

## A8297: Dual LNB Supply and Control Voltage Regulator

Intended for analog and digital satellite receivers, this dual low noise block converter regulator (LNBR) is a monolithic linear and switching voltage regulator, specifically designed to provide the power and the interface signals to an LNB down converter via coaxial cable. The A8297 requires few external components, with the boost switch and compensation circuitry integrated inside of the device. A high switching frequency is chosen to minimize the size of the passive filtering components, further assisting in cost reduction. The high levels of component integration ensure extremely low noise and ripple figures.

The A8297 has been designed for high efficiency, utilizing the Allegro® advanced BCD process. The integrated boost switch has been optimized to minimize both switching and static losses. To further enhance efficiency, the voltage drop across the tracking regulator has been minimized.

For DiSEqC™ communications, a tone control pin is provided to gate the internally-generated 22 kHz tone on-and-off.

A comprehensive set of fault registers are provided, which comply with all the common standards, including: overcurrent, thermal shutdown, undervoltage, and power not good.

Furthermore, design methodology and structure ensure the highest level of robustness against transients and component failures. The device uses a 2-wire bidirectional serial interface, compatible with the I2C™ standard, that operates up to 400 kHz.

The A8297 is supplied in a lead (Pb) free package.

### DATASHEETS

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#### FEATURES & BENEFITS

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- Integrated boost MOSFET, current sensing, and compensation
- Adjustable LNB output current limit from 250 to 950 mA
- Covers wide array of application requirements
- Minimizes component sizing to fit each application
- For startup, reconfiguration, and continuous output (maximum value depends on PCB thermal design)
- Boost peak current limit scales with LNBx current limit setting
- 8 programmable LNBx output voltage (DAC) levels
- LNBx overcurrent limiter with shutdown timer
- Static LNBx current limit reliably starts a wide range of loads
- Tracking boost converter minimizes power dissipation
- LNBx transition times configurable by external capacitor
- Push-pull LNBx output stage maintains 13→18 V and 18→13 V transition times, even with highly capacitive loads
- Built-in 22 kHz tone oscillator facilitates DiSEqC™ tone encoding, even at no-load
- Tone generation does not require additional external components
- Diagnostic features: PNGx, TDETx
- Dynamic tone detect amplitude and frequency transmit/receive thresholds
- $\overline{\text{RESET}}$  input disables the LNBx and resets all registers for fast load shedding
- Extensive protection features: UVLO, OCPx, TSD, CPOKx
- 2-wire I2C-compatible interface
- Small low-profile 5 mm × 5 mm, 0.90 mm QFN-28 package

### Product Image



Click the image to view larger

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### Part Number Specifications and Availability

Part Number	Package Type	Temperature	RoHS Compliant	Part Composition / RoHS Data	Comments	Samples	Check Distributor Stock
A8297SETTR-T	28-lead QFN	-20 °C to 85 °C	Yes	<a href="#">View Data</a>		<a href="#">Contact your local sales rep</a>	<a href="#">Check Distributor Stock</a>
APEK8297SES-01-T	DEMO BOARD	-20 °C to 85 °C	No	--		<a href="#">Contact your local sales rep</a>	<a href="#">Check Distributor Stock</a>

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