

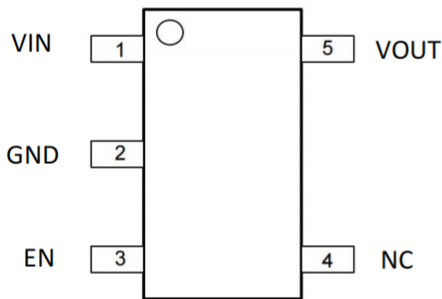
### Features

- 20  $\mu$ A Current at no Load
- $\pm 2\%$  Output Accuracy
- 100mA Output Current
- Current Limit Protection

### Applications

- Industrial Controls
- Home Automation
- Low Power Microcontrollers
- Portable, Battery Powered Equipment

### PIN CONFIGURATION

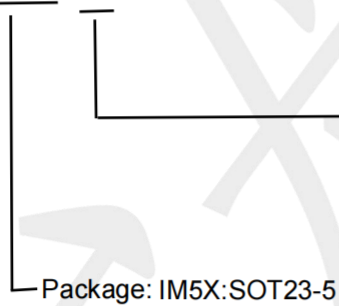


**SOT23-5**

Pin Number	Pin Name	Pin Function
SOT23-5		
1	VIN	Input of Supply Voltage
2	GND	Ground
3	EN	Enable Control Input
4	NC	No Internal Connection
5	VOUT	Output of the Regulator

### Ordering Information

LP2981IM5X-3.3



- 2.5: 2.5V
- 3.0: 3.0V
- 3.6: 3.6V
- 3.3: 3.3V
- 5.0: 5.0V

### Absolute Maximum Ratings

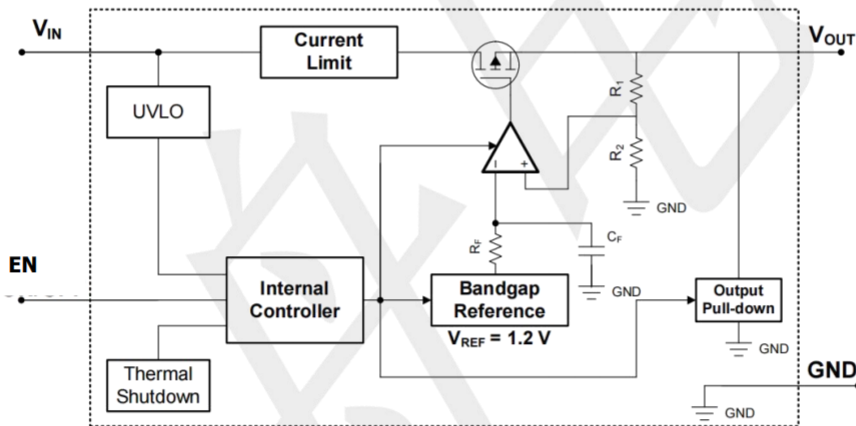
over operating free-air temperature range (unless otherwise noted)

		MIN	MAX	UNIT
V <sub>IN</sub>	Continuous input voltage range	-0.3	18	V
V <sub>OUT</sub>	Output voltage range	-0.3	18	
EN	EN pin voltage range	-0.3	18	
Current	Maximum output current	Internally limited		mA
Temperature	Operating junction, T <sub>J</sub>	-40	150	°C
	Storage, T <sub>stg</sub>	-40	150	

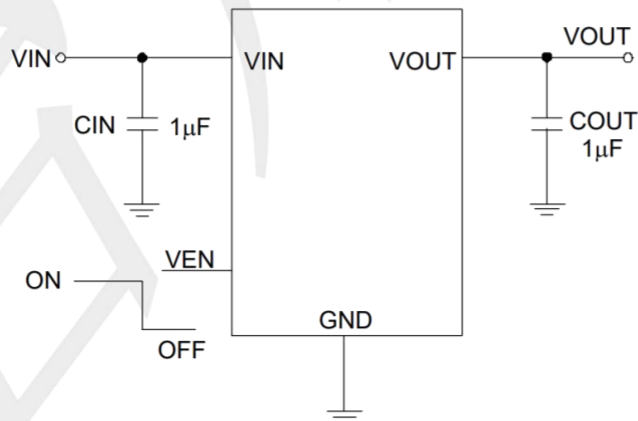
### ESD Ratings

			VALUE	UNIT
V(ESD)	Electrostatic discharge	Human body model (HBM)	±2000	V
		Machine Model (MM)	±200	

### BLOCK DIAGRAM



### Typical Application Circuit



**Electrical Characteristics**

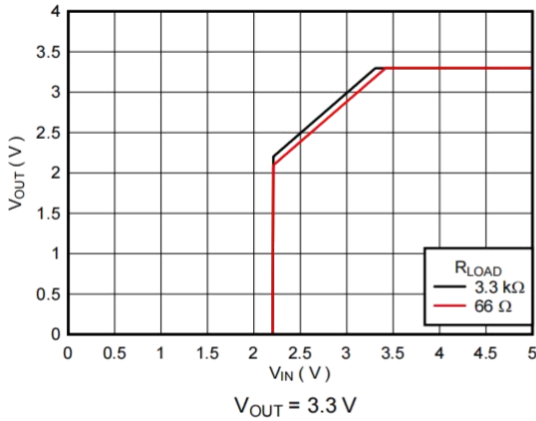
(VIN=15V, VEN=5V, TA=25°C, unless otherwise specified)

PARAMETER	SYMBOL	TEST Conditions	MIN	TYP	MAX	UNIT
Supply Voltage	VIN		2	--	18	V
Output current	IOUT		0	--	100	mA
DC Output Voltage Accuracy		IOUT = 0.1mA	-2	--	2	%
Dropout Voltage (VIN-VOUT)	IOUT = 100mA	VOUT = 1.2V	--	111	--	mV
		VOUT = 1.5V	--	106	--	
		VOUT = 1.8V	--	101	--	
		VOUT = 3.0V	--	95	--	
		VOUT = 3.3V	--	90	--	
		VOUT = 5.0V	--	85	--	
Ground Current (IOUT = 0mA)	IQ	VOUT = 3.3V	--	--	20	uA
Shutdown Ground Current	ISD	VEN = 0V,	--	0.01	0.5	
VOUT Shutdown Leakage Current	I <sub>LEAK</sub>	VOUT = 0V	--	0.01	0.5	
Enable Threshold Voltage	V <sub>IH</sub>	EN Rising	1.1	--	--	V
	V <sub>IL</sub>	EN Falling	--	--	0.4	
EN Input Current	I <sub>EN</sub>	VEN = 16V	--	10	100	nA
Line Regulation	ΔLINE	IOUT = 1mA, 10 ≤ VIN ≤ 18V	--	0.3	--	%
Load Regulation	ΔLOAD	10mA ≤ IOUT ≤ 100mA	--	0.3	--	
Output Current Limit	I <sub>LIM</sub>	VOUT = 0.9 × VOUT(NOM)	100	200	--	mA
Power Supply Rejection Ratio	PSRR	VOUT = 5V, IOUT = 30mA, VIN = 12V, f = 1kHz	--	70	--	dB
Thermal Shutdown Temperature	TSD	IOUT = 10mA	--	160	--	°C
Thermal Shutdown Hysteresis	ΔTSD		--	15	--	
Package Thermal Resistance (Note 1)	TJA	Thermal Resistance Junction-to-Ambient	--	200	--	°C/W

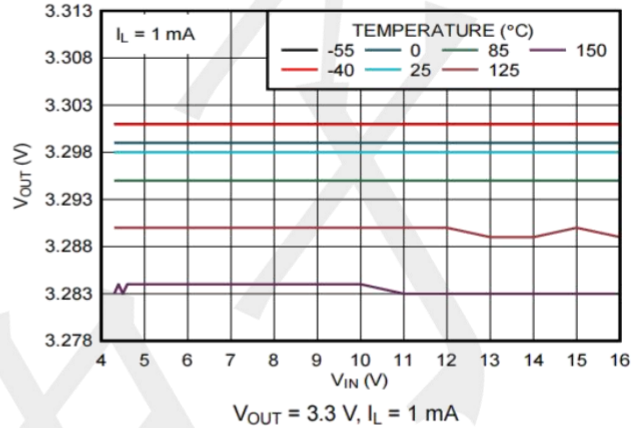
Note: 1. Test condition: For SOT23-5, the device is mounted on FR-4 substrate PC board, with minimum recommended pad layout.

### Typical Operating Characteristics (25 °C, unless otherwise noted)

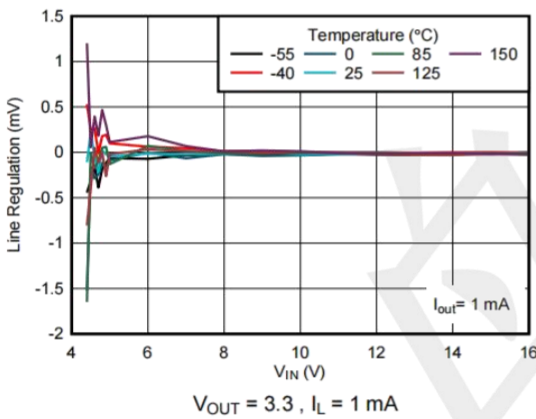
Unless otherwise specified: TA = 25 °C, VIN = VO(NOM) + 1 V, COUT = 1 μF, CIN = 1 μF all voltage options, EN pin tied to VIN.



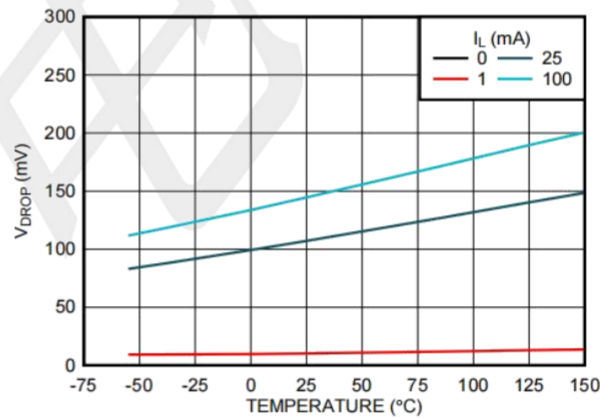
Output Voltage versus VIN



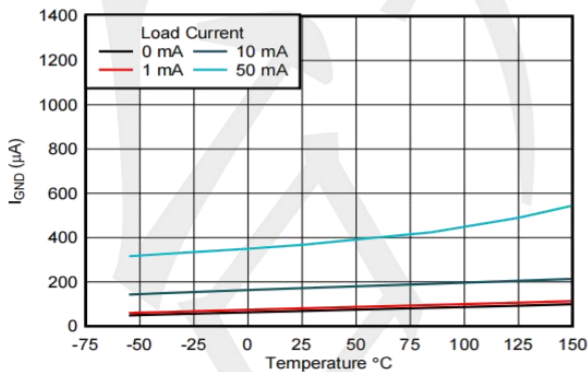
Output Voltage versus VIN and Temperature



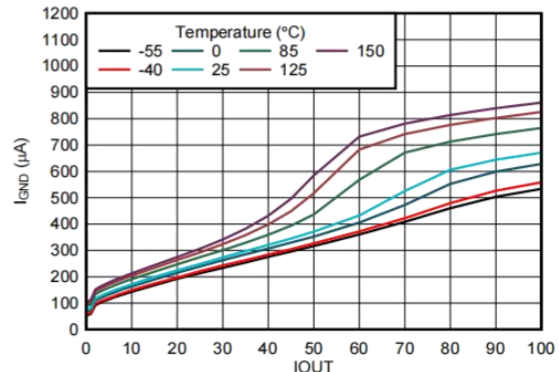
Line Regulation versus VIN & Temperature



Dropout Voltage (VDO) versus Temperature



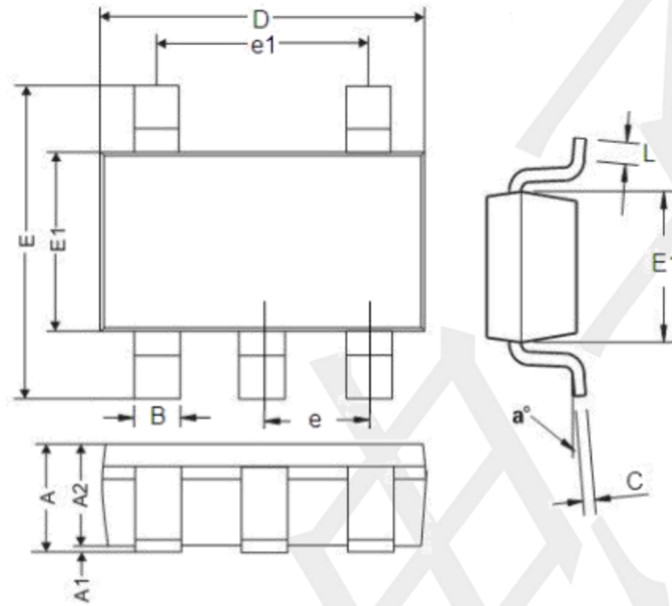
Ground Pin Current (IGND) versus Temperature



Ground Pin Current (IGND) versus Load Current

**Package informantion**

SOT23-5



参数	尺寸 (mm)		尺寸 (Inch)	
	最小值	最大值	最小值	最大值
A	0.9	1.45	0.0354	0.0570
A1	0	0.15	0	0.0059
A2	0.9	1.3	0.0354	0.0511
B	0.2	0.5	0.0078	0.0196
C	0.09	0.26	0.0035	0.0102
D	2.7	3.10	0.1062	0.1220
E	2.2	3.2	0.0866	0.1181
E1	1.30	1.80	0.0511	0.0708
e	0.95REF		0.0374REF	
e1	1.90REF		0.0748REF	
L	0.10	0.60	0.0039	0.0236
a°	0°	30°	0°	30°

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