Issue Number | 001
May 2011

New Product Announcement

ZXRE250/2

Very low cathode current 2.5V shunt regulator with industrial temperature range and 36V max input voltage

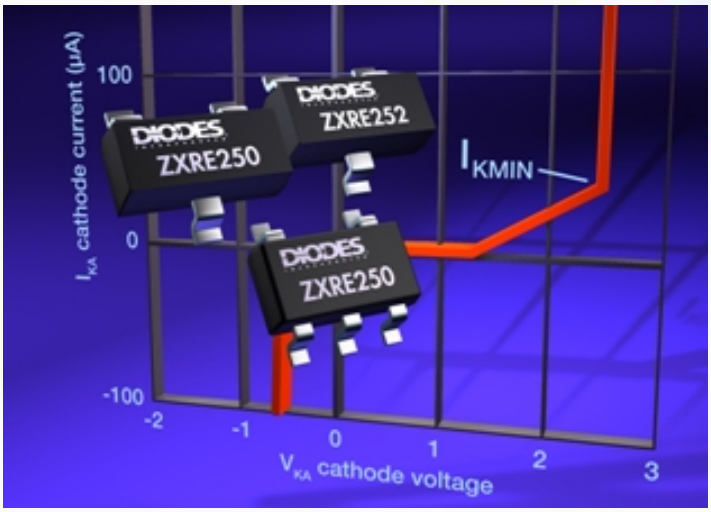
The ZXRE250/2 are three terminal adjustable shunt regulators offering excellent temperature stability and output current handling capability up to 100mA.

These devices feature a very low cathode current for regulation, typically 40µA.

They provide a low power enhancement to industry standard '431 parts. Available as standard A grade (1% tolerance) and B grade (0.5% tolerance), all with a -40°C to 125°C temperature range as standard.

The ZXRE250 is available in 3-pin and 5-pin versions of SOT23, ZXRE252 offers a reverse pinout in SOT23.

The ZXRE250/2 can be used as a replacement for Zener diodes in many applications requiring an improvement in Zener performance.



The Diodes advantage

- Very low minimum cathode current for regulation; 40µA typical
  Ensures minimum power dissipation in applications such as idle power for ACDC external PSU's for laptop PC's
- Wide temperature range: -40 to 125°C
  Simplifies component choice and stocking
- Maximum cathode voltage of 36V
  Matches industry standard '431; allowing it to be used in a wide range of applications
- Available in SOT23 and SOT25 with green (no Br, Sb) molding compound
  Environmentally friendly small surface mount package variants
- 0.5% and 1% variants in all package options
  Meets requirements of modern equipment

Circuit functions

- **Isolated power supplies**
- **Linear regulators**
- **Variable zener**

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DIODES INCORPORATED

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Diodes 2.5V Shunt regulators

Part #	Reference Voltage	Accuracy	Max Input Voltage	Sink Current	Minimum Cathode Current for Regulation (typ)	Typical Temperature Coefficient	Maximum Slope Resistance	Operating Ambient Temp Range	AEC-Q100	Available Packages
	V	%	V	mA	µA	ppm/°C	Ω	°C		
AP431	2.495	0.5 & 1	36	250	190	30	0.5	-20 to +85		TO92/SO-8/SOT23/ SOT89/SC59/SOT25
TL431	**2.495**	**0.5 & 1**	**36**	**100**	**400**	**50**	**0.5**	**-40 to +125**		**SOT23/SOT25**
TL432	2.495	0.5 & 1	36	100	400	50	0.5	-40 to +125		SOT23
ZXRE250	**2.495**	**0.5 & 1**	**36**	**100**	**40**	**50**	**0.5**	**-40 to +125**		**SOT23/SOT25**
ZXRE252	2.495	0.5 % 1	36	100	40	50	0.5	-40 to +125		SOT23
ZR431	2.5	0.5, 1 & 2	20	100	50	55	0.75	-40 to +85		SOT223/SOT23
ZTL431	2.5	0.5 & 1	20	100	400	50	0.5	-40 to +125	X	SOT23/SOT363/SOT25
ZTL432	2.5	0.5 & 1	20	100	400	50	0.5	-40 to +125	X	SOT23

To find more information:
Shunt regulator overview page http://www.diodes.com/products/catalog/list.php?parent-id=82
Datasheet http://www.diodes.com/datasheets/ZXRE250.pdf

Ordering information

Device	Tolerance	Package	Part mark	Reel size	Quantity per reel	Tape width
ZXRE250ASA-7	1%	SOT23	DA	7"	3000	8mm
ZXRE250AW5-7	1%	SOT25	DA	7"	3000	8mm
ZXRE250BSA-7	0.5%	SOT23	DB	7"	3000	8mm
ZXRE250BW5-7	0.5%	SOT25	DB	7"	3000	8mm
ZXRE252ASA-7	1%	SOT23	FA	7”	3000	8mm
ZXRE252BSA-7	0.5%	SOT23	FB	7”	3000	8mm

All variants are in packages are “Green” Molding Compound (No Br, Sb) with Lead Free Finish/RoHS Compliant (Note 1)
Notes:1. EU Directive 2002/95/EC (RoHS). All applicable RoHS exemptions applied, see EU Directive 2002/95/EC Annex Notes