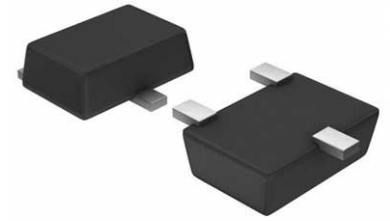


V-Ref Adjustable 2.495V to 36V 15mA Automotive 3-Pin SOT-23 T/R



Images are for reference only

[Inquiry](#)

Manufacturer: [Texas Instruments, Inc](#)

Package/Case: SOT23-3

Product Type: Power Management ICs

RoHS: RoHS Compliant/Lead free 

Lifecycle: Active

General Description

The TL431LI-Q1 is a three-terminal adjustable shunt regulator, with specified thermal stability over applicable automotive, commercial, and military temperature ranges. The output voltage can be set to any value between V_{ref} (approximately 2.495 V) and 36 V with two external resistors. The device has a typical output impedance of 0.3 Ω . Its active output circuitry provides a very sharp turn-on characteristic, making it an excellent replacement for Zener diodes in many applications, such as onboard regulation, adjustable power supplies, and switching power supplies. This device is a pin-to-pin alternative to the industry standard TL431-Q1 with optimized I_{ref} and I_{Idev} performance. The lower I_{ref} and I_{Idev} values of the TL431LI-Q1 enable designers to achieve higher system accuracy and lower leakage current. The TL432LI-Q1 has exactly the same functionality and electrical specifications as the TL431LI-Q1, but has a different pinout for the DBZ package.

The TL431LI-Q1 is offered in two grades, with initial tolerances (at 25°C) of 0.5% and 1%, for the B and A grade, respectively. The TL431LI-Q1 is also available in two temperature grades: grade 1 (denoted by a 'Q' in the part number), and grade 0 (denoted by a 'E' in the part number), which represent maximum ambient operating temperatures of 125°C and 150°C respectively. The TL43xLI-Q1 is characterized for operation from -40°C to 125°C for grade 1, and -40°C to 150°C for grade 0, and its low output drift versus temperature ensures good stability over the entire temperature range.

Key Features

Qualified for automotive applications

AEC-Q100 qualified with the following results:

Device temperature grade 1: -40°C to $+125^{\circ}\text{C}$ ambient operating temperature

Device temperature grade 0: -40°C to $+150^{\circ}\text{C}$ ambient operating temperature

Reference voltage tolerance at 25°C

0.5% (B grade)

1% (A grade)

Minimum typical output voltage: 2.495 V

Adjustable output voltage: V_{ref} to 36 V

27 mV maximum temperature drift for grade 1

34 mV maximum temperature drift for grade 0

0.3- Ω typical output impedance

Sink-current capability

$I_{\text{min}} = 0.6 \text{ mA (max)}$

$I_{\text{KA}} = 15 \text{ mA (max)}$

Reference input current $I_{\text{REF}}: 0.4 \mu\text{A (max)}$

Deviation of reference input current over temperature, $I_{\text{I(dev)}}: 0.3 \mu\text{A (max)}$

Recommended For You

TL2843P

Texas Instruments, Inc

DIP8

TL431CP

Texas Instruments, Inc

DIP8

TL7705ACDR

Texas Instruments, Inc

SOP8

TL3843P

Texas Instruments, Inc

DIP8

TL497ACN

Texas Instruments, Inc

DIP14

TL3845P

Texas Instruments, Inc

DIP8

TL494CD

Texas Instruments, Inc

SOP-16

TL431HDBVR

Texas Instruments, Inc

SOT23-5

TL494CN

Texas Instruments, Inc

DIP

TL431CDBVR

Texas Instruments, Inc
SOT23-5

TL7705ACP

Texas Instruments, Inc
DIP8

TL3842P

Texas Instruments, Inc
DIP8

TLV73325PDBVT

Texas Instruments, Inc
SOT23-5

TLV73333PDBVR

Texas Instruments, Inc
SOT23-5

TL431BIDBZT

Texas Instruments, Inc
SOT23-3