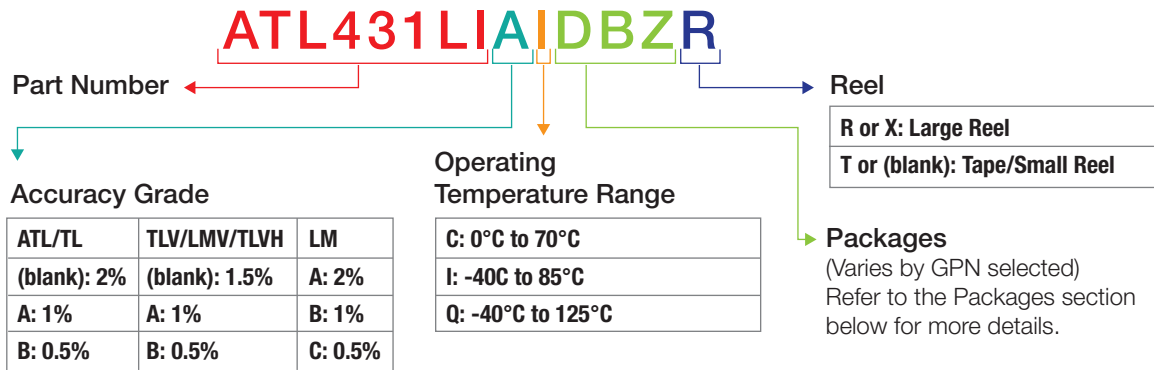


# 431 Device Nomenclature



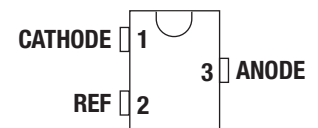
## 431 Family of Devices

Device	Vref (typ)	Vka (max)	Ika (min)	Ika (max)	Iref (max)	I <sub>l(dev)</sub> (max)
<a href="#">ATL431/2LI</a>	2.5V	36V	100µA	100mA	0.4µA	0.3µA
<a href="#">ATL431/2</a>	2.5V	36V	35µA	100mA	150nA	50nA
<a href="#">TL431/2LI</a>	2.5V	36V	1mA	15mA	0.4µA	0.3µA
<a href="#">TL431/2</a>	2.5V	36V	1mA	100mA	4µA	2.5µA
<a href="#">LM431</a>	2.5V	36V	1mA	100mA	4µA	1.2µA
<a href="#">TLV431/2</a>	1.24V	6V	100µA	15mA	0.5µA	0.5µA
<a href="#">TLVH431/2</a>	1.24V	18V	100µA	70mA	0.5µA	0.5µA
<a href="#">LMV431</a>	1.24V	30V	80µA	15mA	0.5µA	0.3µA

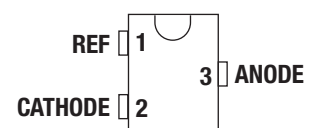
## 431 Packages

Code	Package	TL431/2LI	TL431/2	LM431	TLV431/2	LMV431	TLVH431/2	ATL431/2	ATL431/2LI
D/M	SOIC (8)		✓	✓	✓				
DBV	SOT-23 (5)		✓		✓	✓	✓		
DBZ/M3	SOT-23 (3)	✓	✓	✓	✓	✓	✓	✓	✓
PK	SOT-89 (4)		✓		✓		✓		
PK	SC-70 (6)		✓		✓		✓		
LP/Z	TO-92 (3)		✓	✓	✓	✓	✓		
P	PDIP (8)		✓						
PS	SOP (8)		✓						
PW	TSSOP (8)		✓						

**TL431LIA, TL431LIB DBZ**  
3-Pin, SOT-23 (Top View)



**TL432LIA, TL432LIB DBZ**  
3-Pin, SOT-23 (Top View)



## Design Resources

- [Designing with the Improved TL431LI](#)
- [Designing with the ATL431LI](#)
- [Using the TL431 as a Voltage Comparator](#)
- [Setting the Shunt Voltage on a Shunt Regulator](#)
- [Understanding Stability Boundary Conditions for TL431](#)
- [Flyback Compensation Network Design for TL431](#)
- [Video: Shunt reference considerations for optocoupler feedback](#)

## TI Worldwide Technical Support

---

### TI Support

Thank you for your business. Find the answer to your support need or get in touch with our support center at

[www.ti.com/support](http://www.ti.com/support)

China:

<http://www.ti.com.cn/guidedsupport/cn/docs/supporthome.tsp>

Japan:

<http://www.tij.co.jp/guidedsupport/jp/docs/supporthome.tsp>

### Technical support forums

Search through millions of technical questions and answers at TI's E2E™ Community (engineer-to-engineer) at

[e2e.ti.com](http://e2e.ti.com)

China:

<http://www.deyisupport.com/>

Japan:

<http://e2e.ti.com/group/jp/>

### TI Training

From technology fundamentals to advanced implementation, we offer on-demand and live training to help bring your next-generation designs to life. Get started now at

[training.ti.com](http://training.ti.com)

China:

<http://www.ti.com.cn/general/cn/docs/gencontent.tsp?contentId=71968>

Japan:

<https://training.ti.com/jp>

**Important Notice:** The products and services of Texas Instruments Incorporated and its subsidiaries described herein are sold subject to TI's standard terms and conditions of sale. Customers are advised to obtain the most current and complete information about TI products and services before placing orders. TI assumes no liability for applications assistance, customer's applications or product designs, software performance, or infringement of patents. The publication of information regarding any other company's products or services does not constitute TI's approval, warranty or endorsement thereof.

**B011617**

The platform bar and E2E are trademarks of Texas Instruments. All other trademarks are the property of their respective owners.

## IMPORTANT NOTICE AND DISCLAIMER

TI PROVIDES TECHNICAL AND RELIABILITY DATA (INCLUDING DATASHEETS), DESIGN RESOURCES (INCLUDING REFERENCE DESIGNS), APPLICATION OR OTHER DESIGN ADVICE, WEB TOOLS, SAFETY INFORMATION, AND OTHER RESOURCES "AS IS" AND WITH ALL FAULTS, AND DISCLAIMS ALL WARRANTIES, EXPRESS AND IMPLIED, INCLUDING WITHOUT LIMITATION ANY IMPLIED WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE OR NON-INFRINGEMENT OF THIRD PARTY INTELLECTUAL PROPERTY RIGHTS.

These resources are intended for skilled developers designing with TI products. You are solely responsible for (1) selecting the appropriate TI products for your application, (2) designing, validating and testing your application, and (3) ensuring your application meets applicable standards, and any other safety, security, or other requirements. These resources are subject to change without notice. TI grants you permission to use these resources only for development of an application that uses the TI products described in the resource. Other reproduction and display of these resources is prohibited. No license is granted to any other TI intellectual property right or to any third party intellectual property right. TI disclaims responsibility for, and you will fully indemnify TI and its representatives against, any claims, damages, costs, losses, and liabilities arising out of your use of these resources.

TI's products are provided subject to TI's Terms of Sale ([www.ti.com/legal/termsofsale.html](http://www.ti.com/legal/termsofsale.html)) or other applicable terms available either on [ti.com](http://ti.com) or provided in conjunction with such TI products. TI's provision of these resources does not expand or otherwise alter TI's applicable warranties or warranty disclaimers for TI products.

Mailing Address: Texas Instruments, Post Office Box 655303, Dallas, Texas 75265  
Copyright © 2019, Texas Instruments Incorporated