

# ZMR330

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## 3.3 VOLT MINIATURE VOLTAGE REGULATOR

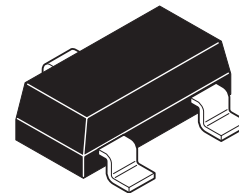
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### DESCRIPTION

The ZMR330 is a 3 terminal fixed 3.3 volt, 50mA, regulator. Internal current limiting and thermal overload protection are included thus protecting the device from some extreme operating conditions.

The circuit design offers low quiescent current of 170 $\mu$ A. Making the part suitable for low power applications.

The ZMR330 is designed with space saving in mind and the small SOT23 package is ideal where space is restricted.



SOT23

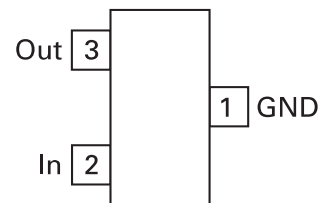
### FEATURES

- 3.3 volt output
- 5V to 24V input range
- 50mA output current
- 170  $\mu$ A quiescent current.
- -55 to +125°C operating temperature
- SOT23 package

### APPLICATIONS

- Local power supply
- Automotive
- Industrial

### PINOUT



TOP VIEW

### ORDERING INFORMATION

DEVICE	PACKAGE	REEL SIZE	TAPE WIDTH	QUANTITY PER REEL
ZMR330FTA	SOT23	7"	8mm	3,000

### DEVICE MARKING

- 330

# ZMR330

## ABSOLUTE MAXIMUM RATINGS

Input voltage	-0.6 to 24V
Output current	100mA
Operating temperature	-55 to 125°C
Storage temperature	-65 to 150°C
Maximum junction temperature	150°C
Package power dissipation	400mW at $T_A = 25^\circ\text{C}$ (De-rate to zero at 150°C)

The maximum power dissipation for the SOT23 package is calculated assuming that the device is mounted on a FR4 substrate measuring 15 x 15 x 0.6 mm.

Operation above the absolute maximum rating may cause device failure. Operation at the absolute maximum ratings, for extended periods, may reduce device reliability.

## ELECTRICAL CHARACTERISTICS

Test Conditions  $T_A = 25^\circ\text{C}$ ,  $V_{in+} = 7\text{V}$ ,  $I_{out} = 10\text{mA}$  unless otherwise specified

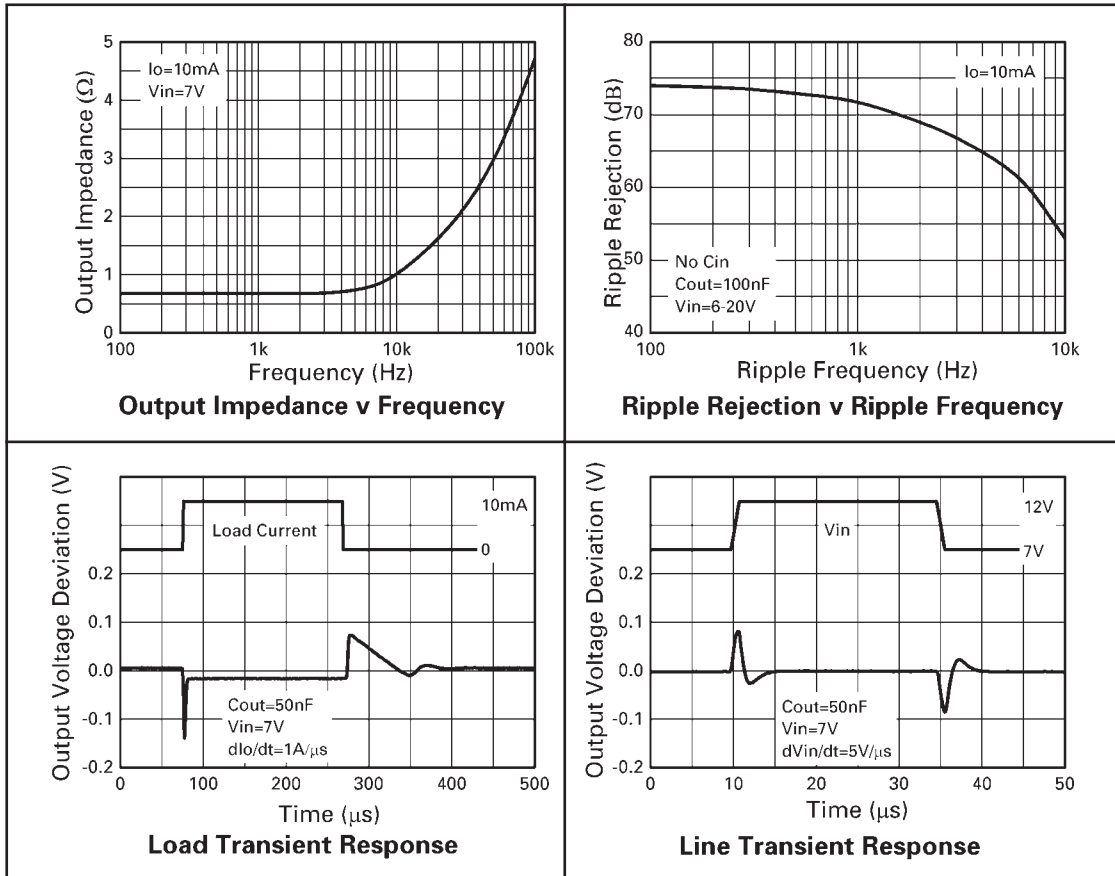
Symbol	Parameter	Conditions	Min	Typ	Max	Units
$V_{out}$	Output voltage		3.217	3.3	3.383	V
		$I_o = 0$ to 50mA, $T_j = -55$ to $+125^\circ\text{C}$	3.148		3.393	V
		$V_{in} = 5$ to 24V, $T_j = -55$ to $125^\circ\text{C}$	3.148		3.408	V
$\Delta V_{out}$	Line regulation	$V_{in} = 5$ to 24V		1	10	mV
$\Delta V_{out}$	Load regulation	$I_o = 0$ to 50mA		20	50	mV
		$I_o = 0$ to 10mA		13		mV
$I_s$	Supply current	$T_j = -55$ to $125^\circ\text{C}$		120	170	$\mu\text{A}$
$\Delta I_s$	Supply current change	$I_o = 0$ to 50mA		5	10	$\mu\text{A}$
		$V_{in} = 5$ to 20V		2	10	$\mu\text{A}$
$V_n$	Output noise voltage	$F = 10\text{Hz}$ to 10kHz		80		$\mu\text{V rms}$
$\Delta V_{in}/\Delta V_{out}$	Ripple rejection	$V_{in} = 6$ to 20V, $f = 120\text{Hz}$	55			dB
$V_{in}$	Input voltage required to maintain regulation	$V_{out} = 3.217\text{V}$	4.80	4.74		V

### NOTES

(1) Output capacitor of 1nF is recommended.

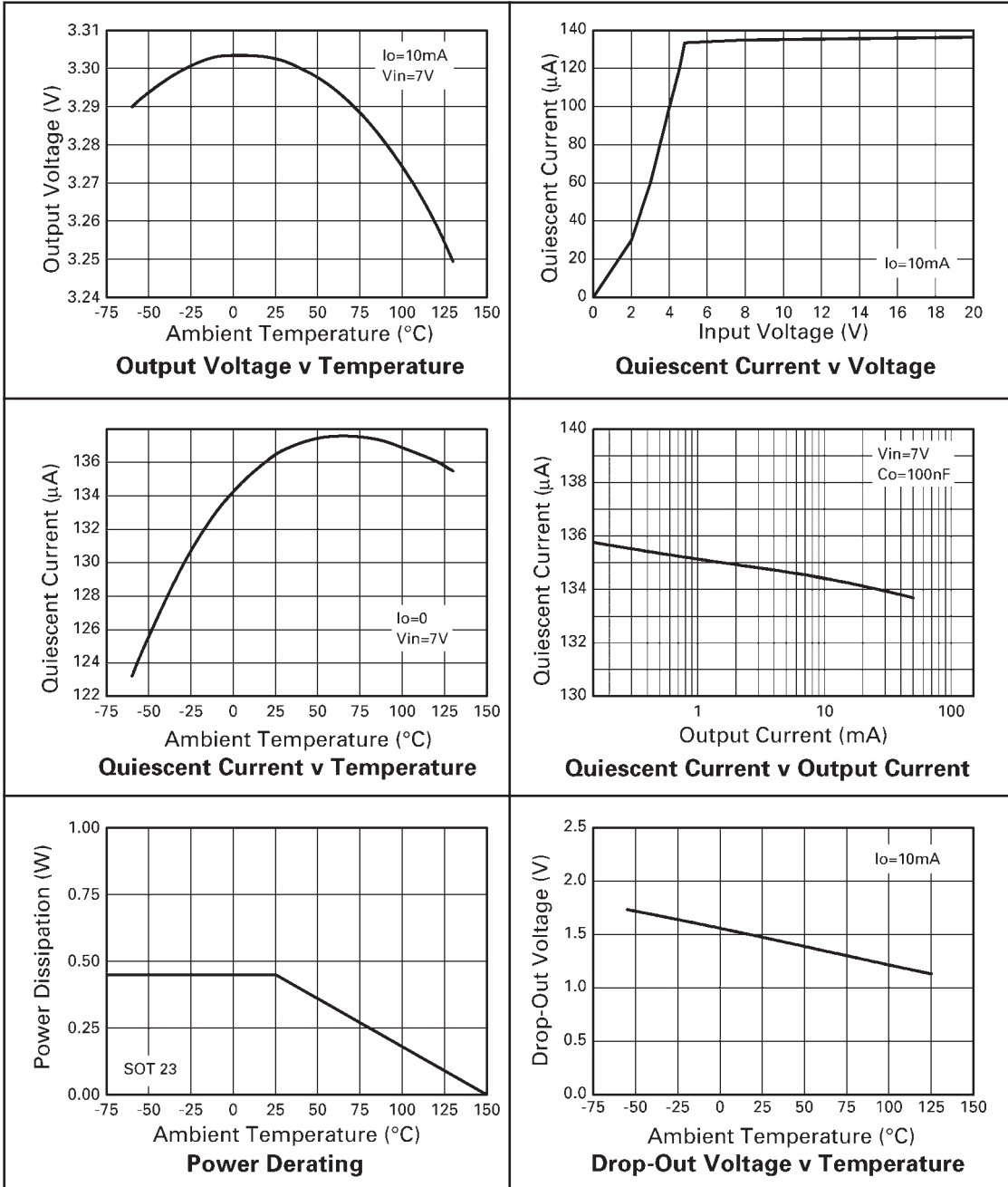
# ZMR330

## TYPICAL CHARACTERISTICS



# ZMR330

## TYPICAL CHARACTERISTICS



# ZMR330

NOTES:

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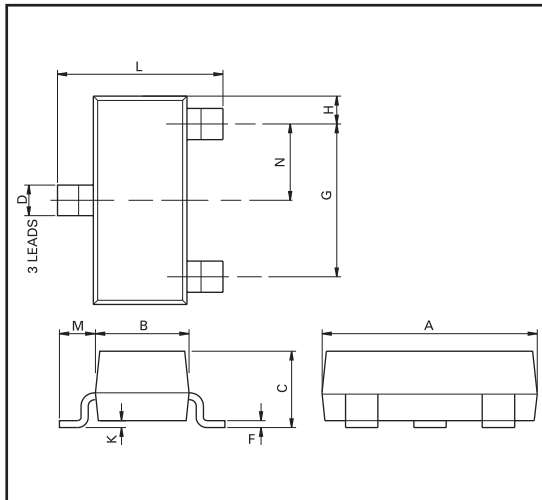
NOTES:

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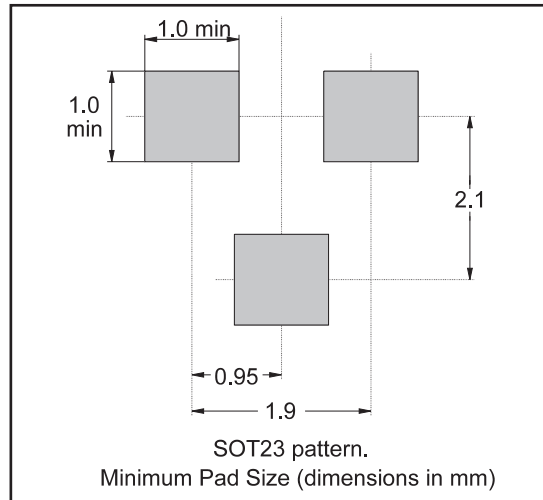
NOTES:

# ZMR330

## PACKAGE OUTLINE



## PAD LAYOUT DETAILS



Controlling dimensions are in millimeters. Approximate conversions are given in inches

## PACKAGE DIMENSIONS

DIM	Millimeters		Inches		DIM	Millimeters		Inches	
	Min	Max	Min	Max		Min	Max	Max	Max
A	2.67	3.05	0.105	0.120	H	0.33	0.51	0.013	0.020
B	1.20	1.40	0.047	0.055	K	0.01	0.10	0.0004	0.004
C	—	1.10	—	0.043	L	2.10	2.50	0.083	0.0985
D	0.37	0.53	0.015	0.021	M	0.45	0.64	0.018	0.025
F	0.085	0.15	0.0034	0.0059	N	0.95 NOM		0.0375 NOM	
G	1.90 NOM		0.075 NOM		—	—		—	

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