

Product Overview

FAN63901J: Highly Integrated Secondary-Side Adaptive USB Type-C Charging Controller with USB-PD

For complete documentation, see the data sheet.

The FAN63901JMPX is a highly integrated, secondary-side power adapter controller supporting USB Type-C and USB Power Delivery 2.0/3.0. It includes a fully autonomous USB PD state machine which is fully compliant with the latest USB PD 3.0 specification, minimizing design time and cost. Support for the latest Programmable Power Supply (PPS) rules allows for control of voltages from 3.3V to 21V and current limits from 1A to 3A to meet a wide range of applications and power levels.

To minimize BOM count, the FAN63901JMPX includes an NMOS gate driver for VBUS load switch control, as well as Constant Voltage (CV) and Constant Current (CC) control blocks with adjustable internal references. To ensure proper operation of the adapter, various protections are integrated into the controller including output over-voltage protection, under-voltage protection, external over-temperature protection via NTC, internal over-temperature protection, CC over voltage protection.

Features

- USB Type-C Rev 1.3, PD2.0, PD3.0, and PPS Compatible.
- Support 60W Output Profile (PDO: 5V, 9V, 15V, 20V. APDO: 9V, 15V, 20V)
- Small Current Sensing Resistor (5mΩ)
- Built-in Output Capacitor Bleeding Function
- Secondary-Side Constant Voltage (CV) and Constant Current (CC) Regulation with Two Operational Amplifiers of Open-Drain Type for Dual-Loop CV/CC Control
- N-Channel back to back MOSFET Control as a Load Switch
- Precise Voltage and Current Control for Minimum step size via 10-bit DAC's
- 10-bit ADC for Monitoring Voltage, Current and Temperature
- Auto Re-start Protection Mode Option to Disable Load Switch for 2 seconds
- Support Protections: Output Over-Voltage Protection, Under-Voltage Protection, External Over Temperature Protection via NTC, internal Over Temperature Protection, Cable Fault Protection, and CC lines Over Voltage Protection

For more features, see the data sheet

Benefits

- Compliant with the latest USB-IF specs
- Supports key profiles
- High efficiency
- Fast Discharging during Change of Output Mode

Applications

- USB-PD/PPS Protocol Controller
- Battery Chargers
- AC Adapters

End Products

- Smart Phones and Feature Phones
- Tablet PCs
- Portable Devices

Part Electrical Specifications

Product	Pricing (\$/Unit)	Compliance	Status	V _{CC} Max (V)	V _{ref} Typ (V)	I _{CC} Max (A)	T _A Min (°C)	T _A Max (°C)	Package Type
FAN63901JMPX	0.9333	Pb-free Halide free non AEC-Q and PPAP	Active	20V		10mA	-40	125	WQFN-24

For more information please contact your local sales support at www.onsemi.com.

Created on: 7/31/2021