

LNK362-364



LinkSwitch-XT[®] Family

Energy Efficient, Low Power Off-Line Switcher IC

Product Highlights

Optimized for Lowest System Cost

- Proprietary IC trimming and transformer construction techniques enable *Clamless*[™] designs with LNK362 for lower system cost, component count and higher efficiency
- Fully integrated auto-restart for short circuit and open loop protection
- Self-biased supply – saves transformer auxiliary winding and associated bias supply components
- Frequency jittering greatly reduces EMI
- Meets HV creepage requirements between DRAIN and all other pins both on the PCB and at the package
- Lowest component count switcher solution

Features Superior to Linear/RCC

- Accurate hysteretic thermal shutdown protection – automatic recovery improves field reliability
- Universal input range allows worldwide operation
- Simple ON/OFF control, no loop compensation needed
- Eliminates bias winding – simpler, lower cost transformer
- Very low component count – higher reliability and single side printed circuit board
- Auto-restart reduces delivered power by 95% during short circuit and open loop fault conditions
- High bandwidth provides fast turn-on with no overshoot and excellent transient load response

EcoSmart[®] – Extremely Energy-Efficient

- Easily meets all global energy efficiency regulations with no added components
- No-load consumption <300 mW without bias winding at 265 VAC input (<50 mW with bias winding)
- ON/OFF control provides constant efficiency to very light loads – ideal for mandatory CEC regulations

Applications

- Chargers/adapters for cell/cordless phones, PDAs, digital cameras, MP3/portable audio players, and shavers
- Supplies for appliances, industrial systems, and metering

Description

LinkSwitch-XT incorporates a 700 V power MOSFET, oscillator, simple ON/OFF control scheme, a high-voltage switched current source, frequency jittering, cycle-by-cycle current limit and thermal shutdown circuitry onto a monolithic IC. The startup

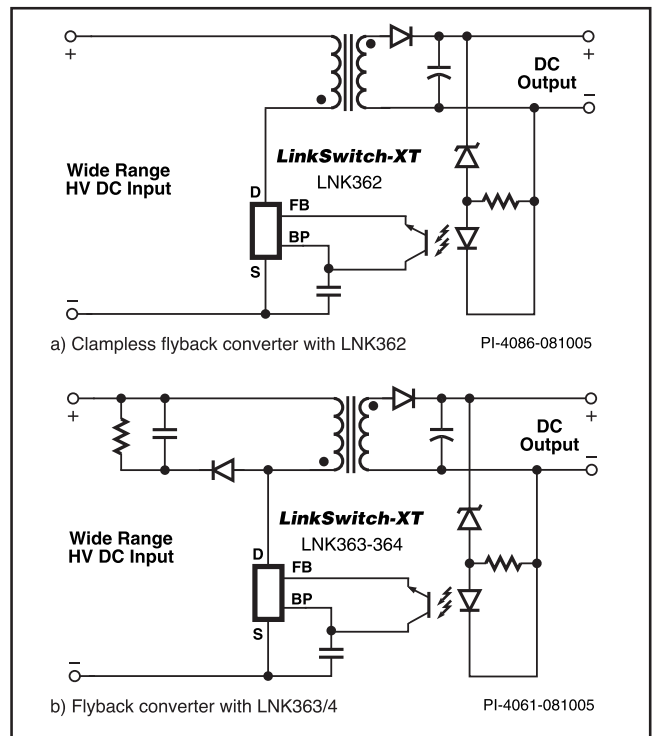


Figure 1. Typical Application with LinkSwitch-XT.

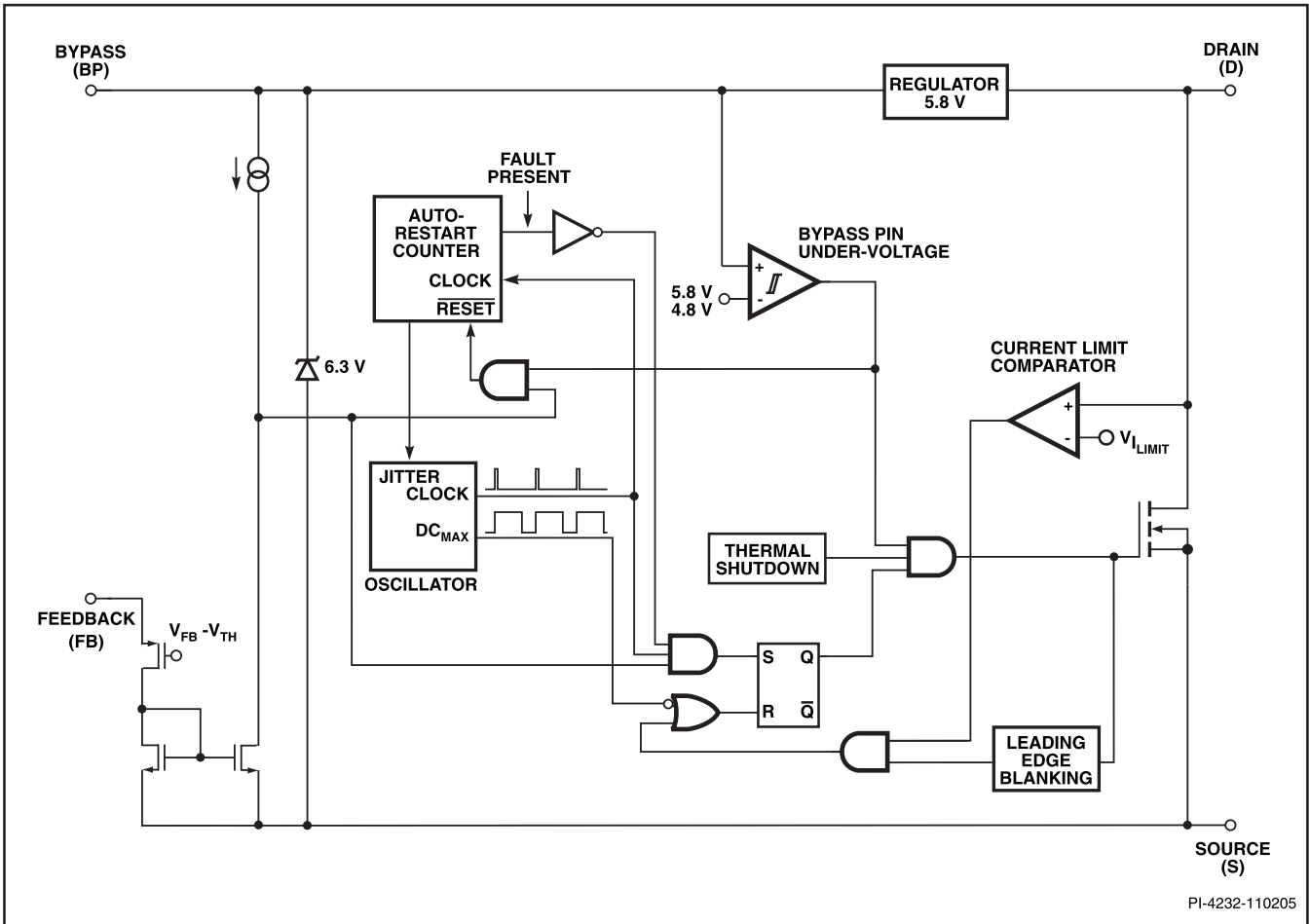
OUTPUT POWER TABLE ⁽⁴⁾				
PRODUCT ⁽³⁾	230 VAC ±15%		85-265 VAC	
	Adapter ⁽¹⁾	Open Frame ⁽²⁾	Adapter ⁽¹⁾	Open Frame ⁽²⁾
LNK362P/G/D	2.8 W	2.8 W	2.6 W	2.6 W
LNK363P/G/D	5 W	7.5 W	3.7 W	4.7 W
LNK364P/G/D	5.5 W	9 W	4 W	6 W

Table 1. Output Power Table.

Notes:

1. Minimum continuous power in a typical non-ventilated enclosed adapter measured at 50 °C ambient.
2. Minimum practical continuous power in an open frame design with adequate heat sinking, measured at 50 °C ambient.
3. Packages: P: DIP-8B, G: SMD-8B, D: SO-8C. Please see Part Ordering Information.
4. See Key Application Considerations section for complete description of assumptions.

and operating power are derived directly from the DRAIN pin, eliminating the need for a bias winding and associated circuitry.



PI-4232-110205

Figure 2. Functional Block Diagram.

Pin Functional Description

DRAIN (D) Pin:

Power MOSFET drain connection. Provides internal operating current for both startup and steady-state operation.

BYPASS (BP) Pin:

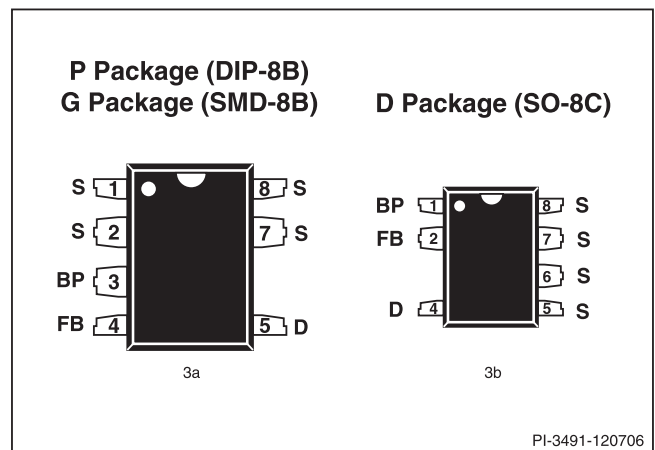
Connection point for a 0.1 μF external bypass capacitor for the internally generated 5.8 V supply. If an external bias winding is used, the current into the BP pin must not exceed 1 mA.

FEEDBACK (FB) Pin:

During normal operation, switching of the power MOSFET is controlled by this pin. MOSFET switching is disabled when a current greater than 49 μA is delivered into this pin.

SOURCE (S) Pin:

This pin is the power MOSFET source connection. It is also the ground reference for the BYPASS and FEEDBACK pins.



PI-3491-120706

Figure 3. Pin Configuration.