

**ASPMCA-A16
CASE MODGH**

MARKING DIAGRAM

NFVF97565L1ZT1 ZZZ ATYWW NNNNNNN
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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)

NFVF97565L1ZT1

NFVF97565L1ZT1

Internal Equivalent Circuit and Input/Output Pins

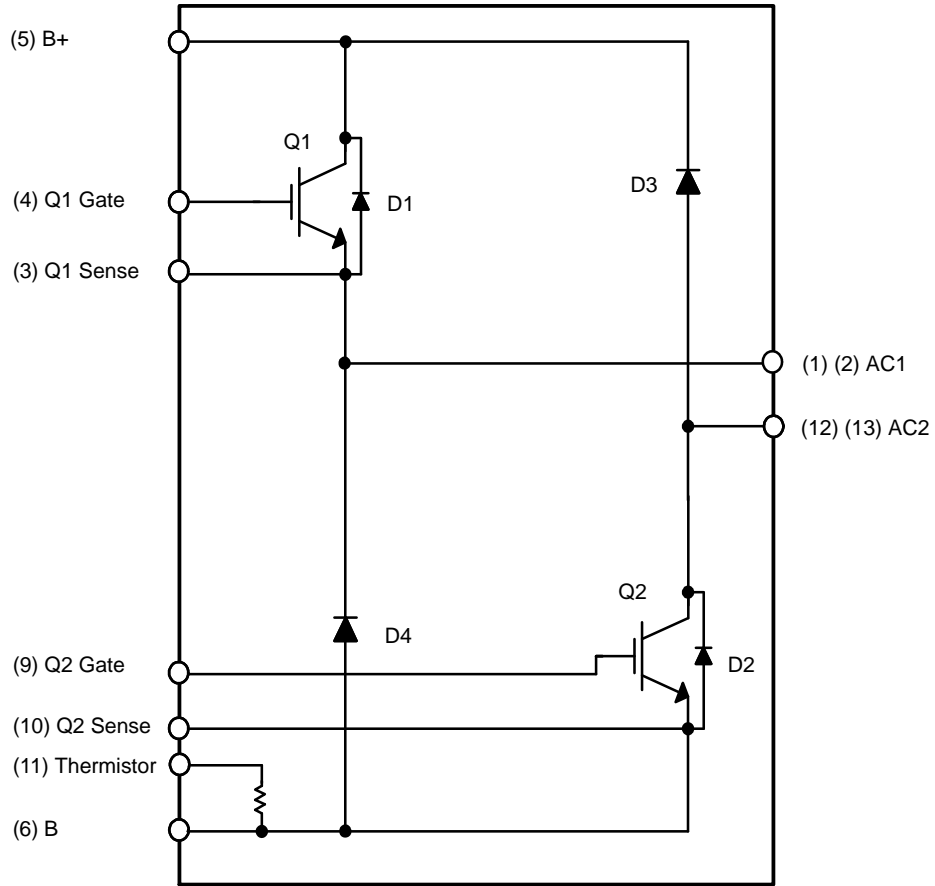


Figure 2. Internal Block Diagram

NFVF97565L1ZT1

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		

NFVF97565L1ZT1

ELECTRICAL CHARACTERISTICS

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
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IGBT AND FRD PART ($T_J = 25^\circ\text{C}$ as specified)

$\Delta V_{CES} / \Delta T_J$	Temperature Coefficient of Break down Voltage	$V_{GE} = 0\text{ V}, I_C = 1\text{ mA}$		0.6		$^\circ\text{C}$
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$V_{CE(SAT)}$

NFVF97565L1ZT1

PACKAGE MARKING AND ORDERING INFORMATION

Device Marking	Device
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NFVF97565L1ZT1

TYPICAL PERFORMANCE CHARACTERISTICS

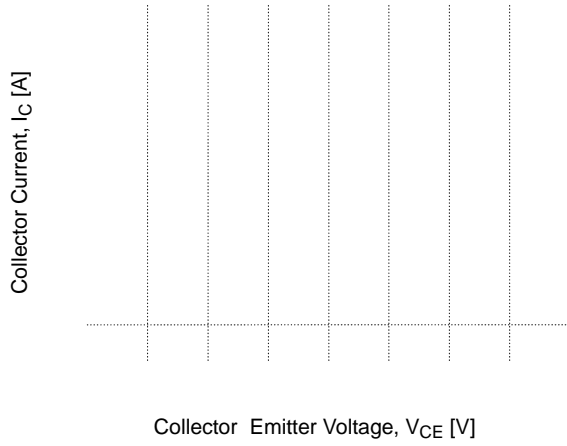


Figure 3. Typical Output Characteristics [Q1 and Q2 IGBT]

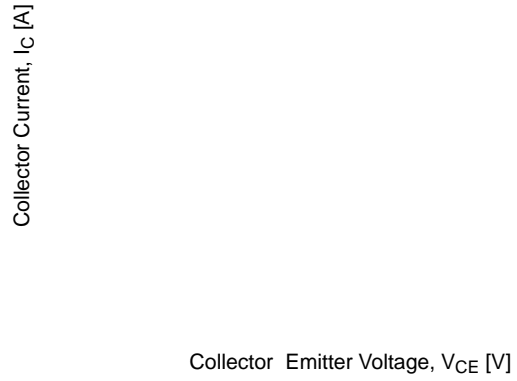


Figure 4. Typical Output Saturation Characteristics [Q1 and Q2 IGBT]

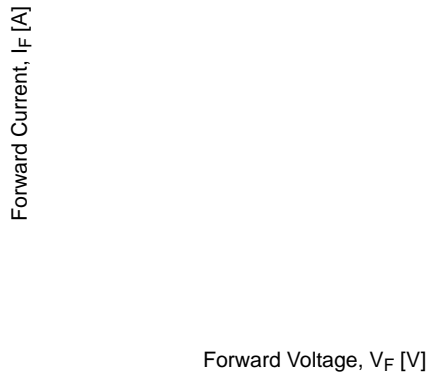


Figure 5. Typical 15 A Diode Forward Voltage

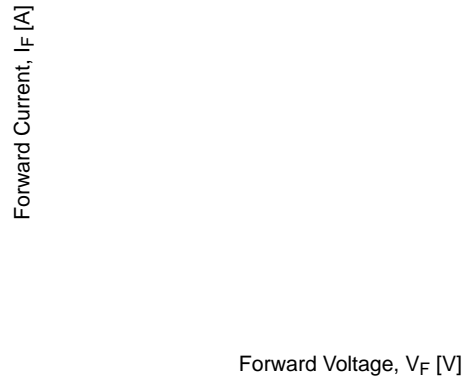


Figure 6. Typical 50 A Diode Forward Voltage

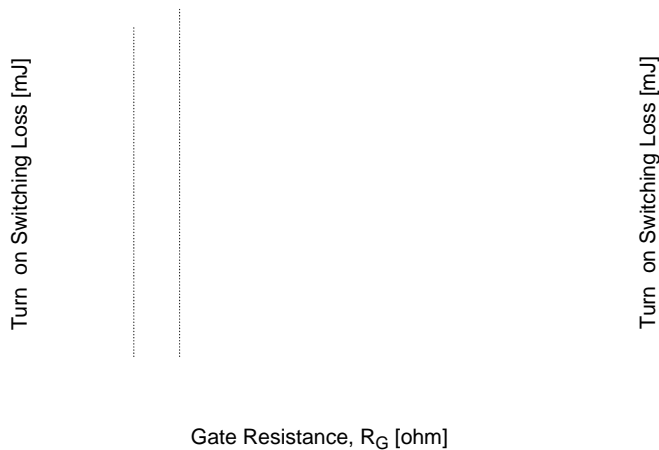


Figure 7. Turn-on Loss vs. Gate Resistance



Figure 8. Turn-on Loss vs. Collector Current



Figure 9. Turn-off Loss vs. Gate Resistance

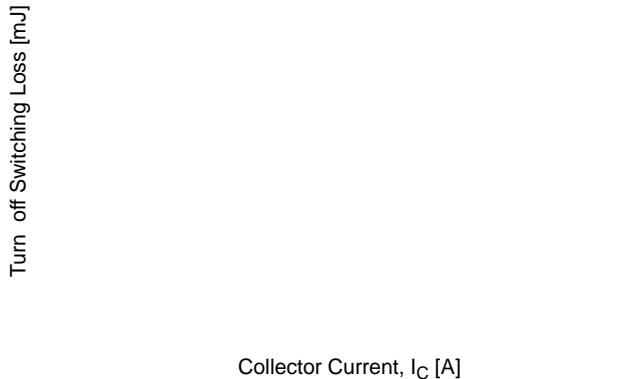


Figure 10. Turn-off Loss vs. Collector Current

I_C [A]

I_C [A]

Collector Emitter Voltage, V_{CE} [V]
 Figure 11. FBSOA Characteristics

Collector Emitter Voltage, V_{CE} [V]
 Figure 12. RBSOA Characteristics

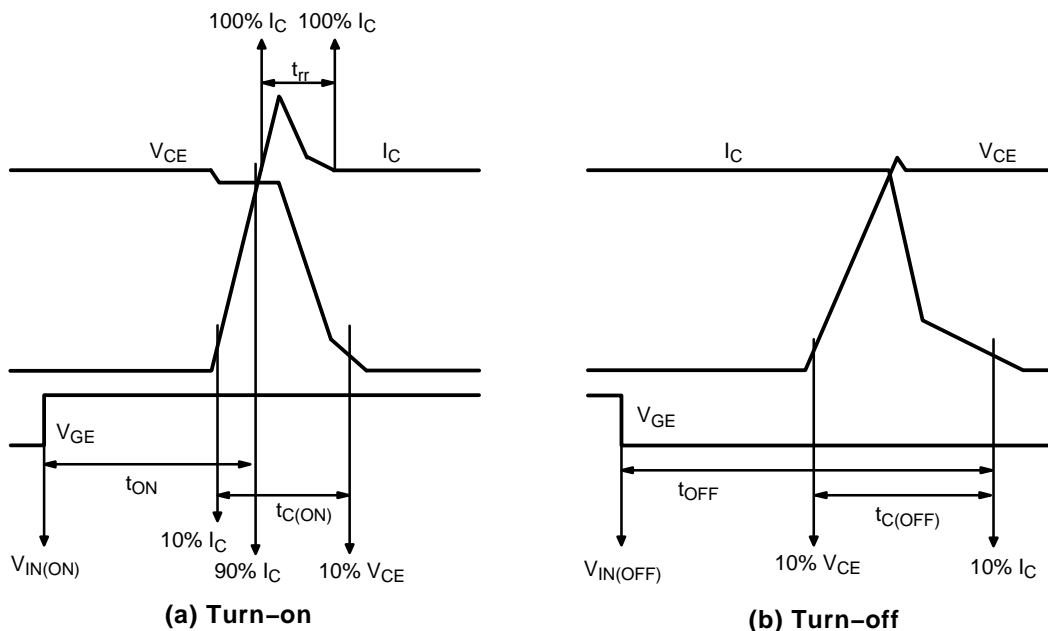


Figure 13. Switching Time Definition

NTC THERMISTOR

Symbol	Parameter	Conditions	Min.	Typ.	Max.
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Unit10093-90c(C)142 8 34

NFVF97565L1ZT1

MECHANICAL CHARACTERISTICS AND RATINGS

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

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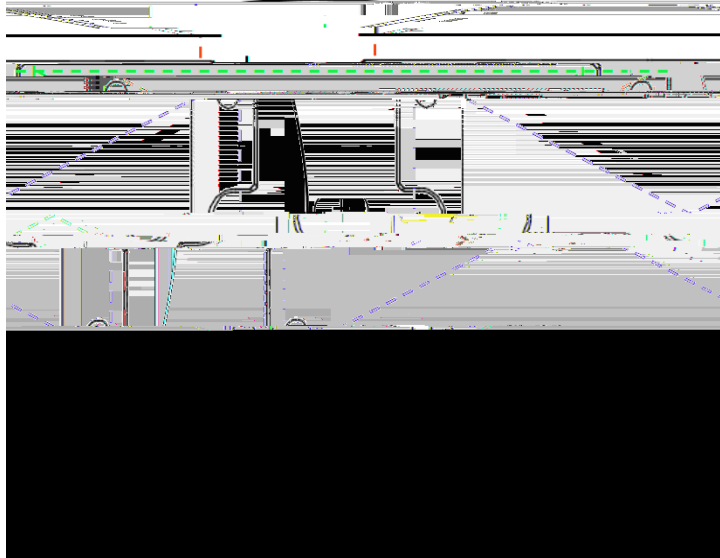


Figure 15. Flatness Measurement Position

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