



2.5V shunt regulator with industrial temperature range and 36V max input voltage

The TL431/2 are three terminal adjustable shunt regulators offering excellent temperature stability and output current handling capability up to 100mA.

These industry standard parts expand Diodes' shunt regulator range to include 36V operation and extended industrial temperature range.

The TL431/2 are available as standard A grade (1% tolerance) and B grade (0.5% tolerance); all parts offer -40°C to 125°C temperature range as standard.

The TL431 is available in 3-pin and 5-pin versions of SOT23, TL432 offers a reverse pinout in SOT23.

The output voltage may be set to any voltage between 2.495 and 36V by selection of two external divider resistors.

The TL431 can be used as a replacement for zener diodes in many applications requiring an improvement in zener performance as well as offline converters.



The Diodes advantage

Diodes' TL431 extend the operating voltage and temperature range of the popular 2.495V '431 shunt regulator

- Wide temperature range: -40 to 125°C
Simplifies component choice and stocking
- Maximum cathode voltage of 36V
Matches standard TL431; allowing it to be used in a wide range of applications
- Available now 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



Product
Update

TL431/2

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Diodes 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 (°C)	AEC-Q100	Available Packages
	V	%	V	mA	µA	ppm/°C	Ω	°C		
ZXRE060	0.6	0.5 & 1	18	10	-			-40 to +85		TSOT25/SOT353
AP432	1.24	0.5 & 1	20	250	150	30	0.5	-20 to +85		TO92/SO-8/SOT23/SOT89/SC59/SOT25
TLV431	1.24	0.5 & 1	18	15	100	50	0.4	-40 to +125	X	SOT23/SOT363/SOT25
ZR431L	1.24	1 & 2.5	10		100	55	2	-40 to +85		SOT23
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
ZHT431	2.5	1 & 2	20	150	50	55	0.75	-55 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 out more information:

Shunt regulator overview page

TL431 product page

Datasheet

<http://www.diodes.com/products/catalog/list.php?parent-id=82>

<http://www.diodes.com/products/catalog/detail.php?item-id=???>

<http://www.diodes.com/datasheets/TL431.pdf>

Ordering information

Device	Tolerance	Package	Part mark	Reel size	Quantity per reel	Tape width
TL431ASA-7	1%	SOT23	AA	7"	3000	8mm
TL431AW5-7	1%	SOT25	AA	7"	3000	8mm
TL431BSA-7	0.5%	SOT23	AB	7"	3000	8mm
TL431BW5-7	0.5%	SOT25	AB	7"	3000	8mm
TL432ASA-7	1%	SOT23	BA	7"	3000	8mm
TL432BSA-7	0.5%	SOT25	BB	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