A i e P e MOSFET M d le

NXV08H400XT2

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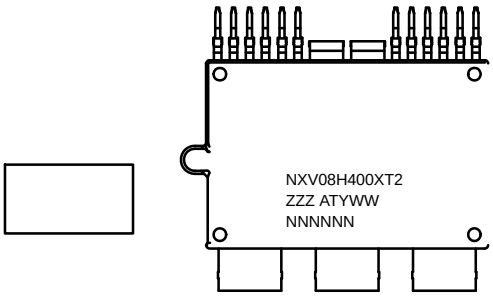
- 2 Phase MOSFET Module
  At Customer Side this Module Can Be Used as 1/2 Bridge MOSFET Module by Combining 2 Phase Out Power Terminals
- Electrically Isolated DBC Substrate for Low Rthjc
- Compact Design for Low Total Module Resistance
- Module Serialization for Full Traceability
- Module Level AQG324 Qualified. Components Inside are AEC Q101 (MOSFET) & AEC Q200 (Passives) Qualified
- UL 94 V−0 Compliant
- This Device is Pb−Free and is RoHS Compliant

- 48 V Inverter, 48 V Traction

- Enable Design of Small, Efficient and Reliable System for Reduced Vehicle Fuel Consumption and CO_2 Emission
- Simplified Vehicle Assembly
- Low Thermal Resistance to Junction to Heat Sink by Direct Mounting via Thermal Interface Material between Module Case and Heat Sink
- Low Inductance



NXV08H400XT2	= Specific Device Code
ZZZ	= Lot ID
AT	= Assembly & Test Location
Y	= Year
WW	= Work Week
NNN	= Serial Number

See detailed ordering and shipping information on page 2 of this data sheet.

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Publication Order Number:

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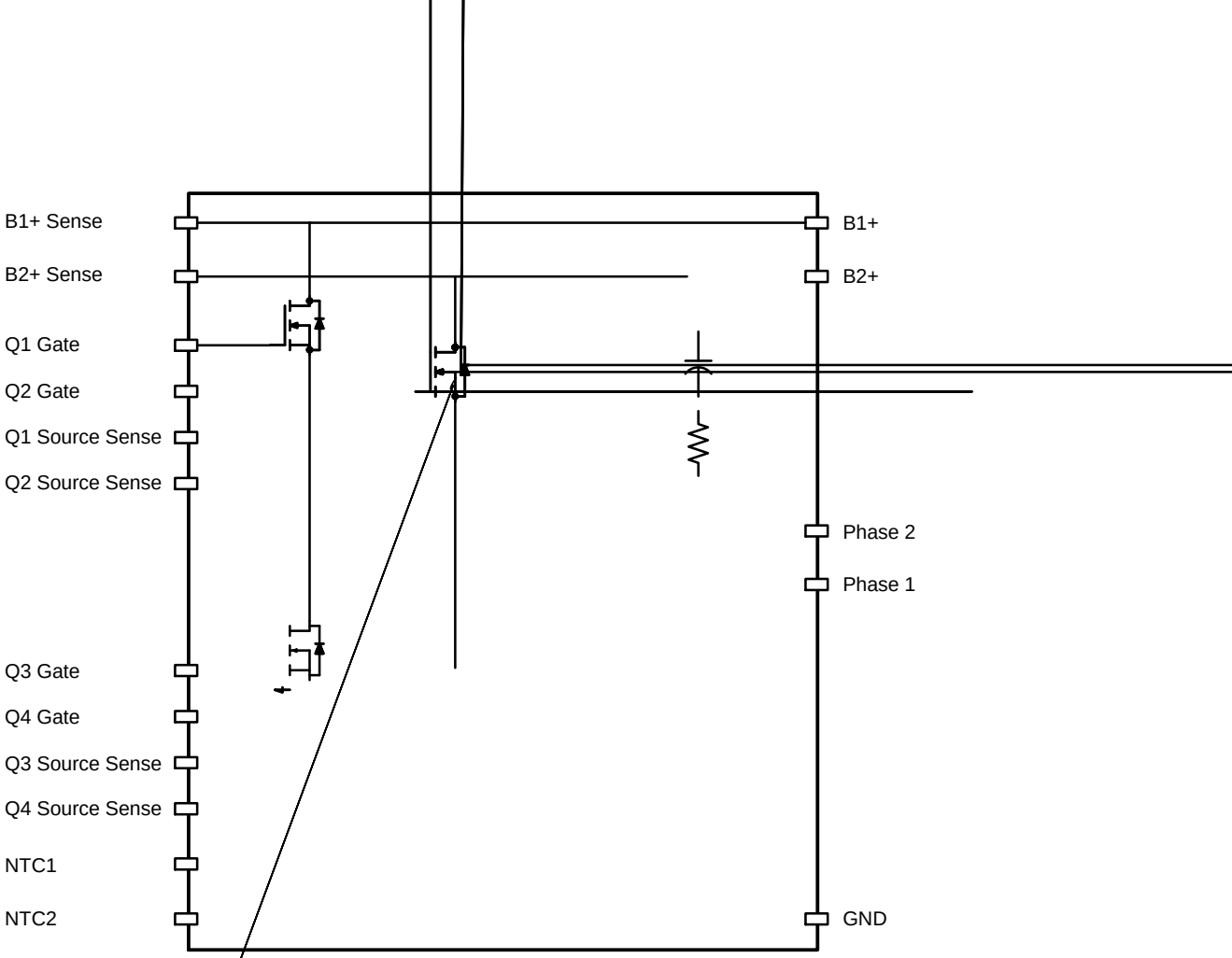
NXV08H400XT2	APM17 MDA	yes	40~125°C	Tube


B1+ Sense
B2+ Sense
Q1 Gate
Q2 Gate
Q1 Source Sense
Q2 Source Sense
Q3 Gate
Q4 Gate
Q3 Source Sense
Q4 Source Sense
NTC1
NTC2
B1+
B2+
Phase 2
Phase 1
GND

(T_J = 25°C, unless otherwise noted)

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	Q1, Q2 (High Side) MOSFET (Note 2) (Note 3)	V_{GS} = 12 V, I_D = 160 A, T_J = 25°C		0.65	0.765	mΩ
Measured RDS(ON) Q3, Q4	Q3, Q4 (Low Side) MOSFET (Note 2) (Note 3)	V_{GS} = 12 V, I_D = 160 A, T_J = 25°C		0.60	0.71	mΩ
Pure 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	0.58	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
Module RDS(ON) for Q1 and Q2: From B+1 (or B+2), via Q1 (or Q2), to Phase Out 1 (Phase Out 2) (Note 3)		V_{GS} = 12 V, I_D = 160 A, T_J = 25°C		0.96	1.32	mΩ
Module RDS(ON) for Q3 and Q4: From Phase Out 1 (Phase Out 2), via Q3 (Q4), to GND PINs (Note 3)		V_{GS} = 12 V, I_D = 160 A, T_J = 25°C		0.9	1.25	mΩ

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. Q3 and Q4 (Low side FETs) has the shortest Rdson measurement path in the layout. For exact FET rdson, it is recommended to use the Rdson value of Q3 or Q4 for the Kelvin pin with min impact of measurement path. Here Pure Rdson values of Q1,Q2,Q3,Q4 are from Q3 and Q4 measurement from NXV08H400XT1 datasheet. This value to be used for the actual MOSFET Rdson for Power loss and Temperature simulations.
3. Module Rdson means total resistance of the measurement path btw Power terminals, referring to the resistance measurement methods table.

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

Leakage @ Isolation Voltage (Hi Pot)	VAC = 3 kV	Time = 1 s		250	μA

(T_J = 25°C unless otherwise noted)

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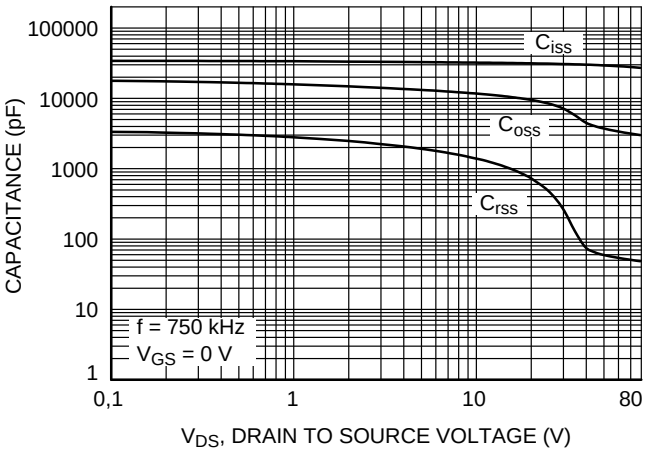
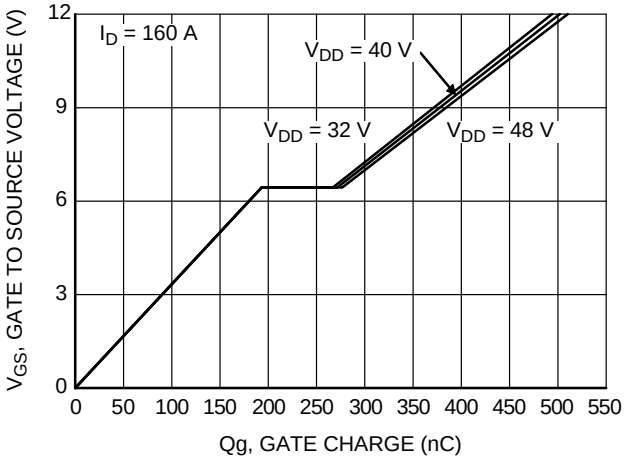
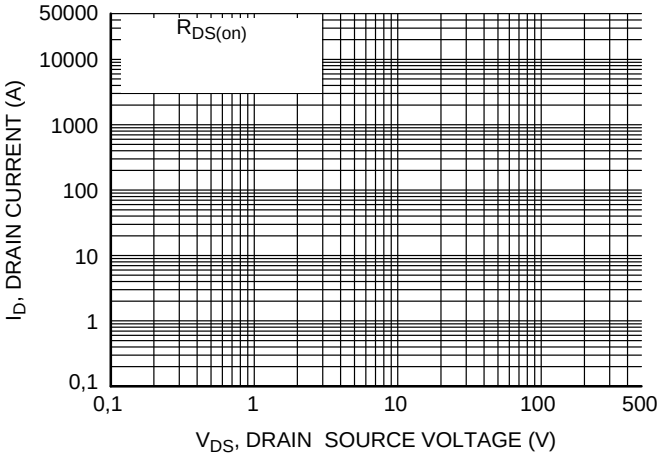
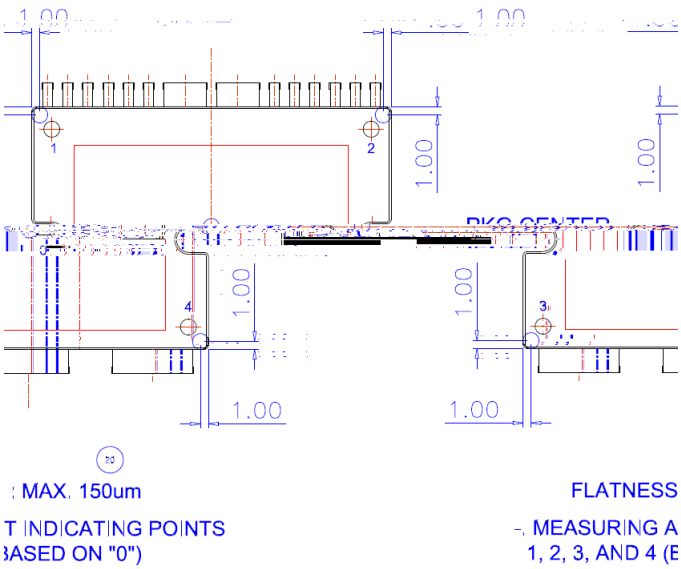

100000
10000
1000
100
10
1
CAPACITANCE (pF)
C_{iss}
C_{oss}
C_{rss}
f = 750 kHz
V_{GS} = 0 V
0,1
1
10
80
V_{DS}, DRAIN TO SOURCE VOLTAGE (V)


12
9
6
3
0
V_{GS}, GATE TO SOURCE VOLTAGE (V)
I_D = 160 A
V_{DD} = 40 V
V_{DD} = 32 V
V_{DD} = 48 V
0 50 100 150 200 250 300 350 400 450 500 550
Qg, GATE CHARGE (nC)


50000
10000
1000
100
10
1
0,1
I_D, DRAIN CURRENT (A)
$R_{DS(on)}$
0,1
1
10
100
500
V_{DS}, DRAIN SOURCE VOLTAGE (V)



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			21.2		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 to for the proper information of mounding condition.