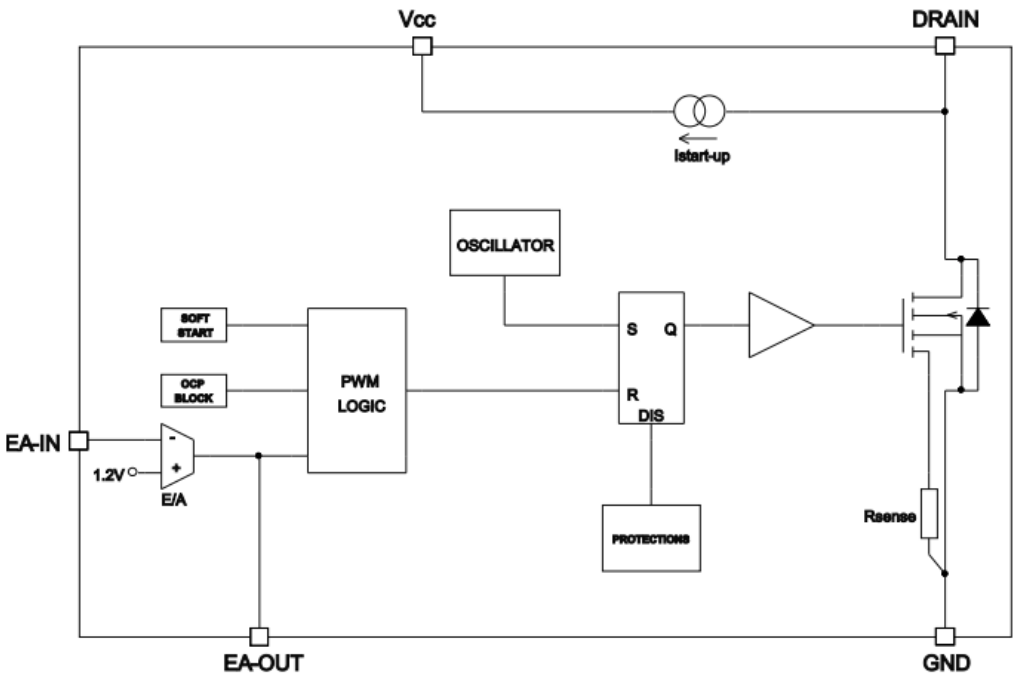
Flexible And Rugged Controller Simplifies Power For Smart Devices

STMicroelectronics' VIPer222 controller for high-voltage converters up to 8 W brings small size, low cost, and versatility to applications such as home appliances, building-automation devices, smart lighting, and smart meters. With integrated features including an error amplifier, current-sensing MOSFET, and high-voltage startup circuitry, the VIPer222 can be used in a wide variety of popular converter topologies (see the figure). These include non-isolated flyback converters, isolated flyback converters with primary-side regulation or secondary-side regulation using a photo-coupler, buck converters, and buck-boost converters.

The VIPer222 is the first in ST's highly integrated controller family to contain a 730-V avalanche-rugged power stage, ensuring superior reliability. The IC also provides short-circuit protection, thermal protection, pulse skipping protection, soft start, and circuitry to manage burst-mode operation for enhanced efficiency at light load.

Additional features minimize the external bill of materials and simplify converter design. These include a wide operating voltage (V_{CC}) range of 4.5 V to 30 V, which allows the device to be easily powered whatever the desired output voltage. Light-load power consumption of less than 40 mW simplifies meeting eco-design guidelines, and the jittered PWM controller allows the use of small filter components.

The VIPer222 is in production now and available in 5-mm x 4-mm SSOP10 from $0.33 for orders of 1000 pieces. For further information, visit the VIPER222 product page.



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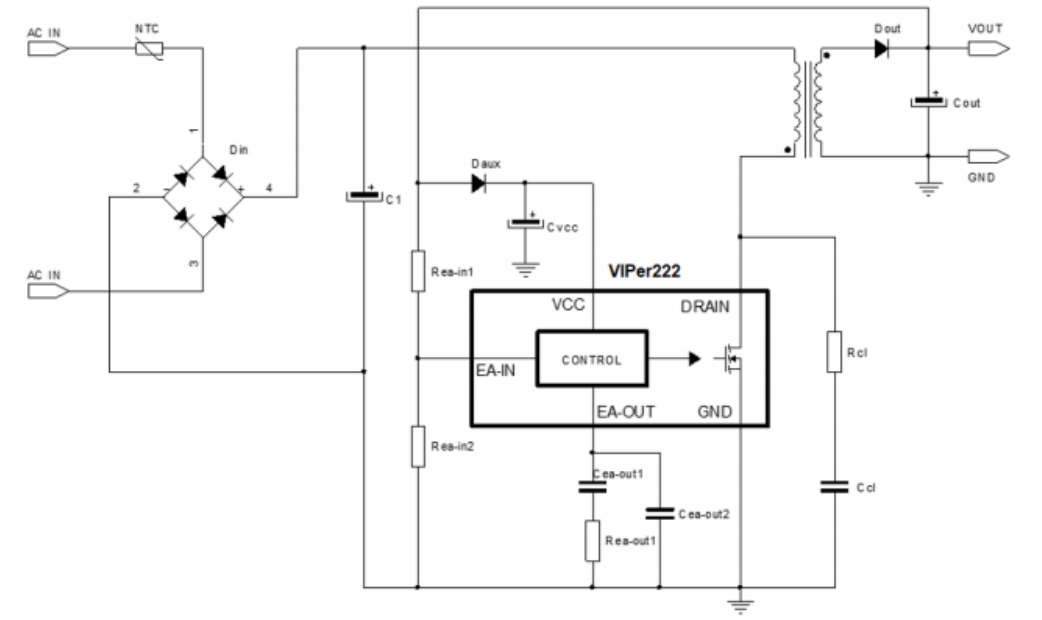

(b)

Figure. Internal block diagram and an application circuit for the VIPer222 controller in a nonisolated flyback converter.