

HVIC

M81748FP

1200V HIGH VOLTAGE HALF BRIDGE DRIVER

1.Outline

Application :

Power IGBT/MOSFET module driver in inverter systems

Features :

Type Name	Rating Voltage	Output Current	Drive Type	Input Signal	Dead-time Control	Package	RoHS
M81748FP	1200V	±2A	Half Bridge Drive	2	Input Signal	24P2Q	OK

Functions :

- 5V logic input
- Short and earth protection(Desaturation)
- Fault signal output(Desaturation)
- Fault signal input and output shutdown
- Under voltage lockout
- Input interlock · Fault automatic reset
- Active clamp output for gate shutdown(Sink 2A)

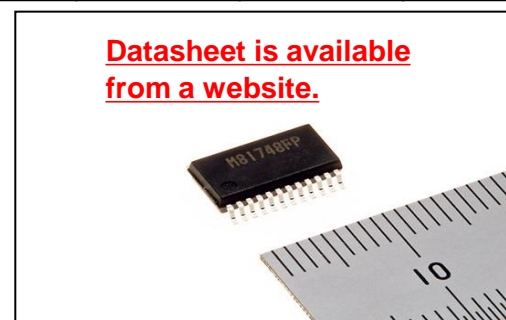


Fig.1 Product photograph

2.Features

Desaturation detection for reduced power loss reduction in power semiconductors

(No power loss at shunt resistor)

- P-side and N-side desaturation detection prevents over-current thermal destruction of power semiconductors using 1200V P-channel MOSFET
- HVIC directly detects shorts and earth faults in power semiconductors on P-side and transmits fault signals to N-side, shutting down systems.
- Contributes to power loss reduction in power semiconductors.

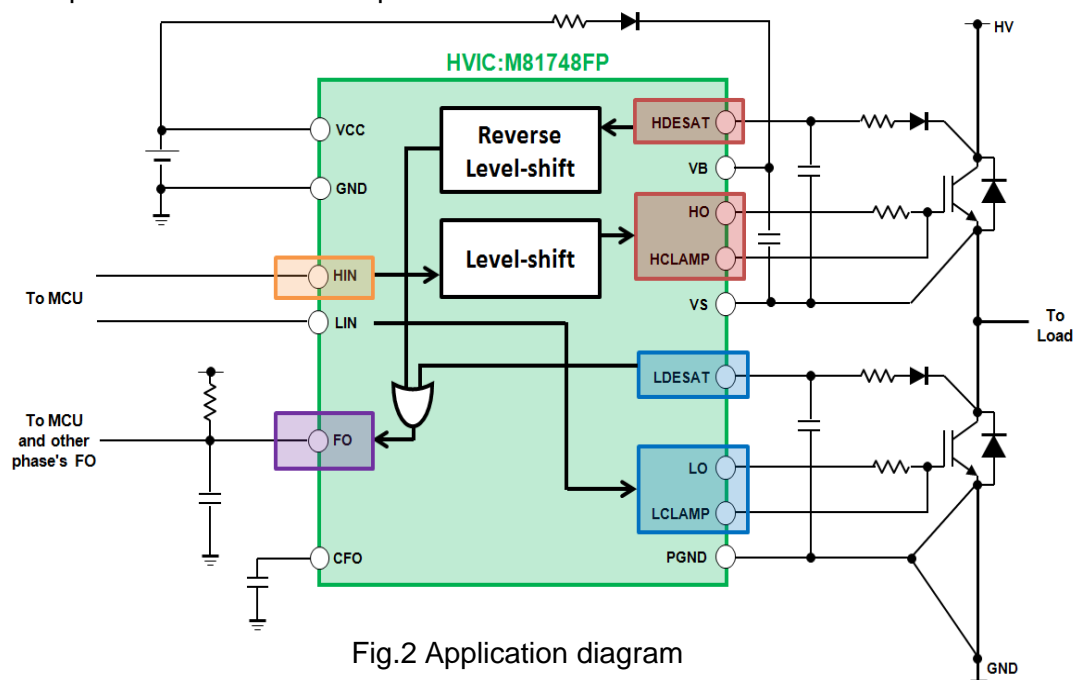


Fig.2 Application diagram

3.Evaluation board

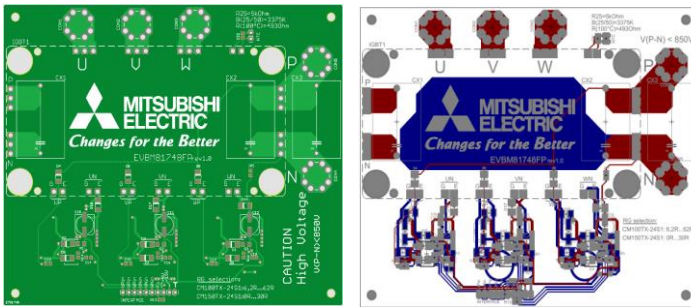


Fig.3 Evaluation board

Evaluation board will be available on Jun 2015.

Evaluation board has been prepared for M81748FP with 6in1 IGBT modules. This board carries 3 pieces of M81748FP to drive up to 150A-class IGBT modules.

4.Evaluation results

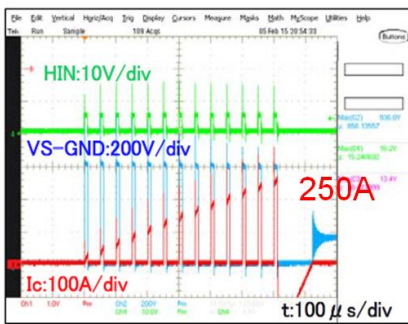


Fig.4 Normal switching

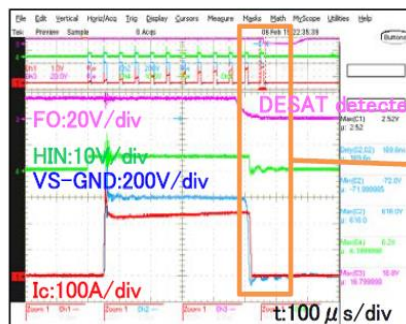
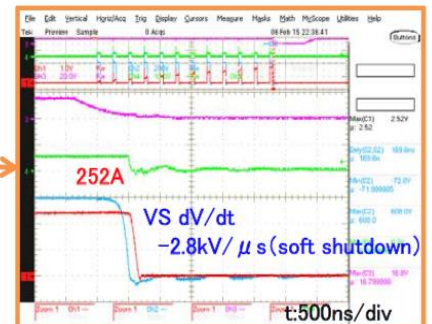


Fig.5 Fault detection



Evaluation conditions:

HVIC:M81748FP
 IGBT module:CM100TX-24S1
 (Mitsubishi Electric)
 VDC=600(V) Ta=25(°C) Rg=0(Ω)

- No destruction and no malfunction occurred in both high-side and low-side during IGBT driving. (Up to 250A)
- High-side fault signal is successfully detected and transmitted to low-side during IGBT driving.

5.Others

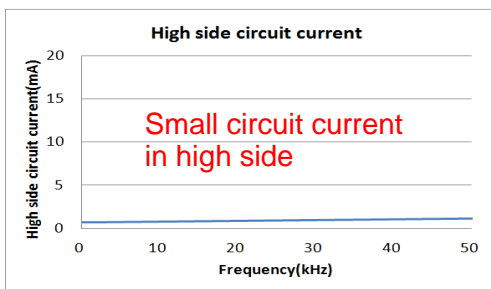


Fig.6 M81748FP circuit current

HVIC advantage

- Small board
- Higher functionality adding external parts to HVIC
- Small circuit current in high side enables one power supply using bootstrap in 3 phase inverter

Keep safety first in your circuit designs!

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