

TDA21570

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High-efficiency OptiMOS™ 70 A integrated power stage with internal current sense

Infineon's TDA21570, 70 A **integrated power stage**, contains a low quiescent current synchronous buck gate-driver IC. In addition, the TDA21570 combines control and synchronous MOSFETs along with an active diode structure that achieves low V_{SD} similar to a Schottky Diode with very little reverse recovery charge.

The package is optimized for PCB layout, heat transfer, driver/MOSFET control timing, and minimal switch node ringing when layout guidelines are followed. The paired gate driver and MOSFET combination enables higher efficiency at lower output voltages required by cutting edge CPU, GPU and DDR memory designs.

Operation of up to 1.5 MHz switching frequency enables high performance transient response, allowing miniaturization of output inductors, as well as input and output capacitors while maintaining industry leading efficiency.

Summary of Features

- Integrated driver, active diode, control MOSFET Q1 and synchronous MOSFET Q2
- On-chip MOSFET current sensing and reporting at 5 μ A
- Input voltage (V_{IN}) range of 4.25 V to 16 V
- Output current capability of 70 A
- Enhanced Fault reporting and identification
- Over temperature protection and thermal shutdown
- Auto-replenishment on bootstrap capacitor
- Compatible with 3.3 V tri-state PWM Input
- DEEP SLEEP mode for power saving via EN= low (32 μ A typ)
- Small 5 mm x 6 mm x 0.9 mm PQFN package

Benefits

- High efficiency
- Industry best current sense accuracy
- Enhance fault identification and reporting
- Advanced protection features like high-side MOSFET short detection, over temp and thermal shutdown
- Low quiescent for power saving via EN = low

Potential Applications

- High frequency, low profile **DC-DC converters**
- Voltage regulators for CPUs, GPUs and DDR memory arrays
- Telecom** controlled and uncontrolled

Parametrics

Parametrics	TDA21570
Features	3% current and temperature telemetry
I_{out}	70 A
Input Voltage min max	4.25 V 16 V
Moisture Sensitivity Level	MSL 2
Output Voltage min max	0.225 V 5.5 V
Package	PQFN 5 x 6
Qualification	Industrial
Switching Frequency max	1500 kHz
Technology	OPTIMOS 6
Type	Powerstage

Documents

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FIT Report

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Product Selection Guide

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Sales Product Name	TDA21570
OPN Info	TDA21570AUMA1
Product Status	active and preferred
Infineon Package name	PG-IQFN-39
Standard Package name	
Order online	
Completely lead free	no
Halogen free	yes
RoHS compliant	yes
Packing Size	5000
Packing Type	TAPE & REEL
Moisture Level	
Moisture Packing	DRY

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