JW15158K

Offline QR GaN Flyback Converter

DESCRIPTION

The JW15158K is an isolated offline Flyback converter with GaN integrated, which features quasi-resonant (QR) operation. QR control improves efficiency by reducing switching loss and benefits EMI performance with nature frequency variation. And an internal frequency limitation is utilized to overcome the inherent disadvantages of QR Flyback.

The JW15158K comprises a HV pin for startup to eliminate conventional startup resistor and save standby mode energy consumption. Also, the HV pin is used for X-cap discharge when AC input is removed, which helps to reduce X-cap discharge loss and achieve extremely low standby power loss.

The JW15158K is available in ESOP10 package. The high level of integration provides an easy-to-use, low component count and high efficiency application solution for isolated power delivery.

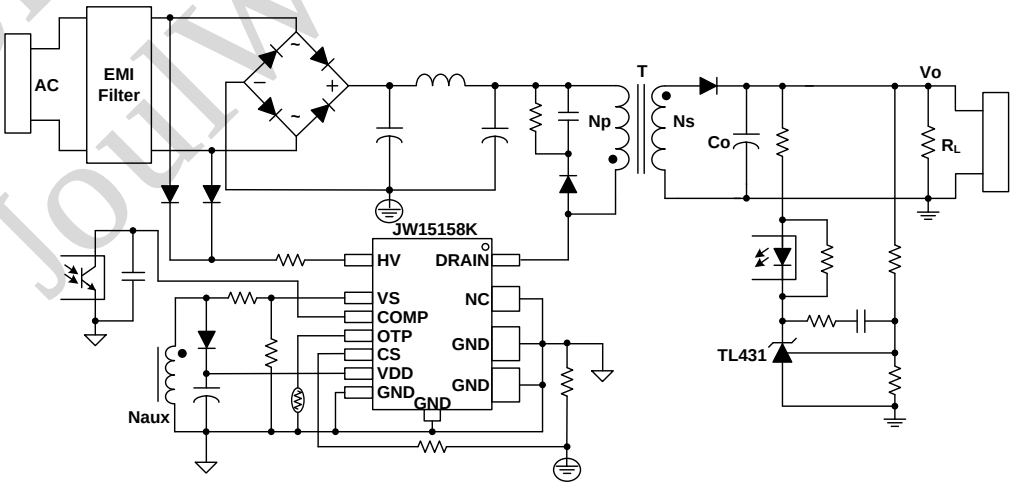
FEATURES

- Integrated 700V GaN
- Built-in High-Voltage Startup
- X-capacitor Discharge Function
- Wider VDD Operation Range
- QR Operation for High Efficiency
- Optional OCP and OPP Function for Different PD and QC Output Application
- Very Low Standby Power Consumption
- Cycle-by-Cycle Current Limit
- Reliable Fault Protections: VDD OVP, VS OVP, Brown-In, Brown-out, CS Open Protection, OCP, OPP, OLP, External OTP and Internal OTP
- Frequency Jitter to Ease EMI Compliance
- Available in ESOP10 Package

APPLICATIONS

- PD and QC Chargers
- AC/DC Adapters with Wide Output Range

TYPICAL APPLICATION



ORDER INFORMATION

DEVICE[1)]	PACKAGE	TOP MARKING[2)]	ENVIRONMENTAL[3)]
JW15158KESOPAX#TR	ESOP10	J15158K YW□□□□□	Green

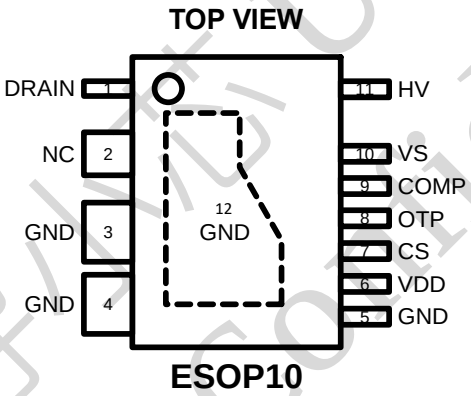
Notes:

1) JW□ □ #TR
- Tape and Reel (If TR is not shown, it means Tube)
- Package Code
- Part No.

2) Line1: J □□□□□□
- Product code
- JoulWatt LOGO

Line2: YW □□□□□
- Lot number
- Week code
- Year code

PIN CONFIGURATION



PIN DESCRIPTION

PIN ESOP10	NAME	DESCRIPTION
1	DRAIN	Drain terminal of the Internal GaN.
2	NC	
3, 4, 5, 12	GND	The ground of IC.
6	VDD	Bias power input to the converter. A hold-up capacitor to GND is required.
7	CS	Current sensing input pin. This pin sense the primary switch current for peak current control and OCP. Besides, this pin is used to choose OCP or OPP function at the initial start.
8	OTP	External temperature sensing pin. An external NTC (negative temperature coefficient) thermistor to GND is required.
9	COMP	Feedback input pin for Flyback QR converter. Connect to an opto-coupler.
10	VS	Voltage sensing input pin. Coupled to the auxiliary winding via a resistor divider to monitor the output voltage for OVP protection. This pin also detects the resonant valley to implement QR operation.
11	HV	High voltage input pin. This pin provides source current to charge VDD. This pin is used for X-cap discharge when AC input is removed. Besides, this pin also senses input voltage for brown-in and brown-out protection.

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