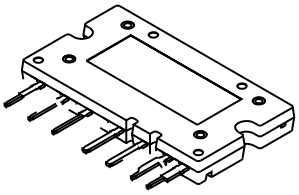


ASPMCA−A16
CASE MODGH

MARKING DIAGRAM

NFVF97565L1ZT1
ZZZ ATYWW
NNNNNNN

NFVF97565L1ZT1	= Specific Device Code
ZZZ	= Lot ID
AT	= Assembly & Test Location
Y	= Year
W	= Work Week
NNN	= Serial Number

ORDERING INFORMATION

See detailed ordering and shipping information on page 6 of this data sheet.

Comparative Tracking Index (CTI) = 600
Pb−Free and RoHS Compliant

Applications

Exciter Motor Application

Integrated Power Functions

650 V − 75 A IGBT Full Bridge Inverter for DC / AC Power Conversion (Please Refer to Figure 2)

Internal Equivalent Circuit and Input/Output Pins

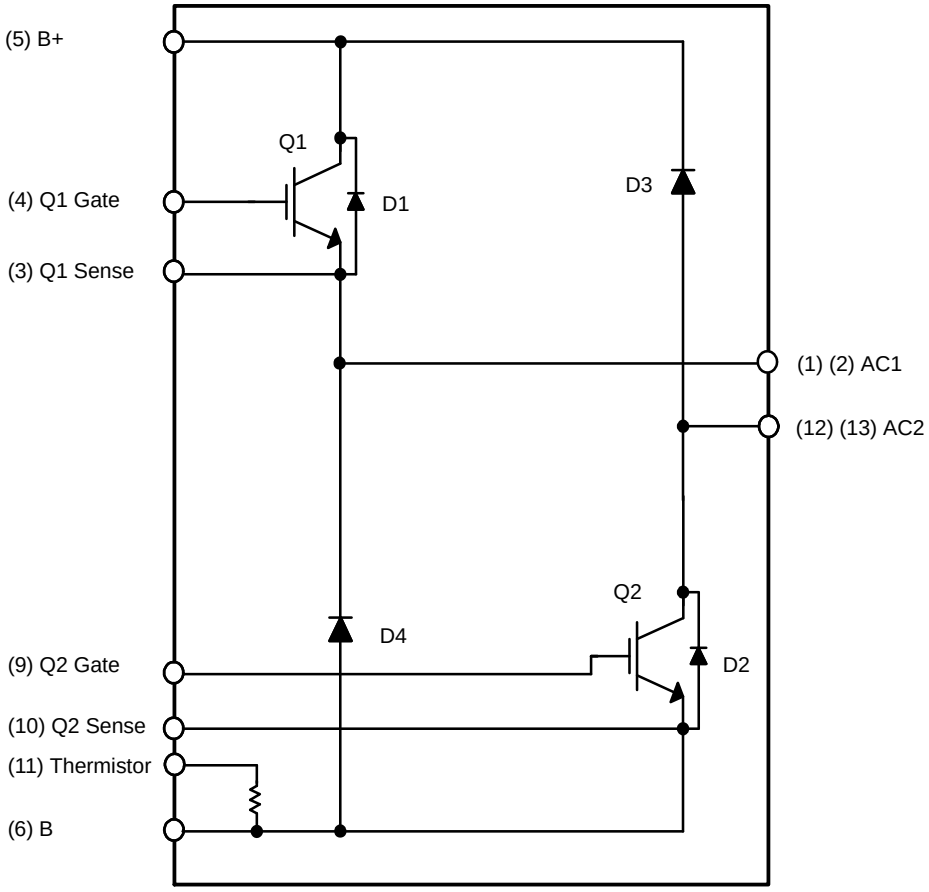


Figure 2. Internal Block Diagram

ABSOLUTE MAXIMUM RATINGS (T_C = 25 C, Unless Otherwise Specified)

Symbol	Parameter	Conditions	Rating	Unit
IGBT AND FRD PART				
V_{CES}	IGBT Collector Emitter Voltage		650	V
I_C	Each IGBT Collector Current	T_C = 25°C, T_J, 175°C (Note 1)	150	A
	Each IGBT Collector Current	T_C = 100°C, T_J, 175°C (Note 1)	75	A
I_{CM}	Each IGBT Pulsed Collector Current	T_J, 175°C, Under 1 ms Pulse Width (Note 2)	225	A
V_{RRM}	FRD Repetitive Reverse Voltage		650	V
I_F (D3, D4)	Each FRD Forward Current	T_C = 25°C, T_J, 175°C (Note 1)	150	A
	Each FRD Forward Current	T_C = 100°C, T_J, 175°C (Note 1)	75	A
I_{FM} (D3, D4)	Each FRD Pulsed Forward Current	T		

ELECTRICAL CHARACTERISTICS

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
IGBT AND FRD PART (T_J = 25°C as specified)						
$\Delta BV_{CES} / \Delta T_J$	Temperature Coefficient of Break down Voltage	V_{GE} = 0 V , I_C = 1 mA		0.6		V/°C
$V_{CE(SAT)}$						

PACKAGE MARKING AND ORDERING INFORMATION

Device Marking	Device

TYPICAL PERFORMANCE CHARACTERISTICS

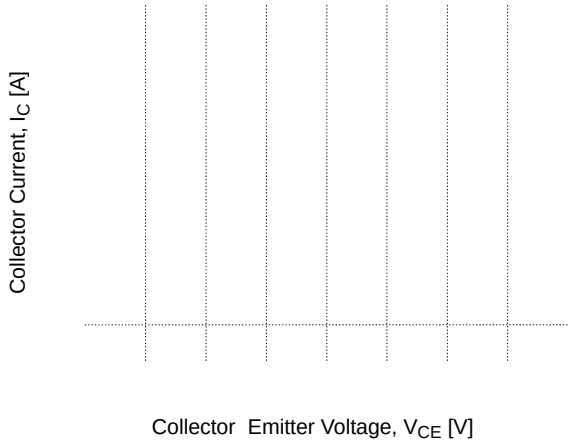


Figure 3. Typical Output Characteristics [Q1 and Q2 IGBT]

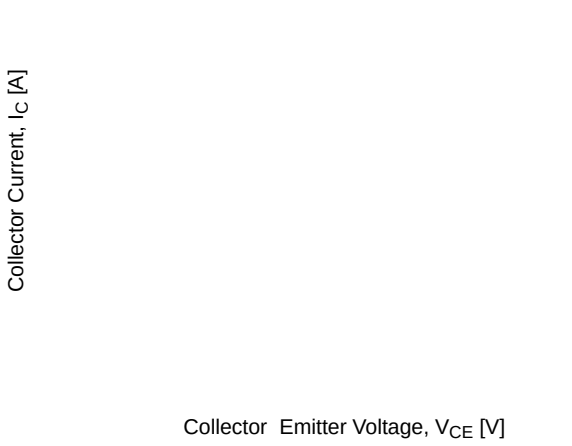


Figure 4. Typical Output Saturation Characteristics [Q1 and Q2 IGBT]

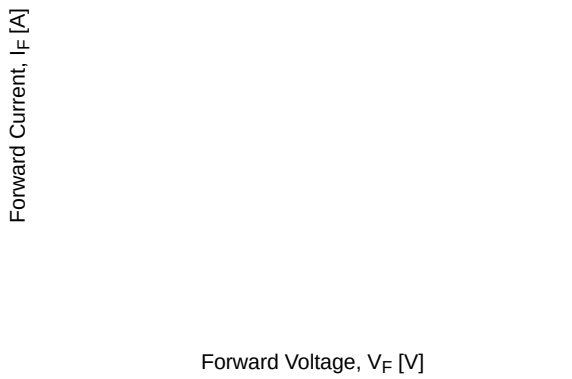


Figure 5. Typical 15 A Diode Forward Voltage

Figure 6. Typical 50 A Diode Forward Voltage

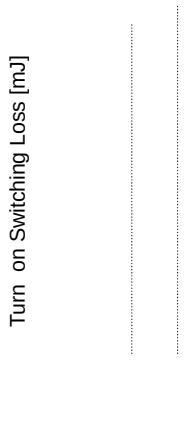


Figure 7. Turn−on Loss vs. Gate Resistance

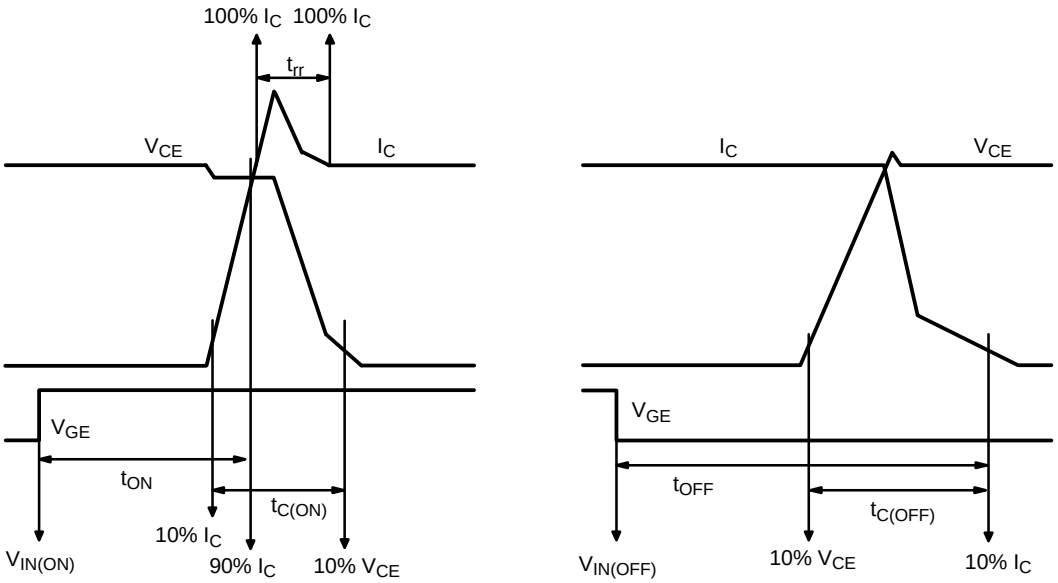
Figure 8. Turn−on Loss vs. Collector Current

Figure 9. Turn−off Loss vs. Gate Resistance

Figure 10. Turn−off Loss vs. Collector Current

Figure 11. FBSOA Characteristics

Figure 12. RBSOA Characteristics



(a) Turn−on **(b) Turn−off**

Figure 13. Switching Time Definition

NTC THERMISTOR

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit100%93.90c(C)142 8 34

MECHANICAL CHARACTERISTICS AND RATINGS

Parameter	Conditions	Limits			Unit
		Min.	Typ.	Max.	
Device Flatness	See Figure 15	0		150	μm
Weight			10		g

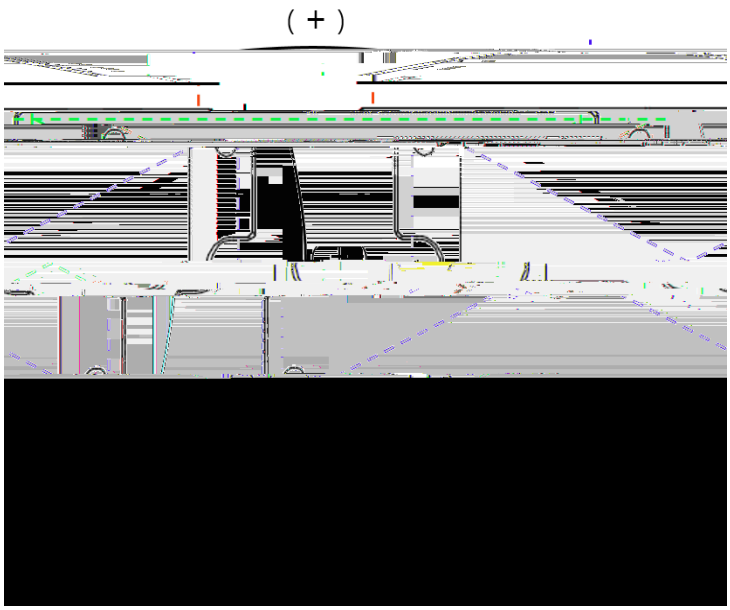


Figure 15. Flatness Measurement Position