



### Description

The Nanker's NM5125 series is a three-terminal, low power, high voltage regulator in CMOS technology. It features extremely low current consumption and low quiescent current, which is typically 4µA and allows input voltage as high as 6V/SOT23 or 12V/SOT-89.

The device provides large current with a significantly low dropout voltage . It is available in fixed and adjustable versions.

The NM5125 series consists of a voltage reference, an error correction circuit, and an output driver. It can be used with external components to generate variable voltages.

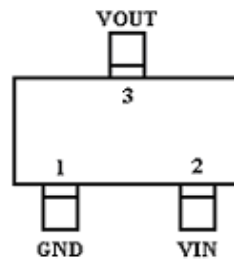
### Features

- Ultra low quiescent current: 4µA (TYP)
- Input voltage range up to 6V/SOT23 or 12V/SOT-89.
- Output voltage: 3.3V
- Output voltage accuracy: tolerance ±2%
- Maximum output current: 250mA
- Low dropout voltage
- Low temperature coefficient
- SOT-23 and SOT-89 package

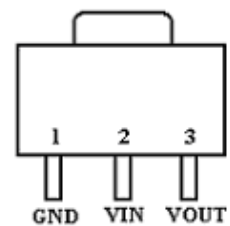
### Application

- Battery-powered equipment
- Voltage regulator for microprocessor
- Voltage regulator for LAN cards
- Wireless communication equipment
- Audio/Video equipment

### Pin Configurations

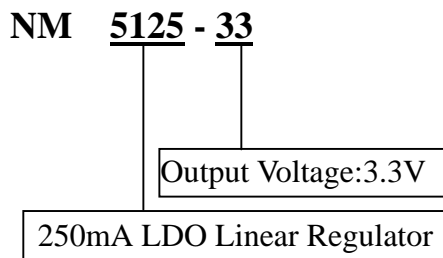


SOT-23



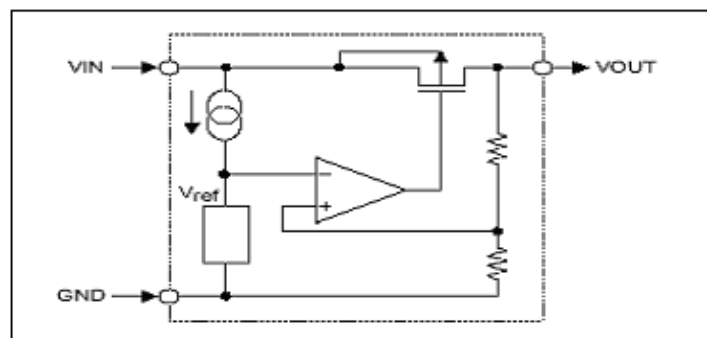
SOT-89

### Ordering Information



### Block Diagram

Figure1:Block Diagram





Application Circuits

Figure 2: Fixed Output Voltage

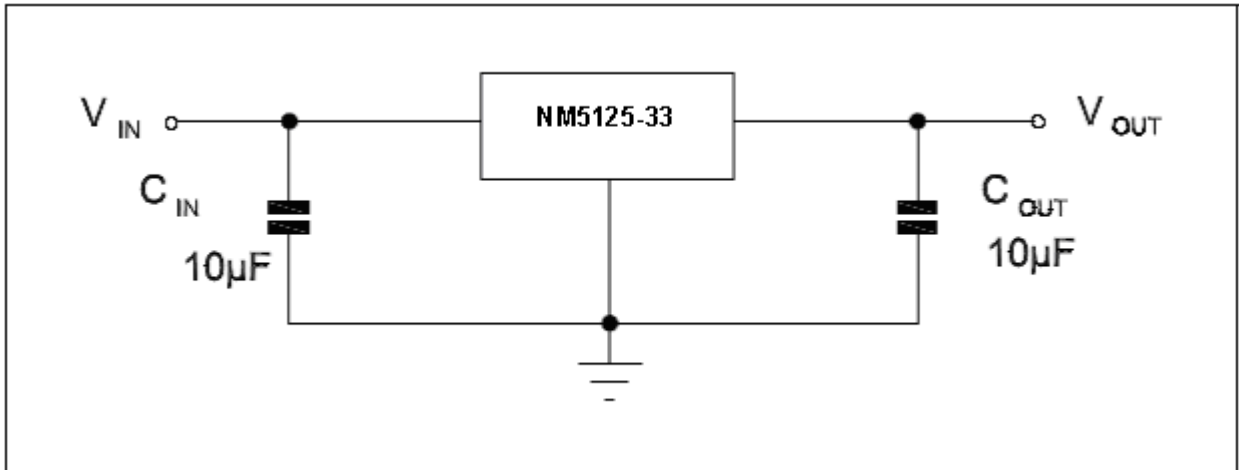
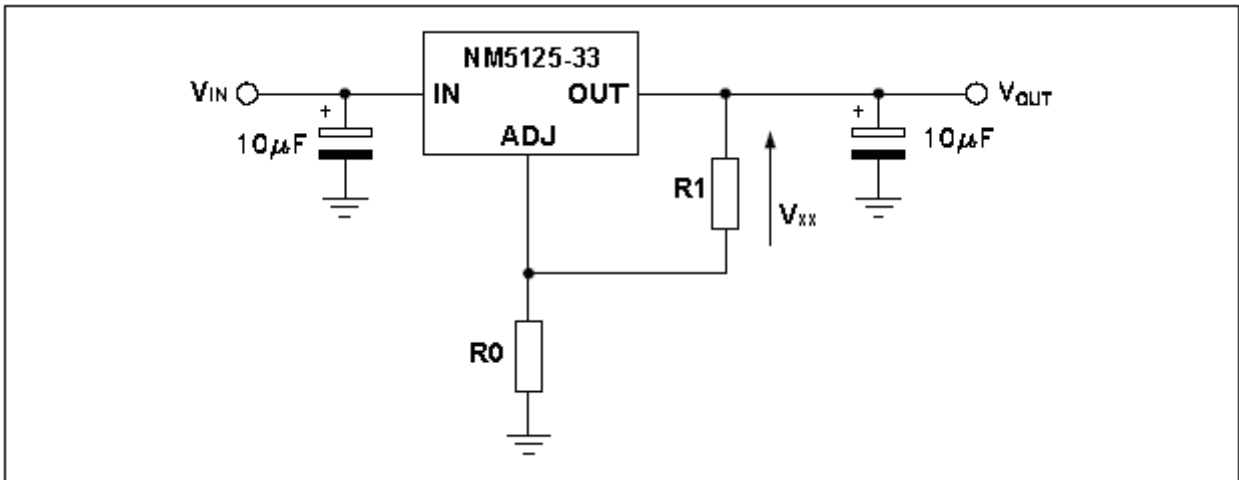


Figure 3: Adjustable Output Voltages:  $V_{OUT} = 3.3V \times (1 + R_0/R_1) + I_{SS} R_0$ .



Absolute Maximum Ratings

Parameter	Limited Range	Unit
Input Voltage	$V_{SS}-0.3 \sim V_{SS}+6/SOT-23$ or $V_{SS}+12/SOT-89$	V
Power Consumption	350	mW
Storage Temperature	-50 to 125	°C
Operating Temperature	-40 to 85	°C

**Electrical Characteristics**

NM5125-33, +3.3V Output Type

Symbol	Parameter	Test Conditions		Min.	Typ.	Max.	Unit
		V <sub>IN</sub>	Conditions				
V <sub>OUT</sub>	Output Voltage	4.3V	I <sub>OUT</sub> =40mA	3.23	3.30	3.37	V
I <sub>OUT(MAX)</sub>	Maximum Output Current	4.3V	V <sub>OUT</sub> ≥2.97V	250	—	—	mA
		5.0V	V <sub>OUT</sub> ≥2.97V(SOT-23)	250	—	—	
		5.0V	V <sub>OUT</sub> ≥2.97V(SOT-89)	350	—	—	
ΔV <sub>OUT*</sub>	Load Regulation	4.3V	1mA≤I <sub>OUT</sub> ≤100mA	—	0.9	—	%
V <sub>DROP*</sub>	Dropout Voltage	—	I <sub>OUT</sub> =10mA	70	80	100	mV
		—	I <sub>OUT</sub> =100mA	400	450	500	mV
I <sub>SS</sub>	Quiescent Current	4.3V	No load	—	4	8	μA
V <sub>IN</sub>	Input Voltage	—	SOT-23	—	—	6	V
		—	SOT-89	—	—	12	V
$\frac{\Delta V_{OUT}}{\Delta V_{IN} \times V_{OUT}}$	Line Regulation	—	4.3V≤V <sub>IN</sub> ≤V <sub>IN(MAX)</sub> I <sub>OUT</sub> =40mA	—	0.2	0.3	%/V
$\frac{\Delta V_{OUT}}{\Delta T_A}$	Temperature	4.3V	20°C≤T <sub>A</sub> ≤90°C I <sub>OUT</sub> =40mA	—	1.1	—	mV/°C

**Note:**

1. Exceeding the absolute maximum rating may damage the device.
2. The device is not guaranteed to function outside its operating rating.
3. The power dissipation is calculated using: PD =I<sub>OUT</sub>\*[V<sub>IN</sub>-V<sub>OUT</sub>].
4. Regulation is measured at constant junction temperature, using pulsed ON time.
5. Dropout is measured at constant junction temperature, using pulsed on time, and the criterion is V<sub>OUT</sub> inside target Value ±2%.

**Nanker Group****Headquarters:**Nanker Building, No.2, 5<sup>th</sup> Jianye Rd., Jiuzhou Av., Zhuhai, Guangdong, PRC

Tel: 0756-8128088 Fax: 0756-8889513

E-mail: info@nanker.com

Website: www.nanker.com

**Shenzhen Sales Office:**

Tel: 0755-86022782(3,4), 86022910 Fax: 0755-86022774