

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

VE-Trac™ Dual NVG800A75L4DSC

Product Description

The NVG800A75L4DSC 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 Field Stop 4 (FS4) 750V Narrow Mesa 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.

A dual side liquid cooling heatsink reference design along with a complete inverter kit (NVG800A75L4DSC-EVK) is available to enable easier design in.

Features

- Dual-Side Cooling
- Integrated Chip Level Temperature and Current Sensor
- $T_{vj\ max} = 175^{\circ}C$ for Continuous Operation
- Ultra-low stray inductance
- Low V_{CESAT} and Switching Losses
- Automotive Grade FS4 & Fast Diode Chip Technologies
- 4.2 kV Isolated DBC Substrate
- AEC Qualified and PPAP Capable
- This Device is Pb-Free and is RoHS Compliant

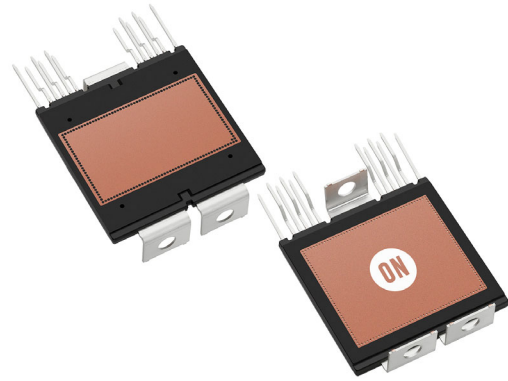
Typical Applications

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

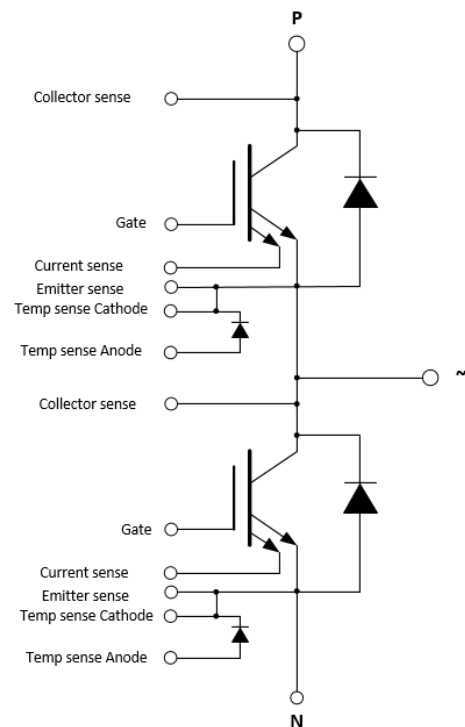


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AHPM15-CEA
CASE 100DD



ORDERING INFORMATION

See detailed ordering and shipping information on page 5 of this data sheet.

VE-Trac™ Dual NVG800A75L4DSC

PIN DESCRIPTION

Pin #	Pin	Pin Function Description	Pin Arrangement
1	N	Low Side Emitter	
2	P	High Side Collector	
3	H/S COLLECTOR SENSE	High Side Collector Sense	
4	H/S CURRENT SENSE	High Side Current Sense	
5	H/S EMITTER SENSE	High Side Emitter Sense	
6	H/S GATE	High Side Gate	
7	H/S TEMP SENSE (CATHODE)	High Side Temp sense Diode Cathode	
8	H/S TEMP SENSE (ANODE)	High Side Temp sense Diode Anode	
9	~	Phase Output	
10	L/S CURRENT SENSE	Low Side Current Sense	
11	L/S EMITTER SENSE	Low Side Emitter Sense	
12	L/S GATE	Low Side Gate	
13	L/S TEMP SENSE (CATHODE)	Low Side Temp sense Diode Cathode	
14	L/S TEMP SENSE (ANODE)	Low Side Temp sense Diode Anode	
15	L/S COLLECTOR SENSE	Low Side Collector Sense	

Materials

DBC Substrate: Al₂O₃ isolated substrate, basic isolation, and copper on both sides

Lead Frame: Copper with Tin electro-plating

Flammability Information

All materials present in the power module meet UL flammability rating class 94V-0

MODULE CHARACTERISTICS

Symbol	Parameter	Rating	Unit		
T _{vj}	Continuous Operating Junction Temperature range	-40 to 175	°C		
T _{STG}	Storage Temperature range	-40 to 125	°C		
V _{ISO}	Isolation Voltage, DC, t = 1 s	4200	V		
Creepage	Terminal to Terminal	6.2	mm		
Clearance	Terminal to Terminal	3.4	mm		
CTI	Comparative tracking index	>600	-		
		Min	Typ	Max	
L _{sCE}	Stray Inductance			8	nH
R _{CC'+EE'}	Module lead resistance, terminals – chip			0.15	mΩ
G	Module weight			75	g
M	M4 screws for module terminals			2.2	Nm