Automotive 750 V, 800 A Dual Side Cooling Half-Bridge Power Module

VE-Trac™ Dual Gen II NVG800A75L4DSC2

Product Description

The NVG800A75L4DSC2 is part of a family of power modules with dual side cooling and compact footprints for Hybrid (HEV) and Electric Vehicle (EV) traction inverter application.

The module consists of two narrow mesa Field Stop (FS4) IGBTs in a half−bridge configuration. The chipset utilizes the new narrow mesa IGBT technology in providing high current density and robust short circuit protection with higher blocking voltage to deliver outstanding performance in EV traction applications.

Liquid cooling heatsink reference design, loss models and CAD models are available to support customers in inverter designs.

Features

- Dual−Side Cooling
- Integrated Chip Level Temperature and Current Sensor
- $T_{vj\ max}$ = 175°C for Continuous Operation
- Low−stray Inductance
- Low Conduction and Switching Losses
- Automotive Grade
- 4.2 kV Isolated DBC Substrate
- AEC Qualified and PPAP Capable
- This Device is Pb−Free and is RoHS Compliant

Typical Applications

- Hybrid and Electric Vehicle Traction Inverter
- High Power DC−DC Converter

See detailed ordering and shipping information on page 5 of

VE−

CHARACTERISTICS OF IGBT (Tvj = 25°C, Unless Otherwise Specified)

Parameters	Conditions	Min	Typ	Max	Unit
V_{CESAT}					

CHARACTERISTICS OF INVERSE DIODE (T_{VJ} = 25°C, Unless Otherwise Specified)

Parameters		Conditions		Min	Typ	Max	Unit
V_F	Diode Forward Voltage (Terminal)	V_{GE} = 0 V, I_C = 600 A,	Tv_J = 25°C	−	1.39	1.80	V
			Tv_J = 150°C		1.36		
			Tv_J = 175°C		1.34		
		V_{GE} = 0 V, I_C = 800 A,	Tv_J = 25°C		1.49		
			Tv_J = 150°C		1.48		
			Tv_J = 175°C		1.47		

T24 Tm(V)Tj1 0 TD(C)Tj4.663 1.4 = 1 7 5

VE−Trac™ Dual Gen II NVG800A75L4DSC2

TYPICAL CHARACTERISTICS

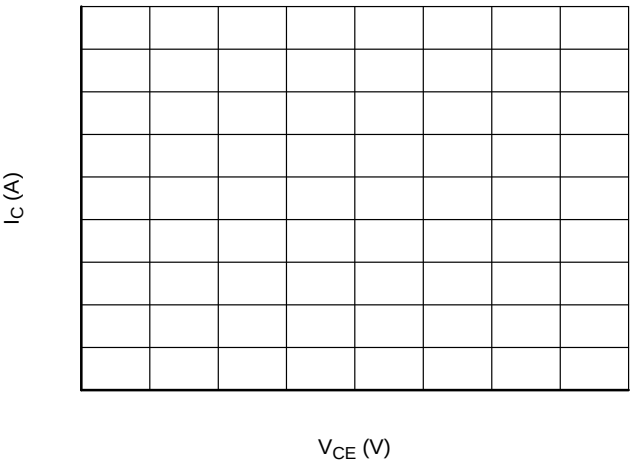


Figure 13. Reverse Bias Safe Operating Area

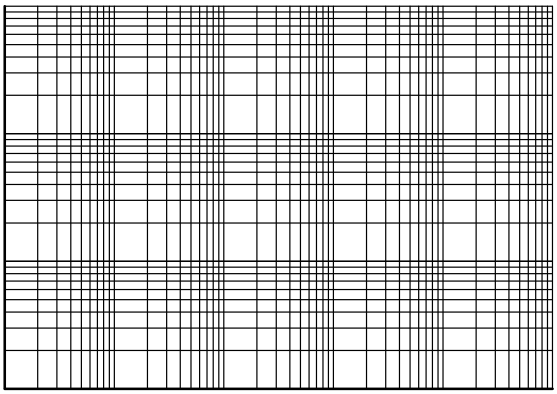


Figure 14. IGBT Transient Thermal Impedance

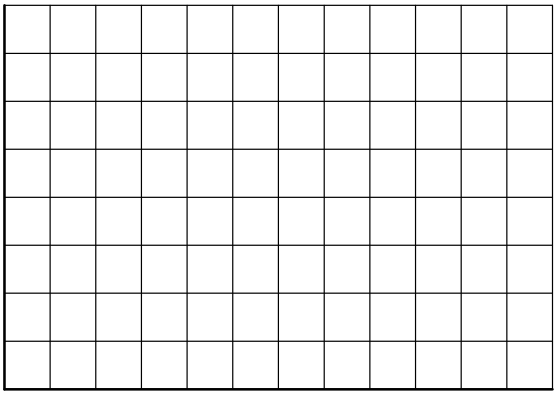


Figure 15. Diode Forward Characteristic

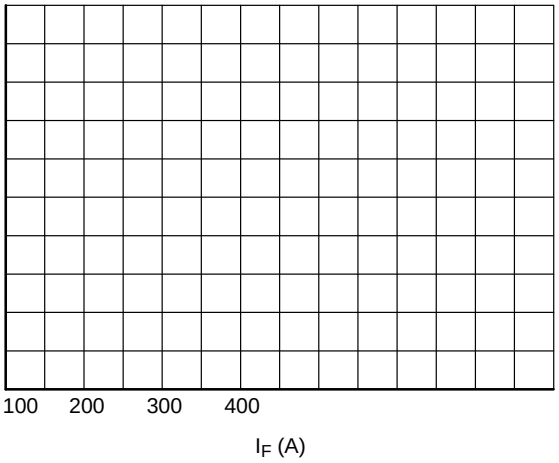


Figure 16. Diode Switching Losses vs. I_F

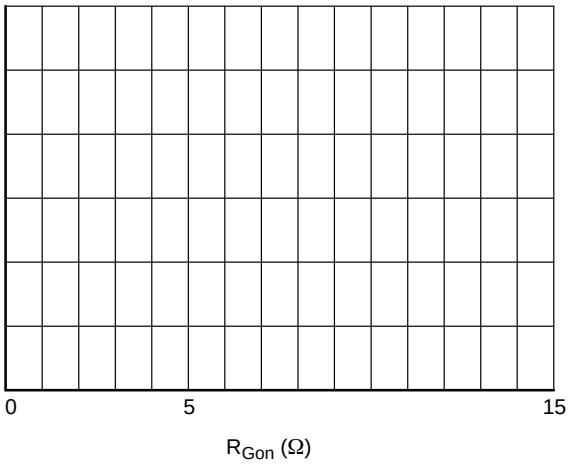


Figure 17. Diode Switching Losses vs. R_{Gon}

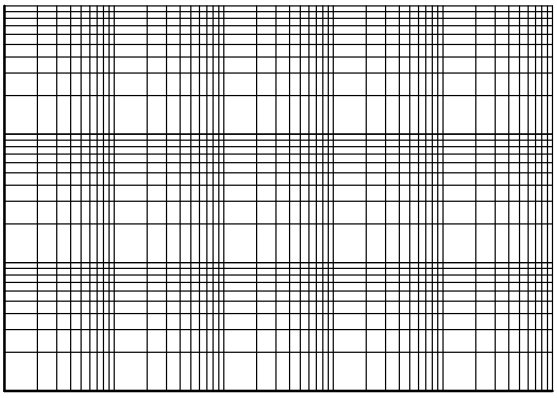


Figure 18. Diode Transient Thermal Impedance

TYPICAL CHARACTERISTICS

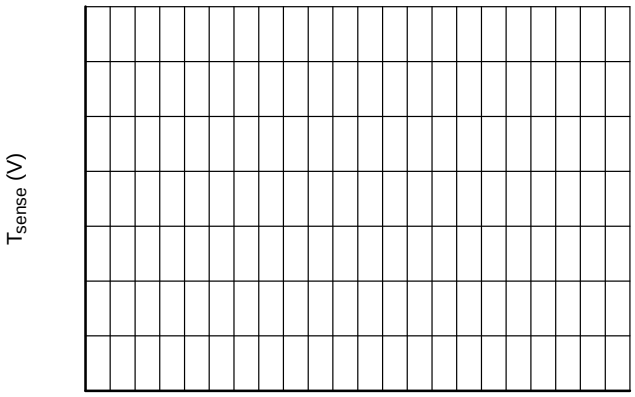


Figure 19. Temperature Sensor Characteristics

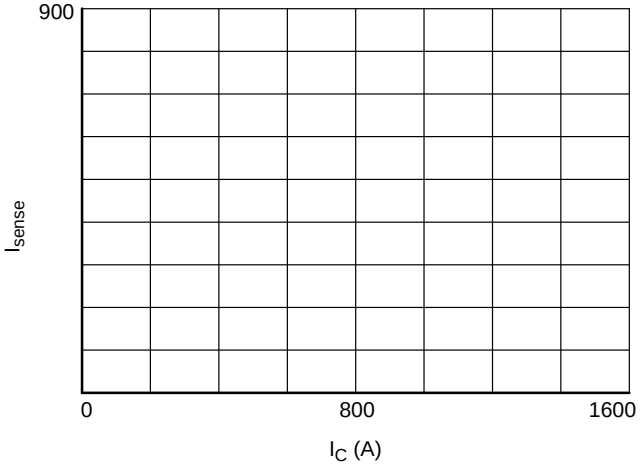
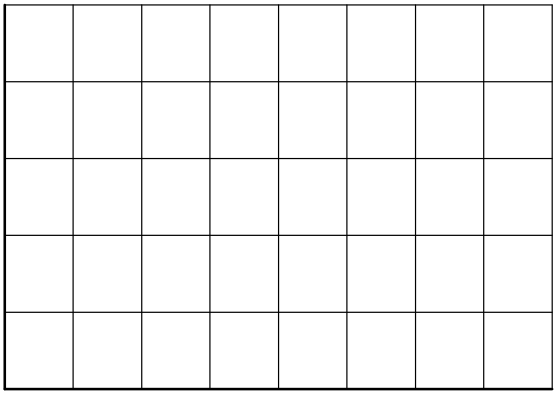
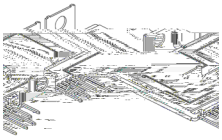


Figure 20. Current Sensor Characteristic

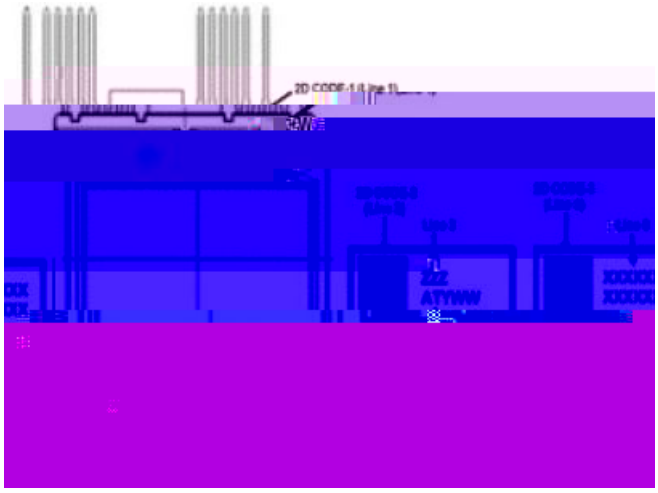


AHPM15 55x55



4. DIMENSIONS b,b1,b2 .

GENERIC
MARKING DIAGRAM*



DOCUMENT NUMBER:	98AON32090H		
DESCRIPTION:	AHPM15 55x55		PAGE 2 OF 2