

## Product Overview

### FLS1600XS: Half-Bridge LLC Resonant Control IC for Lighting

For complete documentation, see the data sheet.

The FLS-XS series of general lighting power controllers includes highly integrated power switches for medium- to high-power lumens applications. Offering everything necessary to build a reliable and robust half-bridge resonant converter, the FLS-XS series simplifies designs and improves productivity, while improving performance. The FLS-XS series combines power MOSFETs with fast recovery type body diodes, a high-side gate-drive circuit, an accurate current controlled oscillator, frequency limit circuit, soft-start, and built-in protection functions. The high-side gate-drive circuit has common-mode noise cancellation capability, which guarantees stable operation with excellent noise immunity. The fastrecovery body diode of the MOSFETs improves reliability against abnormal operation conditions, while minimizing the effect of reverse recovery. Using zero voltage switching (ZVS) dramatically reduces the switching losses and significantly improves efficiency. ZVS also reduces switching noise noticeably, which allows a small-sized Electromagnetic Interference (EMI) filter. The FLS-XS series can be applied to resonant converter topologies such as series resonant, parallel resonant, and LLC resonant converters.

### Features

- Variable Frequency Control with 50% Duty Cycle for Half-Bridge Resonant Converter Topology
- High Efficiency through Zero Voltage Switching (ZVS)
- Internal UniFET™ with Fast-Recovery Body Diode
- Fixed Dead Time (350ns) Optimized for MOSFETs
- Up to 300kHz Operating Frequency
- Auto-Restart Operation for All Protections with External  $LV_{CC}$
- Protection Functions: Over-Voltage Protection (OVP), Over-Current Protection (OCP), Abnormal Over-Current Protection (AOCP), Internal Thermal Shutdown (TSD)

### Applications

- Lighting

### Part Electrical Specifications

Product	Compliance	Status	Topology	$V_I$ Min (V)	$V_I$ Max (V)	$V_O$ Max (V)	$I_O$ Max (mA)	$f_{sw}$ Typ (kHz)	Package Type
FLS1600XS	Pb-free	Active	LLC Half Bridge	13.8	500	500 $V_{BVDS}$	1.25 $\Omega$ - $R_{DS(ON)}$	100	SIP-9
	Halide free								

For more information please contact your local sales support at [www.onsemi.com](http://www.onsemi.com).

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