbol	Conditions	Min	Typ	Max	Unit	
Output voltage	V_{OUT}	$T_J = 25^\circ C$ *1	$V_{OUT} \times 0.98$	V_{OUT}	$V_{OUT} \times 1.02$	V	
		$-25^\circ C \leq T_J \leq +85^\circ C$ *1					
Output voltage	I_{OUT}	$100\mu A \leq I_L \leq 100mA$ $T_J T_J(max)$					
Output voltage temperature coefficient	T_{cV_o}			50	120	ppm/ $^\circ C$	
Line regulation	ΔV_{OUT}	$(V_o+1V) \leq V_{IN} \leq 30V$		0.03	0.2	%	
Load regulation		$100\mu A \leq I_L \leq 100mA$		0.04			
Dropout voltage	V_D	$I_L = 100 A$		50	150	mV	
		$I_L = 100mA$ *2		380	600		
Ground current	I_g	$I_L = 100 A$		75	140	μA	
		$I_L = 100mA$		8	14	mA	
Dropout ground current		$V_{IN} = (V_o-0.5V)$, $I_L = 100\mu A$		110	200	μA	
Current limit	I_{LIMIT}	$V_{OUT} = 0$	140	160	220	mA	
Output noise(10Hz~100kHz)	eN	$C_L=1\mu F$		430		μV	
		$C_L=200\mu F$		160			
		$C_L=3.3\mu F$		100			
Reference voltage temperature coefficient	$V_{REF(TC)}$			50		ppm/ $^\circ C$	
Feedback bias current temperature coefficient	$I_{FB(TC)}$			0.1		nA/ $^\circ C$	
Error Comparator							
Output leakage current	$I_{O(LEAK)}$	$V_{OH}=30V$		0.01	1	μA	
Output low voltage	V_{OL}	$V_{IN}=4.5V$, $I_{OL}=400\mu A$		150	250	mV	
Threshold voltage	Upper	$V_{IN}=6V$	40	60			
	Lower			V_{THL}	75		95
Hysteresis	V_{HYS}			15			
Shutdown Input							
Input logic voltage	Low	V_{IL}	Regulator ON			0.7	V
	High	V_{IH}	Regulator OFF	2			
Shutdown pin input current	I_{SHDN}	$V_{SHDN}=2.4V$		30	50	μA	
		$V_{SHDN}=30V$		450	600		
Regulator output current shutdown	I_{DFF}	$V_{SHDN} 2V$, $V_{IN} 30V$, $V_{OUT}=0$		3	10		

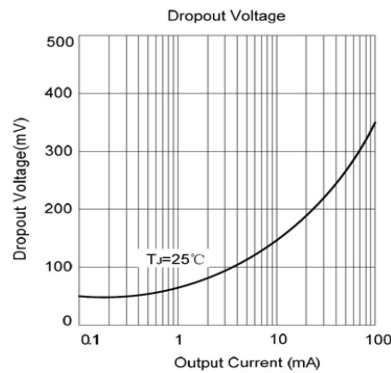
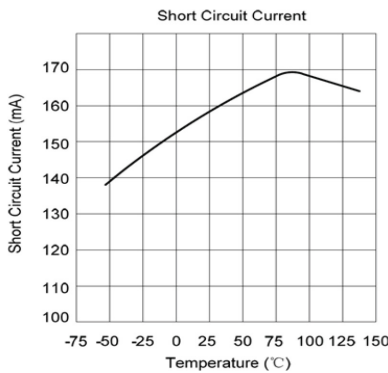
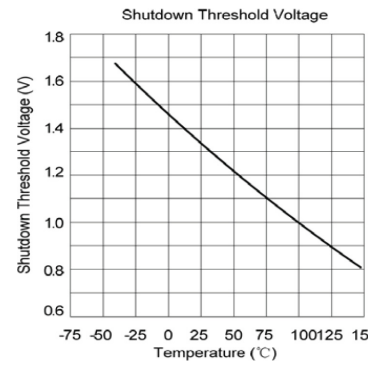
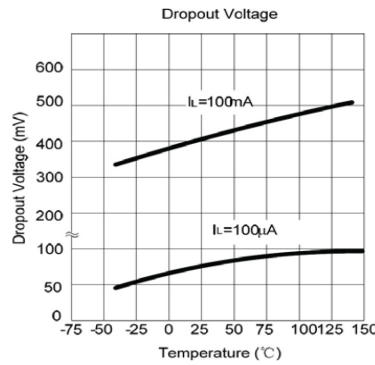
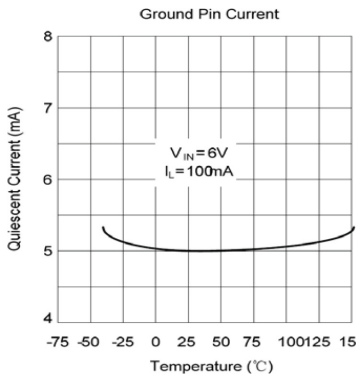
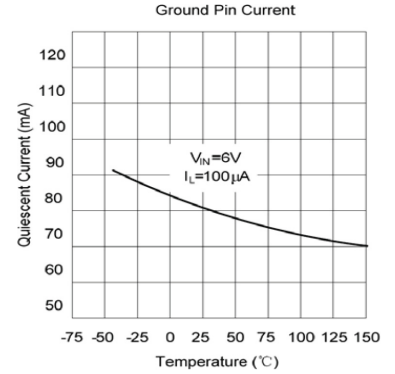
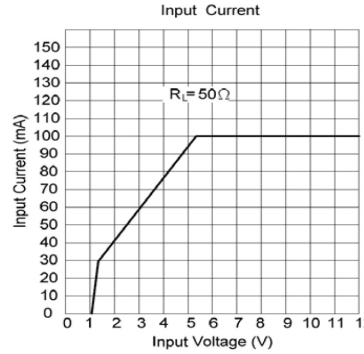
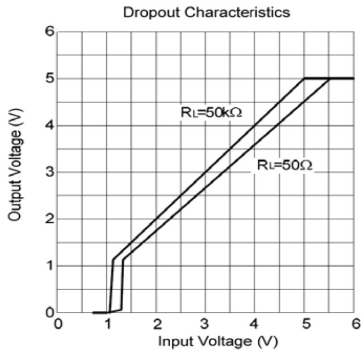
*1. Additional conditions for 8-pin versions are FB pin tied to $5V_{TAP}$, Output tied to Sense ($V_{OUT}=5V$) and $V_{SHDN} 0.8V$

*2. 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.

*3. $V_{REF} \leq V_{OUT} \leq (V_{IN} - 1V)$, $2.3V \leq V_{IN} \leq 30V$, $100\mu A \leq I_L \leq 100mA$, $T_J \leq T_J (MAX)$

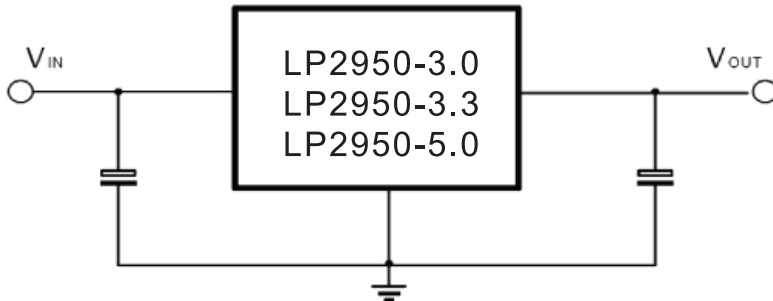
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Characteristics Curve

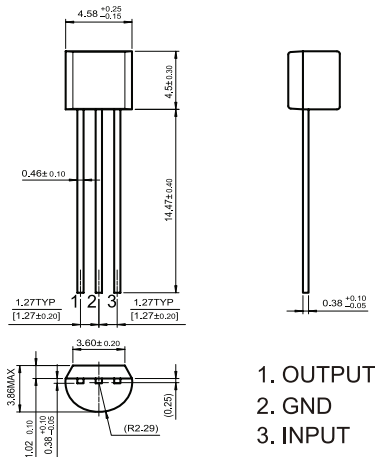


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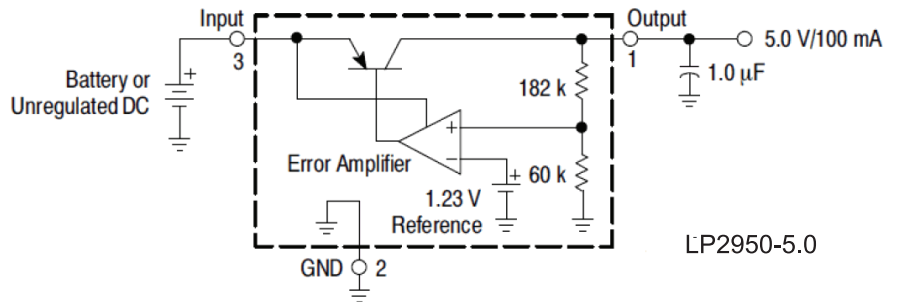
Application Circuits



Diagram



Block Diagram



Part Number Table

Description	Part Number
Low Dropout Voltage Regulator, 3V, 100MA, TO92	LP2950-3.0
Low Dropout Voltage Regulator, 3.3V, 100MA, TO92	LP2950-3.3
Low Dropout Voltage Regulator, 5V, 100MA, TO92	LP2950-5.0

Dimensions : Millimetres

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