



**PROTECT
CONTROL
SENSE**



IX4351NE

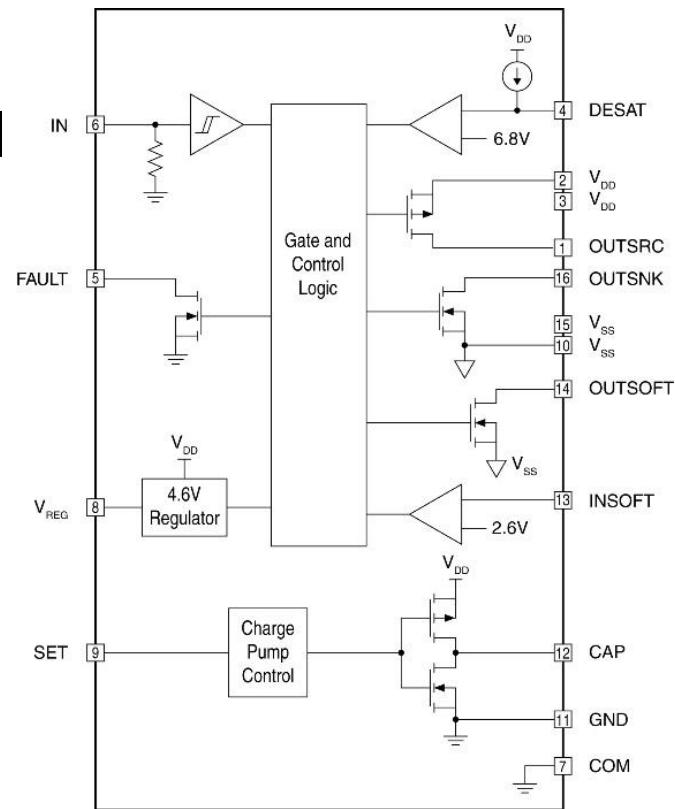
9A Low Side SiC MOSFET & IGBT Driver

New Product Introduction

October, 2019

Introducing the IX4351NE

- The IX4351NE is specifically designed to drive **SiC** MOSFETs and high power IGBTs.



IX4351NE Features & Benefits

Features

Separate 9A peak source and sink outputs

-10V to +25V operating voltage range

Benefits

Quick turn-on and turn-off of SiC MOSFET or IGBT (minimizing switching losses)

Independent turn-on and turn-off adjustments

Provides sufficient V_{GS} voltage for full enhancement of power discrete **and** allows for negative pull-down voltage for fast turn-off and robust dV/dT immunity

IX4351NE Features & Benefits

Features

Internal negative charge pump regulator for selectable negative gate drive bias.

TTL and CMOS compatible input

Desaturation detection

Soft shutdown

Benefits

Separate negative gate drive bias supply not needed.

Selectable negative bias voltage can be tailored for specific SiC MOSFET.

Logic input signal does not need to be level shifted even with negative bias gate voltage.

Detects over current condition of discrete SiC MOSFET

Soft turn-off of SiC MOSFET during desaturation condition, preventing damaging dV/dt .

IX4351NE Features & Benefits

Features

Thermally enhanced SOIC package

Undervoltage lockout (UVLO)

Thermal shutdown

Open drain FAULT output

Internal 4.6V regulator

Benefits

>2W power dissipation capability allows for higher ambient and higher frequency operation.

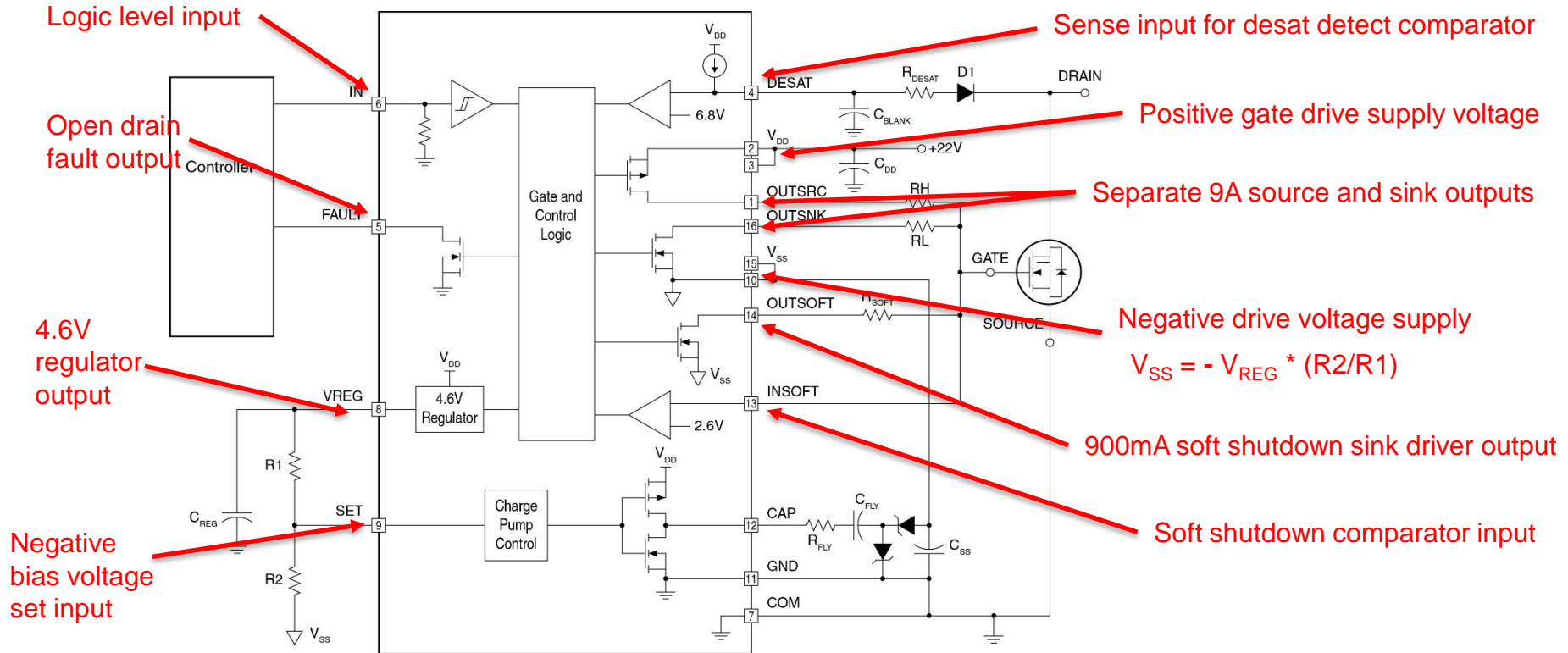
Prevents turning-on SiC MOSFET with insufficient gate voltage.

Prevents damage to IC due to excessive thermal power dissipation.

Signals fault condition to microcontroller.

Can be used to power discrete optocouplers for isolated applications.

IX4351NE Features & Benefits



IX4351NE Applications

- Driving SiC MOSFETs and IGBTs
- PFC, AC/DC, DC/DC converters
- EV on board and off board chargers
- UPS
- Industrial inverters
- Motor drivers

Primary Target Customers and Markets

- Power supplies
- EV chargers
- Motor controls
- Industrial power
- UPS

Comparison of IX4351NE with IXDN609SI

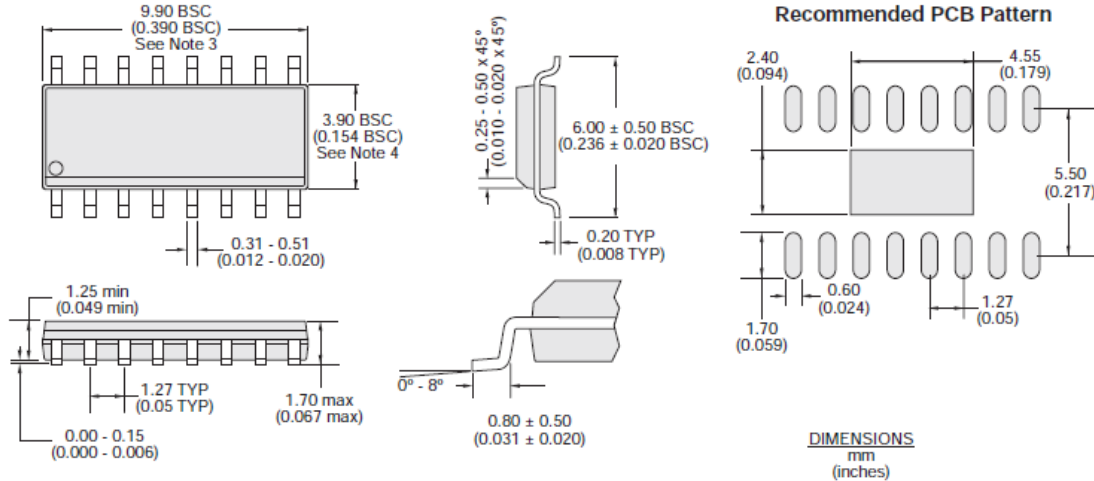
Feature	IX4351	IXDN609SI
Supply voltage range	-10V to +25	0V to +35V
Output current	±9A	±9A
Charge pump for negative bias voltage	Yes	No
DESAT with soft shutdown	Yes	No
UVLO and TSD	Yes	No
Regulator output to supply discrete optocoupler	Yes	No
FAULT output	Yes	No

IX4351NE Electrical Specifications

Parameter	Rating
Positive Supply Voltage	13V to 25V
Negative Supply Voltage	-10V to 0V
Gate Drive Output Current	±9A
Operating Ambient Temperature	-40°C to +125°C

Dimensions and part numbers

IX4351NE 16-Pin SOIC Package



Part Number

IX4351NE

IX4351NETR

Descriptio

16-lead power SOIC with exposed thermal pad. In tubes (50/Tube)

16-lead power SOIC with exposed thermal pad. In Tape & Reel (2000/reel).

Pricing, Samples, Availability and Contacts

- **Pricing and Samples**

- Please contact Littelfuse product management and sales representatives for pricing and samples availability.

- **Production Availability**

- Production lead-time: 12 weeks
- Packaging: 16-lead SOIC with exposed thermal pad

- **Contacts**

- Product Manager: Tom Truax
Email: ttruax@littelfuse.com

Sales Tools, Technical Support and Keywords

- **Current datasheets are available on www.ixysic.com.**
 - Enter IX4351 in the search box.

- **Application and Technical Support: 1-978-524-6817**

- **Suggested Keywords**
 - SiC MOSFET
 - Gate driver
 - Silicon Carbide
 - EV charger
 - Inverter
 - High switching frequency
 - UPS
 - Motor drivers