Automotive Power MOSFET Module

NXV08H350XT1

Features

- 2 Phase MOSFET Module
  At Customer Side this Module Can Be Used as 1/2 Bridge MOSFET Module by Combining 2 Phase Out Power Terminals
- Electrically Isolated DBC Substrate for Low Rthjc
- Compact Design for Low Total Module Resistance
- Module Serialization for Full Traceability
-

ORDERING INFORMATION

Part Number	Package	Pb−Free and RoHS Compliant	Operating Ambient Temperature Range	Packing Method
NXV08H350XT1	APM17−MDC	yes	−40~125°C	Tube

Pin Configuration

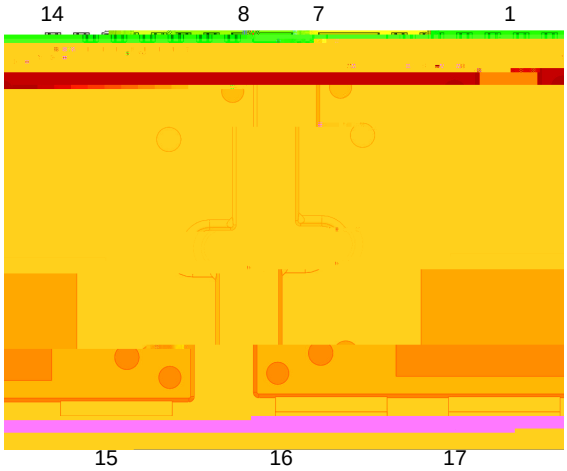

Figure 1. Pin Configuration

Block Diagram

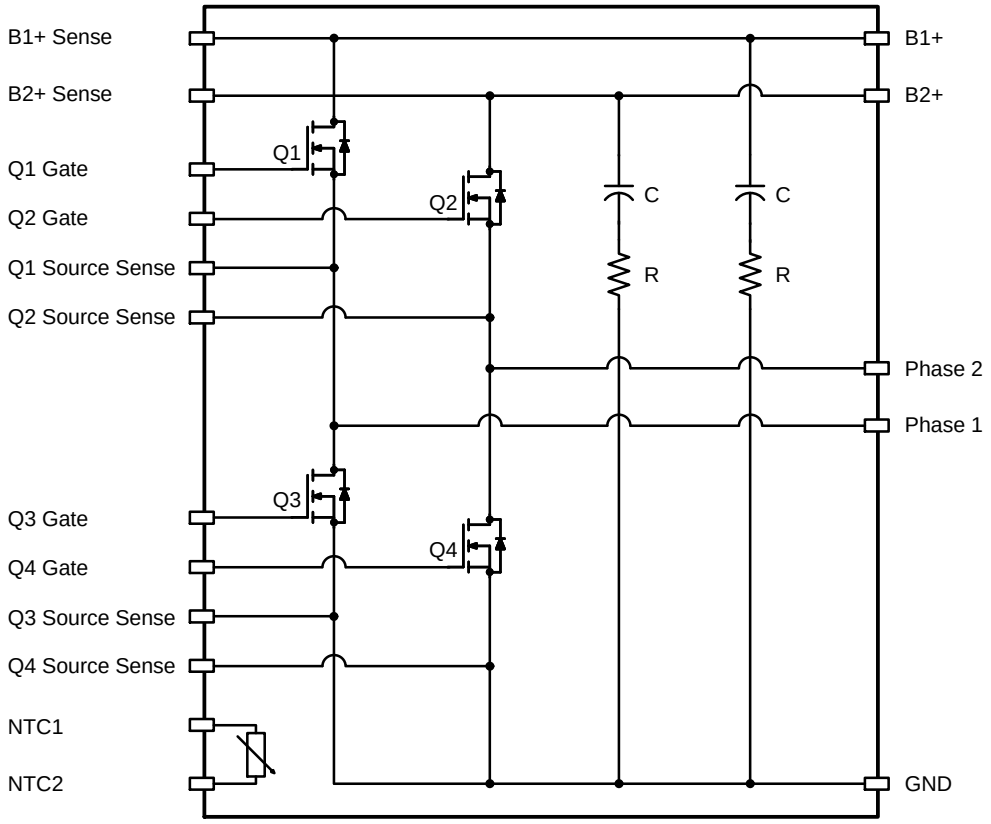

Figure 2. Schematic

Flammability Information

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

Compliance to RoHS Directives

The power module is 100% lead free and RoHS compliant 2000/53/C directive.

Solder

Solder used is a lead free SnAgCu alloy.

Base of the leads, at the interface with the package body should not be exposed to more than 200°C during mounting on the PCB, this to prevent the remelt of the solder joints.

ABSOLUTE MAXIMUM RATINGS (T_J = 25°C unless otherwise specified)

Symbol	Parameter	Max.	Unit
VDS(Q1~Q4)	Drain−to−Source Voltage	80	V
VGS(Q1~Q4)	Gate−to−Source Voltage	±20	V
EAS(Q1~Q4)	Single Pulse Avalanche Energy (Note 1)	1946	mJ
T_J	Maximum Junction Temperature	175	°C
T_{STG}	Storage Temperature	125	°C

Stresses exceeding those listed in the Maximum Ratings table may damage the device. If any of these limits are exceeded, device functionality should not be assumed, damage may occur and reliability may be affected.

1. Starting T_J = 25°C, L = 0.47 mH, I_{AS} = 91 A, V_{DD} = 72 V during inductor charging and V_{DD} = 0 V during time in avalanche.

ISOLATION VOLTAGE (Isolation voltage between the Base plate and to control pins or power terminals.)

Test	Test Condition	Test Time	Min	Max	Unit
Leakage @ Isolation Voltage (Hi−Pot)	VAC = 3 kV	Time = 1 s			

TYPICAL CHARACTERISTICS

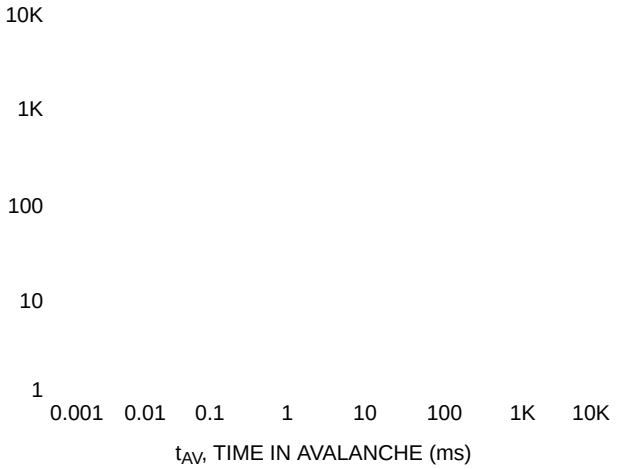

Figure 3. Unclamped Inductive Switching Capability

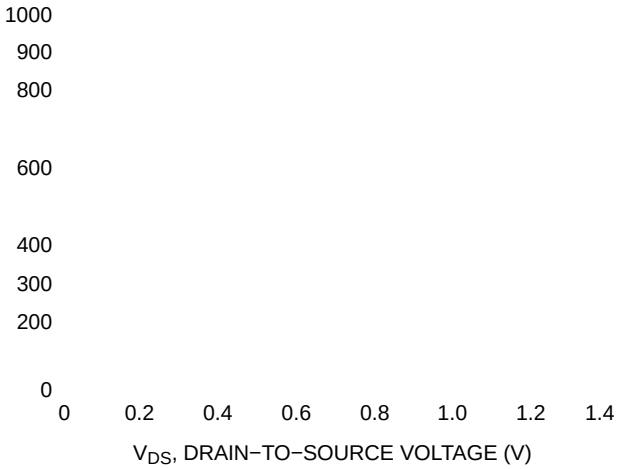

Figure 4. Saturation Characteristics

V_{GS}, GATE−TO−SOURCE VOLTAGE (V)

Figure 5. R_{DSON} vs. Gate Voltage

T_J, JUNCTION TEMPERATURE (°C)

Figure 6. R_{DSON} vs. Temperature

TYPICAL CHARACTERISTICS

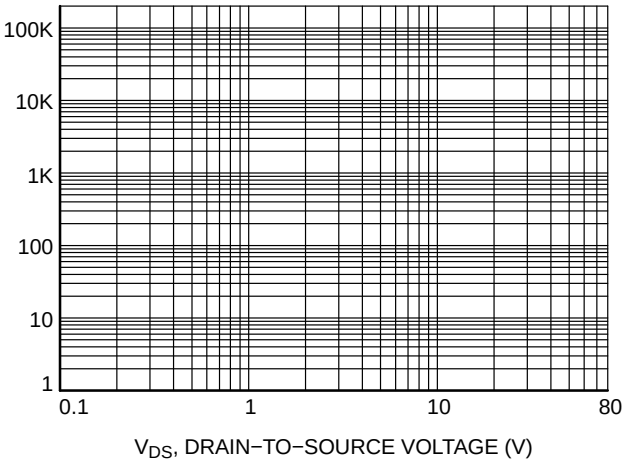

Figure 9. Capacitance vs. Drain−to−Source Voltage

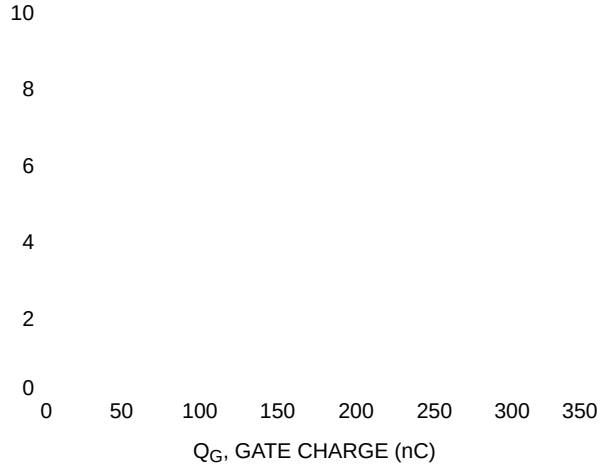

Figure 10. Gate Charge vs. Drain−to−Source Voltage

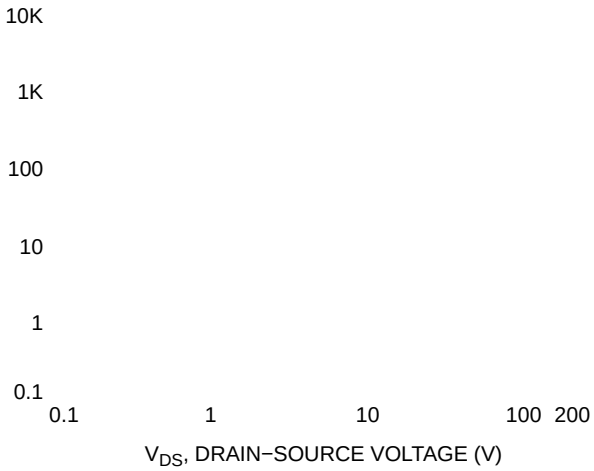

Figure 11. Safe Operating Area

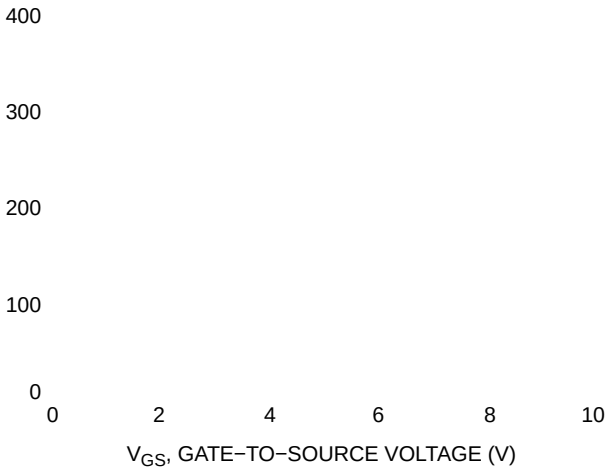

Figure 12. Transfer Characteristics

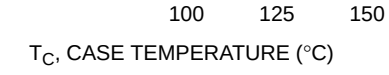

Figure 13. Body Diode Current

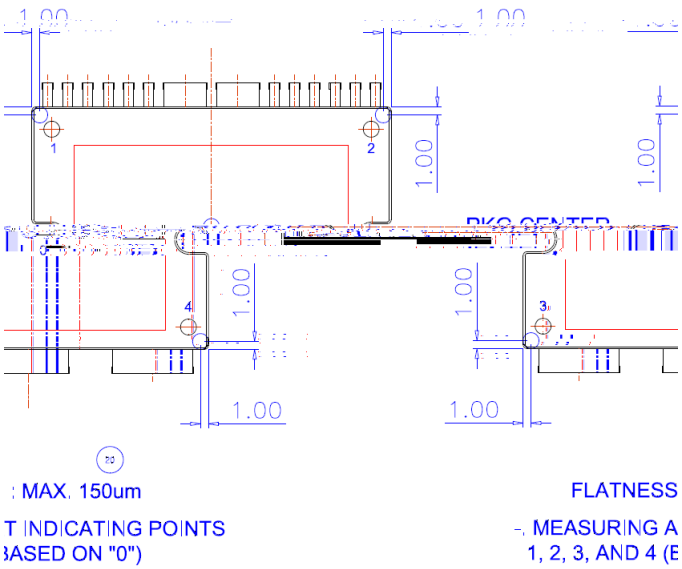

Figure 14. Flatness Measurement Position

MECHANICAL CHARACTERISTICS AND RATINGS

Parameter	Test Conditions	Min	Typ	Max	Units
Device Flatness	Refer to the package dimensions	0	–	150	um
Mounting Torque	Mounting screw: M3, recommended 0.7 N•m	0.4	–	1.4 (Note 5)	N•m
Weight		–	23.6	–	g

5. 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 **onsemi** for the proper information of mounting condition.

APM17−MDC
CASE MODHH
ISSUE C

DATE 08 DEC 2021

09.

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

1