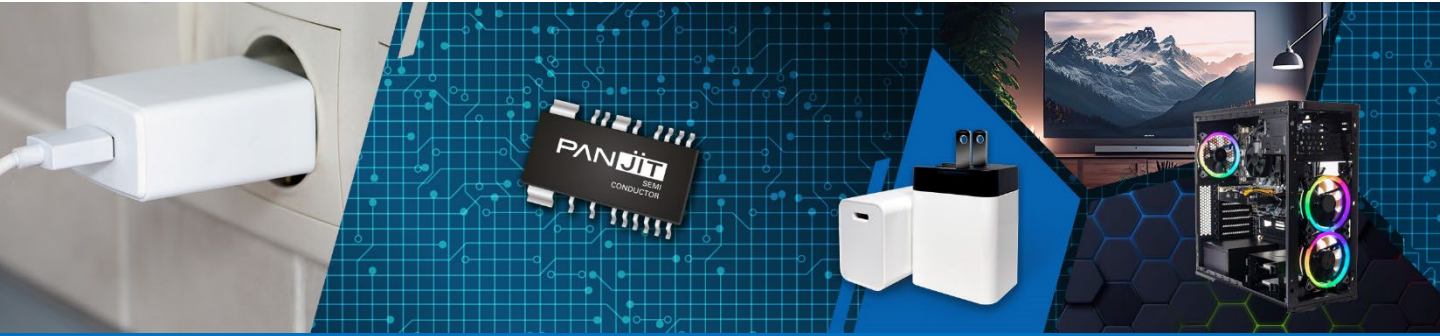


High Power Density AC/DC Chip Solution

Resonant Flyback Controller (Integrated with a High-Side SJ MOSFET)



PANJIT's resonant Flyback controller integrates a high-side 650V/4A 1.2Ω SJ MOSFET in a TSSOP-18 package. This controller utilizes an active snubber circuit to make more effective use of the extra energy (leakage inductance and stray components) in the Flyback system. Benefiting from the unique control strategy, its system's both power switches (High-Side MOSFET and Low-Side MOSFET) are almost always Zero Voltage Switching (ZVS). Therefore, the switching loss of the power switches can be minimized and the efficiency can be optimized.

Furthermore, this controller can also be used in conjunction with GaN to meet higher frequency power system design requirements.

► Features

- High side SJ MOSFET integrated
- ZVS for low-side and high-side switches
- Optimal efficiency and power density
- Power supply applications from 30W to 150W
- Ultra-low no load consumption < 30mW

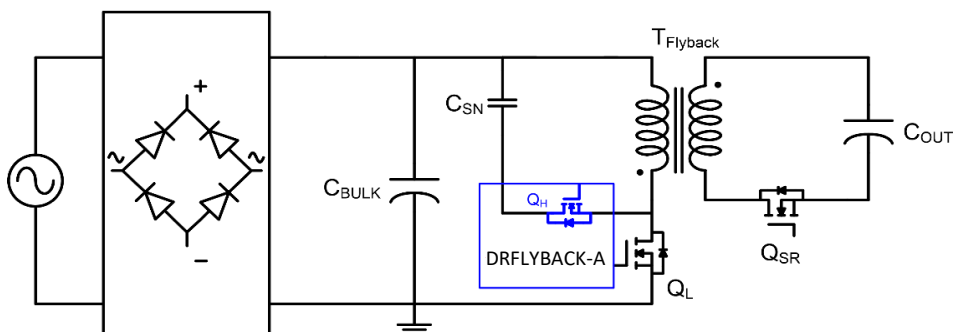
► Operation Mode

- CRM/DCM

► Application

- PD Charger
- Power Adapter
- Auxiliary Power
- TV Monitor

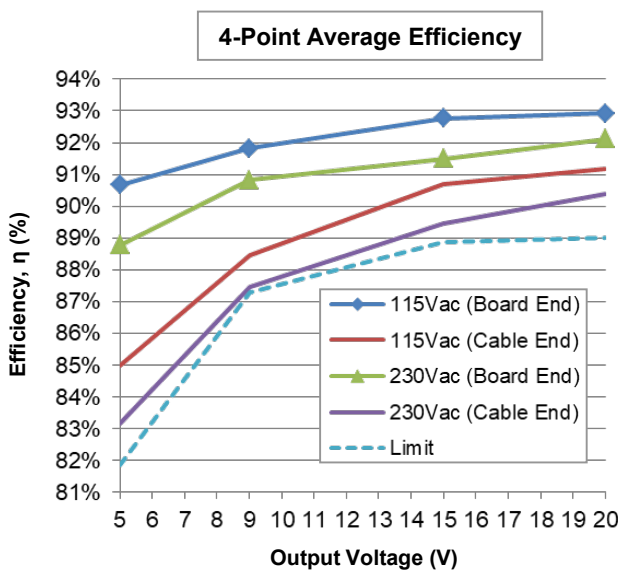
► Block Diagrams



➤ Applications Demo: 65W High Power Density USB-C PD Charger

Topology	Flyback (Using SJ MOSFET only, GaN FET not needed)
IC Solution	DRFLYBACK-A
IC Package	TSSOP-18
Reference Design	65W USB-C PD Adapter/Charger (foldable plug or non-foldable plug)
PCBA Dimensions	38.60mm × 34.60mm × 22.50mm = 30.05cc ★ 2.16W/cc (35.40W/in³) (PCBA only)
Dimensions with Case	43.60mm × 38.85mm × 27.00mm = 45.73cc (non-foldable) ★ 1.42W/cc (23.27W/in³)
	54.00mm × 39.20mm × 26.90mm = 56.94cc (foldable) ★ 1.14W/cc (18.68W/in³)
Input	90Vac - 264Vac (universal)
Output	PD: 5V/3A, 9V/3A, 12V/3A, 15V/3A, 20V/3.25A (65W max.)
	PPS: 3.3V - 21V/3A
Efficiency	92.06% @90V _{ac} /47Hz, 20V _{OUT} full load
	> 93% @115V _{ac} /230V _{ac} , 20V _{OUT} full load
	Peak Efficiency of 93.47% (Meet DoE Level VI and CoC Tier 2 standard)
No Load Consumption	~ 29mW @230Vac
Case Temperature	<77°C @90Vac, full load, T _{AMB} : 25°C

➤ Performance



[Cable-end: with 135mΩ Type-C cable (Meet CoC Tier2 & DoE VI Standards)]

