Inverter for motor control

600V IGBT Intelligent Power Module (IPM) for low speed switching drive

BM63363S-VA BM63363S-VC

General Description

BM63363S-VA/-VC is an Intelligent Power Module composed of gate drivers, bootstrap diodes, IGBTs, fly wheel diodes. Low saturation voltage IGBTs optimized for low speed switching drive (to 6kHz) such as a compressor is adopted. Please examine high speed switching series for high speed switching drive.

Key Specifications

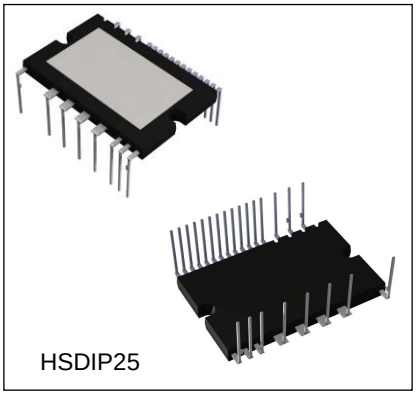
- IGBT Collector-Emitter Voltage V_{CESAT}: 1.5V(Typ)
- FWD Forward Voltage V_F: 1.5V(Typ)
- FWD Reverse Recovery Time t_{rr}: 100ns(Typ)
- Module Case Temperature T_C: -25 to +100°C
- Junction Temperature T_{jmax}: 150°C

Features

- 3phase DC/AC Inverter
- 600V/10A
- Low Side IGBT Open Emitter
- Built -in Bootstrap Diode
- High Side IGBT Gate Driver(HVIC):
  SOI (Silicon On Insulator) Process,
  Drive Circuit, High Voltage Level Shifting,
  Current Limit for Bootstrap Diode,
  Control Supply Under-Voltage Locked Out (UVLO)
- Low Side IGBT Gate Driver(LVIC):
  Drive Circuit, Short Circuit Current Protection (SCP),
  Control Supply Under Voltage Locked Out (UVLO),
  Thermal Shutdown (TSD)
- Fault Signal(LVIC)
  Corresponding to SCP (Low Side IGBT), TSD, UVLO Fault
- Input Interface 3.3V, 5V Line
- UL Recognized: File E468261

Package

	W(Typ) x D(Typ) x H(Typ)
HSDIP25	38.0mm x 24.0mm x 3.5mm
HSDIP25VC	38.0mm x 24.0mm x 3.5mm



Application

- Low Speed Switching Drive of AC100 to 240Vrms(DC Voltage: Less Than 400V) Class Motor
- Low Speed Switching Drive of Compressor Motor for Air Conditioner, Washing Machine, Refrigerator

Typical Application Circuit

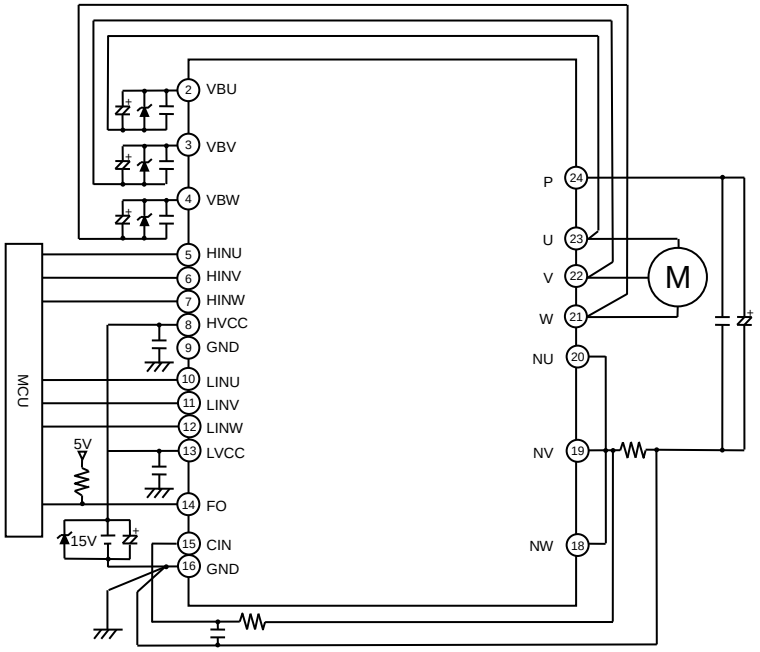


Figure 1. Example of Application Circuit

○Product structure: Semiconductor IC ○This product is not designed for protection against radioactive rays

Pin Configuration

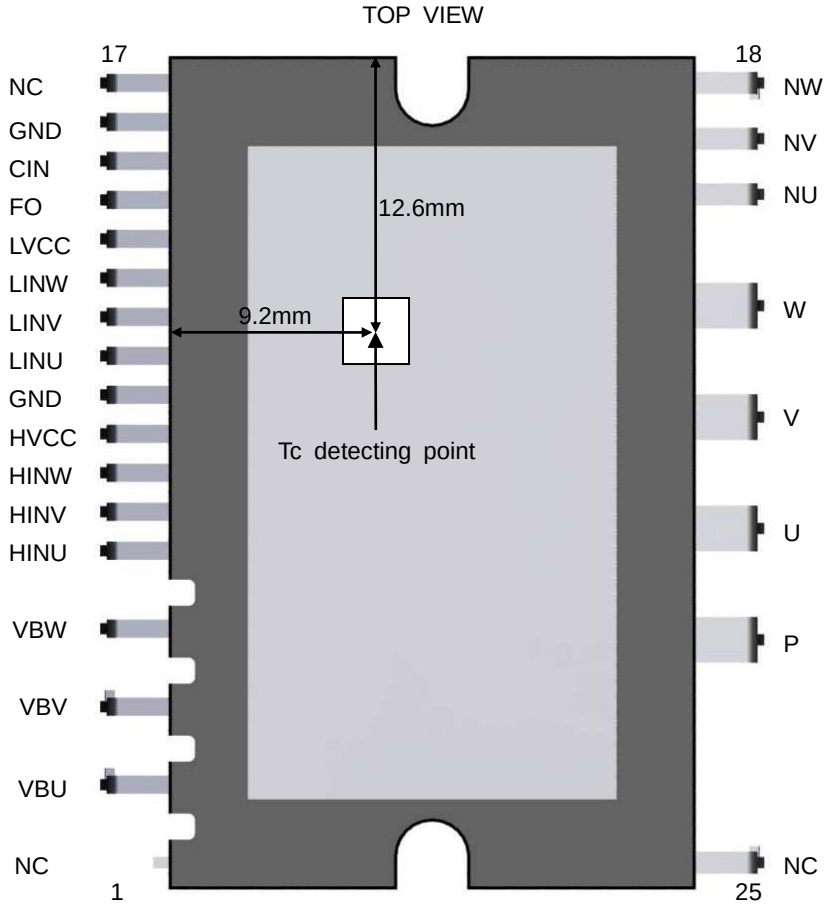


Figure 2. Pin Configuration and Tc Detecting Point

Pin Description

Pin No.	Pin Name	Function	Pin No.	Pin Name	Function
1	NC	No connection(GND potential)	14	FO	Alarm output
2	VBU	U phase floating control supply	15	CIN	Detecting of short circuit current trip voltage
3	VBV	V phase floating control supply	16	GND	Ground (Note 1)
4	VBW	W phase floating control supply	17	NC	No connection (Note 2)
5	HINU	U phase high side IGBT control	18	NW	W phase low side IGBT emitter
6	HINV	V phase high side IGBT control	19	NV	V phase low side IGBT emitter
7	HINW	W phase high side IGBT control	20	NU	U phase low side IGBT emitter
8	HVCC	Control supply for HVIC	21	W	W phase output
9	GND	Ground (Note 1)	22	V	V phase output
10	LINU	U phase low side IGBT control	23	U	U phase output
11	LINV	V phase low side IGBT control	24	P	Inverter supply
12	LINW	W phase low side IGBT control	25	NC	No connection (Note 2)
13	LVCC	Control supply for LVIC			

(Note 1) Two GND pins (9 & 16pin) are connected inside IPM, please connect one pin (16pin is recommended) to the 15V power supply GND outside and leave the other open.

(Note 2) NC pins (17 & 25pin) are not electrically connected to any other potential inside.