

## LDO Regulator

Low Dropout  
Linear Regulator  
Fixed and Adjustable Output

### FEATURES

- Fixed 5V to 2.9V (LR529, LR5D2).
- Fixed 5V to 3.3V (LR533, LR5D3).
- Fixed 5V to 3.9V (LR539, LR5D9).
- Output Current Rating 1A, 2A, or 3A.
- Adjustable Output 2.5V to 4.5V (LR5254).
- Low Off State Current.
- Low Dropout Voltage.
- On-Chip Thermal Limiting.
- On-Chip Short Circuit Protection.
- TO-220 3 or 5 pins or TO-252 Packages.

### PACKAGE AND PIN OUT

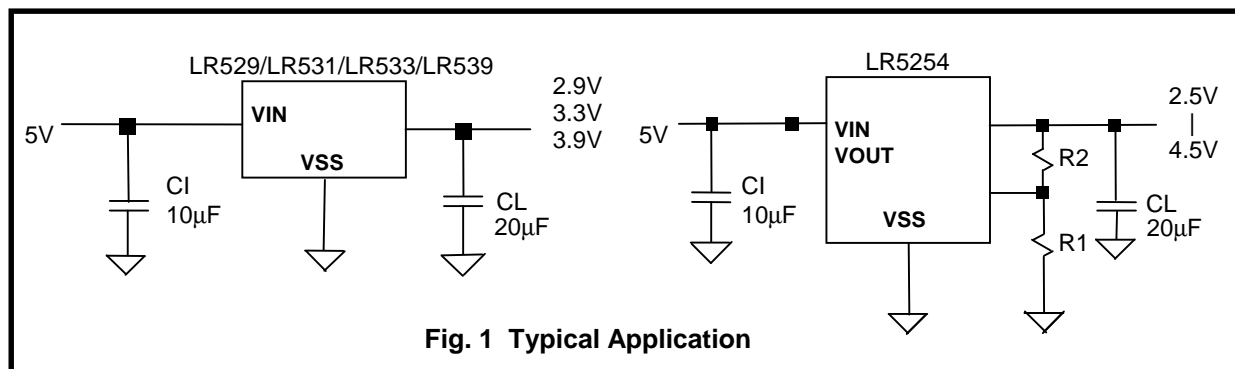
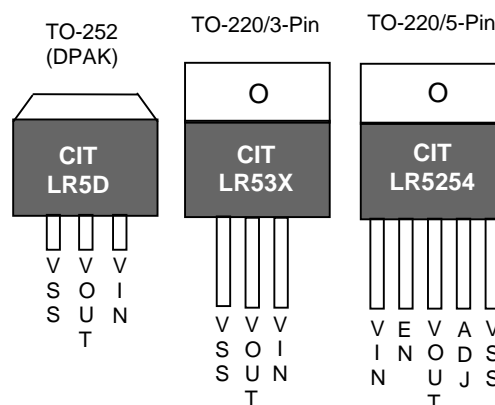


Fig. 1 Typical Application

### GENERAL DESCRIPTION

The LR53X are low dropout three terminal regulators specifically designed for 5V input and fixed 2.9V, 3.3V, and 3.9V output, respectively. LR5254 is a five terminal regulator specifically designed for 5V input and adjustable 2.5V to 4.5V output. These regulators have current ratings of 1A, 2A, and 3A grades. They are identified by dash numbers.

These regulators are optimized for low voltage applications where transient response and low ripple noise are critical. On Chip thermal limiting and short circuit shut off provide protection against any combination of over-load that would create excessive junction temperatures.

LR5254 may be powered down by pulling EN pin low. Its output voltage is adjustable through ADJ pin. See Figure 1 for detail.

$$V_{out} = V_{ref} \times (1 + R_2/R_1); \quad V_{ref} \text{ is about } 1.25V .$$

## ELECTRICAL SPECIFICATIONS

### Absolute Maximum Ratings

Input Voltage	$V_{in} = 6.0V$
Voltage at any Pin	$V_{ss} - .3V$ to $V_{dd} + .3V$
Operating Temperature	$T_a = 0^\circ C$ to $125^\circ C$
Storage Temperature	$-50^\circ C$ to $150^\circ C$
Lead Temperature	$300^\circ C$ (10 Second)

Parameters	Min.	Nom	Max.	Unit	Condition
Tj Junction Temp			125	°C	
Vin Input Voltage	4.75	5.00	5.25	V	
Vout Output Voltage	2.81	2.9	2.99	V	LR529-2, -3, LR5D2
	3.21	3.3	3.39	V	LR533-2, -3, LR5D3
	3.81	3.9	3.99	V	LR539-2, -3, LR5D9
	2.5		4.5	V	LR5254
Iout Output Current		2.0		A	LR529-2, LR533-2
		1.0		A	LR5D2, LR5D3
		3.0		A	LR529-3, LR533-3
		1.0		A	LR539-2, LR5D9
		1.5		A	LR539-3
	0.5		3.5	A	LR5254
Viod Dropout Voltage	0.2			V	
Iq Quiescent Current		5.0		mA	Iout=0
Ioff Off State Current		5.0		uA	EN=Vil
RegL Load Regulation		0.1	0.5	%	
Regl Line Regulation		0.05	0.2	%	
RR Ripple Rejection		60		dB	f=120Hz
Tc Temperature Coef.		±1		%	
Vil Input Low			0.8	V	EN pin.
Vih Input High	2.0			V	EN pin.

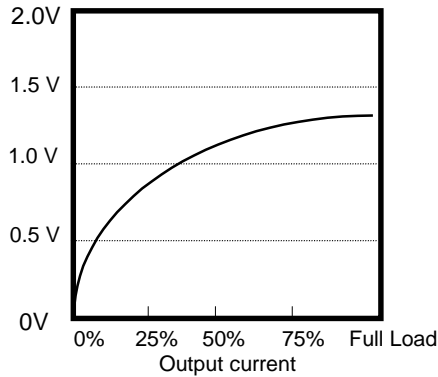


Fig 2 Dropout voltage vs output current

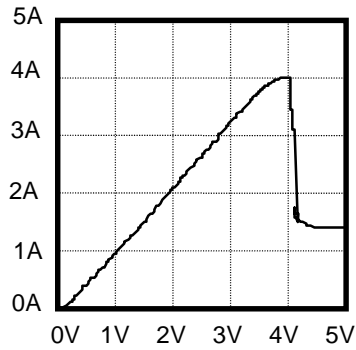


Fig. 3 Short-Circuit current vs input/output differential

Ordering Information			
Part #	Output	Amps	Package
LR529-2	2.9V	2A	TO-220/3
LR5D2		1A	TO-252
LR529-3		3A	TO-220/3
LR533-2	3.3V	2A	TO-220/3
LR5D3		1A	TO-252
LR533-3		3A	TO-220/3
LR539-2	3.9V	1A	TO-220/3
LR5D9		1A	TO-252
LR539-3		1.5A	TO-220/3
LR5254	2.5-4.5V	*	TO-220/5

\* See Figure 2 for output current value.

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