

Product Overview

TLV431: Low Voltage Precision Adjustable Shunt Regulator

For complete documentation, see the data sheet.

The TLV431 series of parts are precision low voltage shunt regulators that are programmable over a wide voltage range of 1.24V to 16V. The TLV431A series features a guaranteed reference accuracy of 1.0% at 25 °C and 2.0% over the entire industrial temperature range of -40 °C to 85 °C. For TLV431B series, the accuracy is 0.5% and 1.0%, respectively. For the TLV431C series, the accuracy is 0.2% and 0.5%, respectively. These devices exhibit a sharp low current turn-on characteristic with a low dynamic impedance of 0.20 Ω over an operating current range of 0.1mA to 20mA. This combination of features makes this series an excellent replacement for zener diodes in numerous applications circuits that require a precise reference voltage. When combined with an optocoupler, the TLV431 can be used as an error amplifier for controlling the feedback loop in isolated low output voltage (3.0V to 3.3V) switching power supplies. These devices are available in economical TO-92 and micro size TSOP-5 and SOT23-3 packages.

Features

- Voltage Reference Tolerance +/-1.0%
- Sharp Low Current Turn-On Characteristic
- Low Dynamic Output Impedance of 0.20 Ω from 100 mA to 20 mA
- Programmable Output Voltage Range of 1.24 V to 16 V
- Micro Miniature TSOP-5 and TO-92 Packages
- Pb-Free Package is Available
- A = 1.0% tolerance Vref
- B = 0.5% tolerance Vref
- C = 0.2% tolerance Vref

Applications

- Low Output Voltage (3.0 V to 3.3 V) Switching Power Supply Error Amplifier
- Adjustable Voltage or Current Linear and Switching Power Supplies
- Voltage Monitoring
- Current Source and Sink Circuits
- Analog and Digital Circuits Requiring Precision References

End Products

- Power Supplies
- Smart Phone Charger / Adapters

Part Electrical Specifications

Product	Pricing (\$/Unit)	Compliance	Status	Type	V _(BR) Typ (V)	Tolerance (%)	I _O Typ (mA)	I _R Min (mA)	V _F Max (V)	T _A Min (°C)	T _A Max (°C)	Package Type
NCV431ASNT1G	0.2347	AEC Qualified	Active	Adjustable	2.5	1	0.5	1	36	-40	125	TSOP-5 / SOT-23-5
		PPAP Capable										
		Pb-free										
		Halide free										
NCV431BSNT1G	0.2347	AEC Qualified	Active	Adjustable	2.5	0.4	0.5	1	36	-40	125	TSOP-5 / SOT-23-5
		PPAP Capable										
		Pb-free										
		Halide free										
SCV431ASN1T1G	0.2	AEC Qualified	Active	Adjustable	1.25	1	-	-	16	-40	125	SOT-23-3
		PPAP Capable										
		Pb-free										
		Halide free										
SCV431BSN1T1G	0.2	AEC Qualified	Active	Adjustable	1.25	0.5	0.055	0.015	16	-40	125	SOT-23-3
		PPAP Capable										
		Pb-free										
		Halide free										
TLV431ALPG	0.182	Pb-free	Active	Adjustable	1.25	1	0.055	0.015	16	-40	85	TO-92
		Halide free										
TLV431ALPRAG	0.128	Pb-free	Active	Adjustable	1.25	1	0.055	0.015	16	-40	85	TO-92
		Halide free										
TLV431ALPREG		Pb-free	Active	Adjustable	1.25	1	0.055	0.015	16	-40	85	TO-92
		Halide free										
TLV431ASN1T1G	0.12	Pb-free	Active	Adjustable	1.25	1	0.055	0.015	16	-40	85	SOT-23-3
		Halide free										
TLV431ASNT1G	0.12	Pb-free	Active	Adjustable	1.25	1	0.055	0.015	16	-40	85	TSOP-5 / SOT-23-5
		Halide free										
TLV431BLPRAG	0.1741	Pb-free	Active	Adjustable	1.25	0.5	0.055	0.015	16	-40	85	TO-92
		Halide free										
TLV431BSN1T1G	0.12	Pb-free	Active	Adjustable	1.25	0.5	0.055	0.015	16	-40	85	SOT-23-3
		Halide free										
TLV431BSNT1G	0.12	Pb-free	Active	Adjustable	1.25	0.5	0.055	0.015	16	-40	85	TSOP-5 / SOT-23-5
		Halide free										
TLV431CSN1T1G	0.12	Pb-free	Active	Adjustable	1.25	0.2	0.055	0.015	16	-40	85	SOT-23-3
		Halide free										

For more information please contact your local sales support at www.onsemi.com.

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