Product Overview

FAN3224TUM1X-F085: Low-Side Gate Drivers, Dual 4-A High-Speed

For complete documentation, see the data sheet.

The FAN3223-25 family of dual 4 A gate drivers is designed to drive N-channel enhancement-mode MOSFETs in low-side switching applications by providing high peak current pulses during the short switching intervals. The driver is available with either TTL or CMOS input thresholds. Internal circuitry provides an under-voltage lockout function by holding the output LOW until the supply voltage is within the operating range. In addition, the drivers feature matched internal propagation delays between A and B channels for applications requiring dual gate drives with critical timing, such as synchronous rectifiers. This also enables connecting two drivers in parallel to effectively double the current capability driving a single MOSFET.
The FAN322X drivers incorporate MillerDrive™ architecture for the final output stage. This bipolar-MOSFET combination provides high current during the Miller plateau stage of the MOSFET turn-on / turn-off process to minimize switching loss, while providing rail-to-rail voltage swing and reverse current capability.
The FAN3223 offers two inverting drivers and the FAN3224 offers two non-inverting drivers. Each device has dual independent enable pins that default to ON if not connected. In the FAN3225, each channel has dual inputs of opposite polarity, which allows configuration as non-inverting or inverting with an optional enable function using the second input. If one or both inputs are left unconnected, internal resistors bias the inputs such that the output is pulled LOW to hold the power MOSFET OFF.

The FAN3224TUM1X-F085 and FAN3224TM1X-F085 are proposed in a SO8 package with exposed pad, to improve heat dissipation for fast switching application such as On Board Charger in EV/HEV.

Features

- SO8 with Exposed Pad
- Industry-Standard Pinouts
- 4.5-V to 18-V Operating Range
- 5-A Peak Sink/Source at VDD = 12 V
- 4.3-A Sink / 2.8-A Source at VOUT = 6 V
- Choice of TTL or CMOS Input Thresholds
- Three Versions of Dual Independent Drivers: -Dual Inverting + Enable (FAN3223) -Dual Non-Inverting + Enable (FAN3224) -Dual-Inputs (FAN3225)
- Internal Resistors Turn Driver Off If No Inputs
- MillerDrive™ Technology
- 12-ns / 9-ns Typical Rise/Fall Times (2.2-nF Load)

  For more features, see the data sheet

Benefits

- enhanced heat dissipation for fast switching application

Applications

- Switch-Mode Power Supplies
- High-Efficiency MOSFET Switching
- Synchronous Rectifier Circuits
- DC-to-DC Converters
- Motor Control

End Products

- EV/HEV

Part Electrical Specifications

Product	Pricing ($/Unit)	Compliance	Status	Power Switch	Number of Outputs	Topology	Isolation Type	V_{in} Max (V)	V_{CC} Max (V)	Drive Source/Sink Typ (mA)	Rise Time (ns)	Fall Time (ns)	t_p Max (ns)	Package Type
FAN3224TUM1X-F085	1.6	AEC Qualified PPAP Capable Pb-free Halide free	Active											SOIC-8 EP

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

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