Automotive Power MOSFET Module

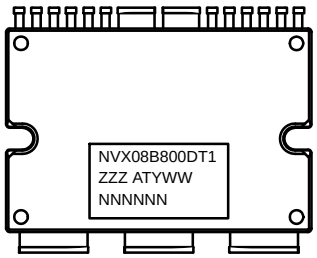
NXV08B800DT1

APM17−MDC
CASE MODHH

eatures

- Back to Back Mosfet Load Switch Module
- Temp Sensing
- Electrically Isolated DBC Substrate for Low Rthjc
- Compact Design for Low Total Module Resistance
- Module Serialization for Full Traceability
- AQG324 Qualified
- UL 94 V 0
- ESD Tested for HBM and CDM per AEC Q101, JS 001, JS 002
- Low Thermal Resistance to Junction to Heat Sink by Direct
- Mounting via Thermal Interface Material between Module Case and Heat Sink
- Low Inductance

MARKING DIAGRAM



NXV08B800DT1	= 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 8 of this data sheet.

Pin Configuration

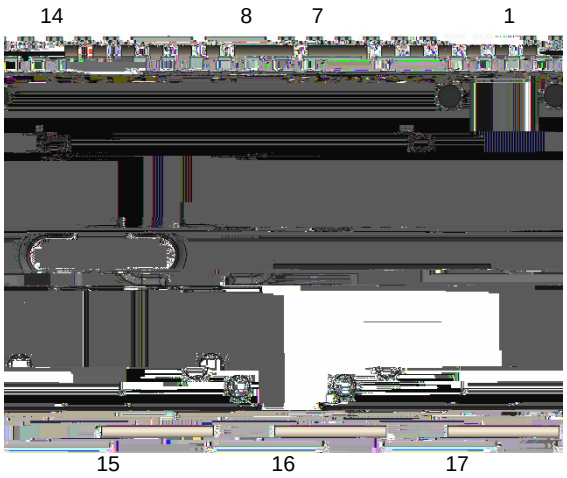


Figure 1. Pin Configuration

PIN DESCRIPTION

Pin No.	Description	Remark
1	Q2 Gate	
2	Q2 Source Sense	
3	B In #2 Sense	
4	Q4 Gate	
5	Q4 Source Sense	
6	NTC1	
7	B In #2	Use as common or separately per the applications
8	B In #1	
9	NTC2	
10	Q3 Source Sense	
11	Q3 Gate	
12	B In #1 Sense	
13	Q1 Source Sense	
14	Q1 Gate	
15	Common Source 1	For electrical test purpose for module
16	B Out	
17	Common Source 2	For electrical test purpose for module

NXV08B800DT1

ELECTRICAL CHARACTERISTICS (T_J = 25°C unless otherwise noted)

Symbol	Parameter	Test Condition	Min	Typ	Max	Unit
BVDSS	Drain−to−Source Breakdown Voltage	I_D = 1 mA, V_{GS} = 0 V	80	−	−	
VGS(th)	Gate to Source Threshold Voltage	V_{GS} = V_{DS}, I_D = 1 mA	2	−	4.6	V
VSD	Source−to−Drain Diode Voltage	I_{SD} = 160 A, V_{GS} = 0 V	−	0.79	1.1	V
Measured RDS(ON) Q1, Q2	Single Q1, Q2 MOSFET (Note 2)	V_{GS} = 12 V, I_D = 160 A, T_J = 25°C	−	0.71	0.81	mΩ
Measured RDS(ON) Q3, Q4	Single Q3, Q4 MOSFET (Note 2)	V_{GS} = 12 V, I_D = 160 A, T_J = 25°C	−	0.50	0.595	mΩ
Pure FET RDS(ON) Q1, Q2, Q3, Q4	Rdson Measurement with Kelvin Pin with Min Impact of Measurement Path (Note 2)	V_{GS} = 12 V, I_D = 160 A, T_J = 25°C	−	0.46	−	mΩ
IGSS	Gate−to−Source Leakage Current	V_{GS} = ±20 V, V_{DS} = 0 V, T_J = 25°C	−100	−	+100	nA
IDSS	Drain−to−Source Leakage Current	V_{DS} = 80 V, V_{GS} = 0 V, T_J = 25°C	−	−	2	μA

Product parametric performance is indicated in the Electrical Characteristics for the listed test conditions, unless otherwise noted. Product performance may not be indicated by the Electrical Characteristics if operated under different conditions.

2. All bare die MOSFETs have same die size and same level of Rdson value. However the different Rdson values listed in the datasheet are due to the different access points available inside the module for Rdson measurement. In this reason, the actual FET RDS(ON) is not able to be measured. For the Pure FET Rdson for power loss calculation, the Rdson measurement with Kelvin pin from NXV08H400XT1 can be used. Each Rdson measurement paths are as below table, “Resistance Measurement Methods”

RESISTANCE MEASUREMENTS METHODS

DYNAMIC AND SWITCHING CHARACTERISTICS (T_J = 25°C unless otherwise noted)

Symbol

TYPICAL CHARACTERISTICS (continued)

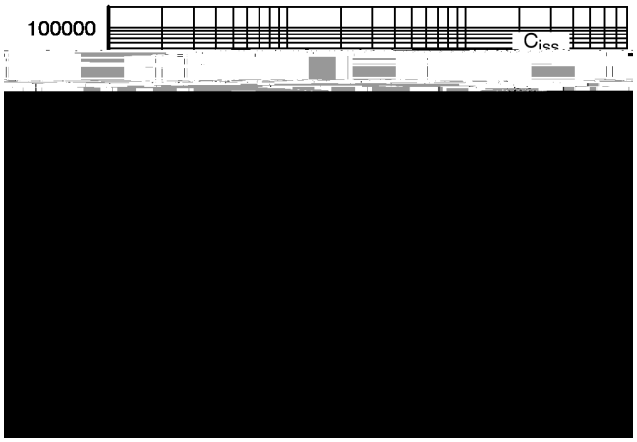


Figure 9. Capacitance vs. Drain to Source Voltage

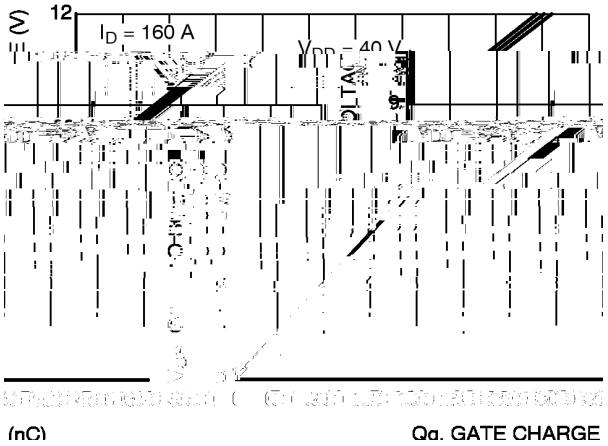


Figure 10. Gate Charge vs. Drain to Source Voltage

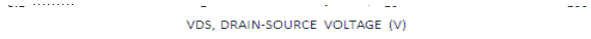


Figure 11. Safe Operating Area

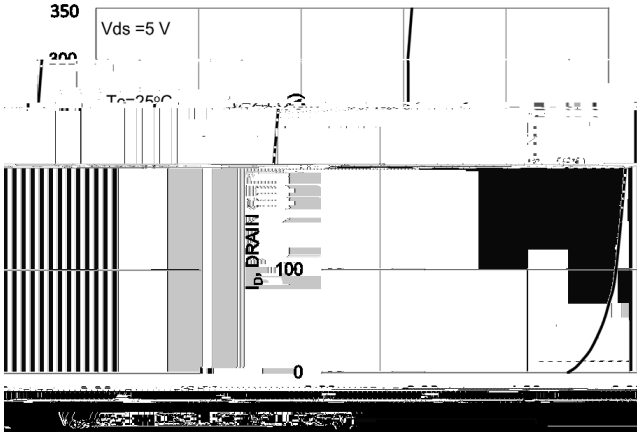


Figure 12. Transfer Characteristics

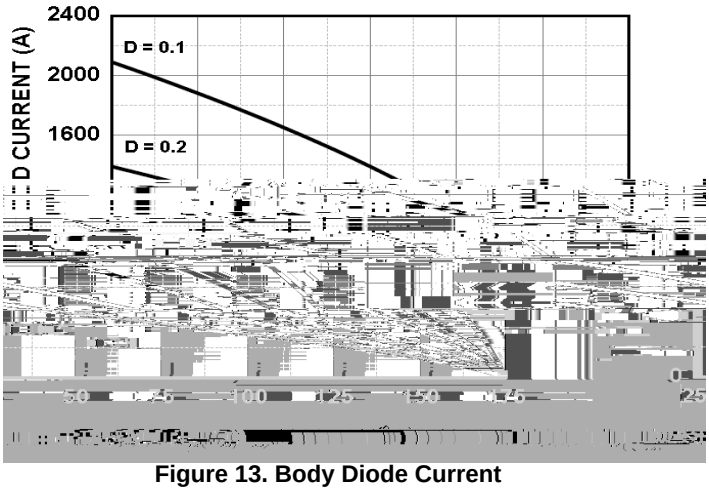


Figure 13. Body Diode Current

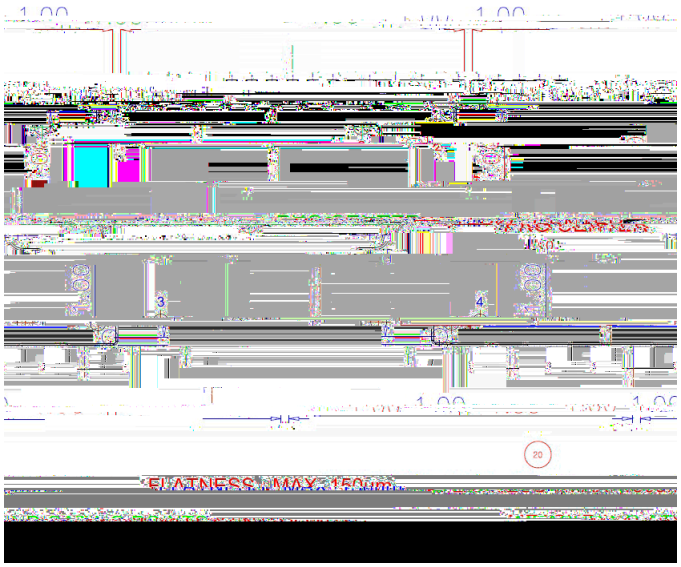


Figure 14. Flatness Measurement Position

MECHANICAL CHARACTERISTICS AND RATINGS

Parameter	Test Conditions	Min	Typ	Max	Units
Device Flatness	Refer to the package dimensions	0	–	150	μm
Mounting Torque	Mounting screw: M3, recommended 0.7 N·m	0.4	–	1.4 (Note 4)	N·m
Weight		–	23.7	–	g

4. Max Torque rating can be different by the type of screw, such as the screw head diameter, use or without use of Washer. In case of special screw mounting method is applied, contact to **onsemi**

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3. DIMENSIONS ARE EXCLUSIVE OF BURRS, MOLD FLASH AND TIE BAR EXTR