

Active bridge control that increases power converter efficiency

Full active bridge control, increasing efficiency of the power converter

The TEA2208T controller is the first product of a new generation of active bridge rectifier controllers that replace the traditional diode bridge.

OVERVIEW

Using the TEA2208T controller with low-ohmic high-voltage external MOSFETs eliminates the typical rectifier diode-forward conduction losses, thereby significantly improving the efficiency of the power converter. Efficiency can improve up to about 1.4 % at 90 V (AC) mains voltage. The TEA2208T is designed in a silicon-on insulator (SOI) process.

KEY FEATURES AND BENEFITS

Efficiency features

- ▶ Forward conduction losses of the diode rectifier bridge are eliminated
- ▶ Very low IC power consumption (2 mW)

Application Features

- ▶ Integrated high-voltage level shifters
- ▶ Directly drives all four rectifier MOSFETs
- ▶ Very low external part count
- ▶ Integrated X-capacitor discharge (2 mA)
- ▶ Self-supplying
- ▶ Full-wave drive improving total harmonic distortion (THD)
- ▶ S014 package

Control features

- ▶ Undervoltage lockout (UVLO) for high-side and low-side drivers
- ▶ Drain-source overvoltage protection for all external power MOSFETs
- ▶ Gate pull-down currents at start-up for all external power MOSFETs

TARGET APPLICATIONS

The TEA2208T controller is intended for power supplies with a boost-type power-factor controller as a first stage. The second stage can be a resonant controller, a flyback controller, or any other controller topology. It can be used in all power supplies requiring high efficiency.

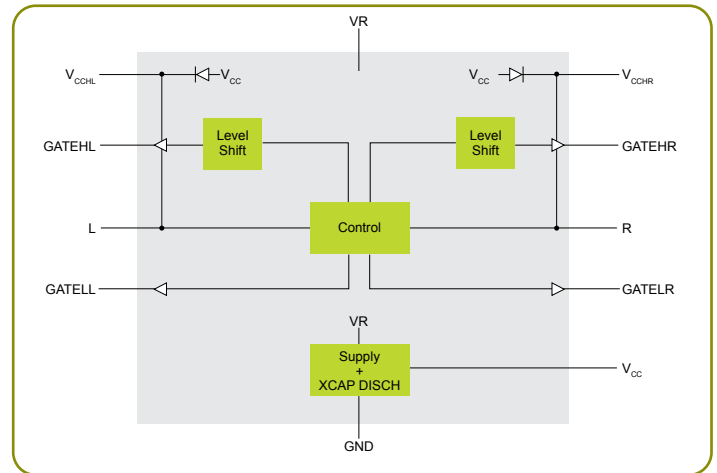
- ▶ Adapters
- ▶ Power supplies for desktop PC and all-in-one PC
- ▶ Power supplies for television
- ▶ Power supplies for servers



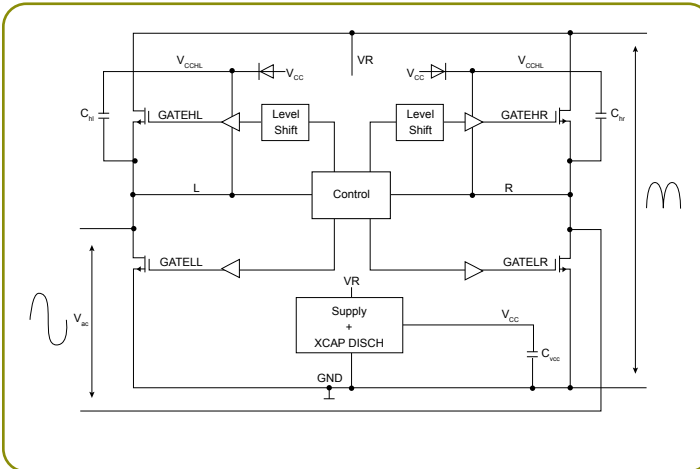
DEMO BOARD



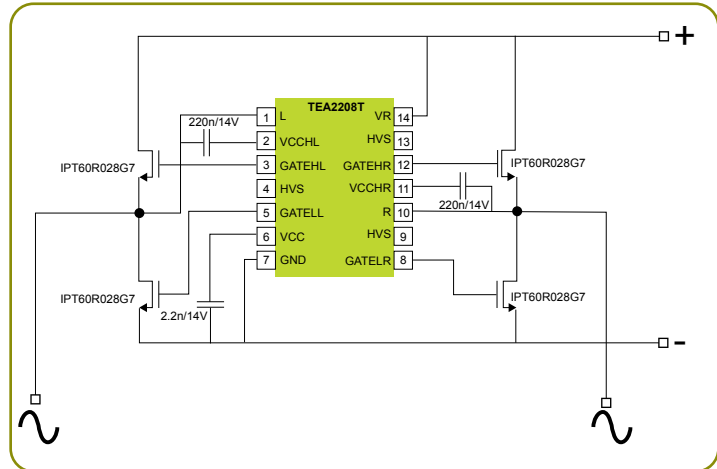
TEA2208 BLOCK DIAGRAM



TYPICAL CONFIGURATION



APPLICATION DIAGRAM



ORDERING INFORMATION

| Type Number | Package | | |
|-------------|---------|--|----------|
| | Name | Description | Version |
| TEA2208T/1 | SO14 | Plastic small outline package; 14 leads; body width 3.9 mm | SOT108-1 |

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