NXH25T120L2Q1PG

Q1 3-Phase TNPC Module

The NXH25T120L2Q1PG/PTG is a case power module containing a three channel T−type neutral−point clamped (TNPC) circuit. Each channel has a two 1200 V, 25 A IGBTs with inverse diodes and two 650 V, 20 A IGBTs with inverse diodes. The module contains an NTC thermistor.

Features

- Low Package Height
- Compact 82.5 mm x 37.4 mm x 12 mm Package
- Press−fit Pins
- Options with Pre−applied Thermal Interface Material (TIM) and Without Pre−applied TIM
- Thermistor

Typical Applications

- Solar Inverters
- UPS

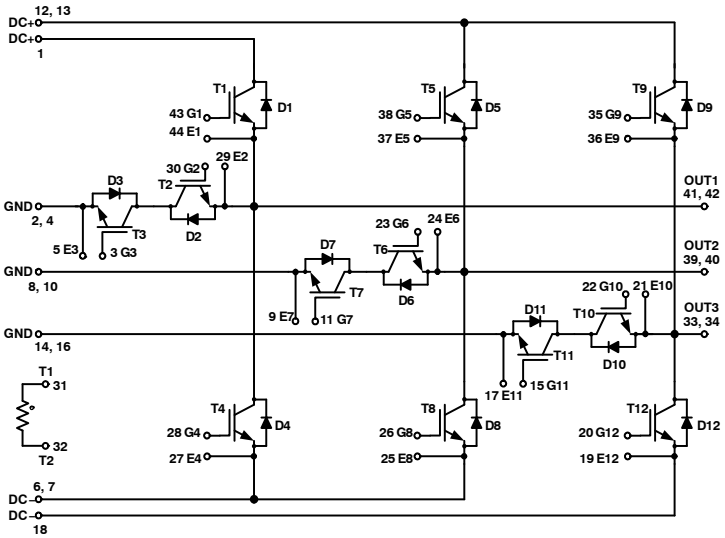

Figure 1. NXH25T120L2Q1PG/PTG Schematic Diagram

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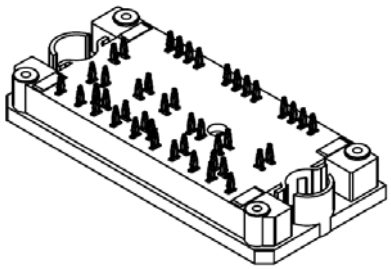
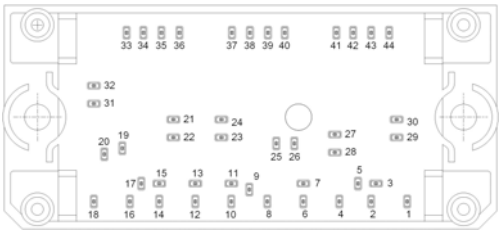


Q1 3−TNPC
PRESS FIT
CASE 180AS

DEVICE MARKING

NXH25T120L2Q1P or
NXH25T120L2Q1PT
= Specific Device Code
G = Pb−Free Package
AT = Assembly & Test Site Code
YYWW = Year and Work Week Code

PIN ASSIGNMENTS



ORDERING INFORMATION

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

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Table 1. MAXIMUM RATINGS (Note 1)

Rating	Symbol	Value	Unit
HALF BRIDGE IGBT			
Collector−Emitter Voltage	V_{CES}	1200	V
Gate−Emitter Voltage	V_{GE}	±20	V
Continuous Collector Current @ T_c = 80°C (T_J = 175°C)	I_C	25	A
Pulsed Collector Current (T_J = 175°C)	I_{Cpulse}	75	A
Maximum Power Dissipation (T_J = 175°C)	P_{tot}	81	W
Short Circuit Withstand Time @ V_{GE} = 15 V, V_{CE} = 600 V, $T_J \leq$ 150°C	T_{sc}	5	μs
Minimum Operating Junction Temperature	T_{JMIN}	−40	°C
Maximum Operating Junction Temperature	T_{JMAX}	150	°C
NEUTRAL POINT IGBT			
Collector−Emitter Voltage	V_{CES}	650	V
Gate−Emitter Voltage	V_{GE}	±20	V
Continuous Collector Current @ T_c = 80°C (T_J = 175°C)	I_C	20	A
Pulsed Collector Current (T_J = 175°C)	I_{Cpulse}	60	A
Maximum Power Dissipation (T_J = 175°C)	P_{tot}	50	W
Short Circuit Withstand Time @ V_{GE} = 15 V, V_{CE} = 400 V, $T_J \leq$ 150°C	T_{sc}	5	μs
Minimum Operating Junction Temperature	T_{JMIN}	−40	°C
Maximum Operating Junction Temperature	T_{JMAX}	150	°C
HALF BRIDGE DIODE			
Peak Repetitive Reverse Voltage	V_{RRM}	1200	V
Continuous Forward Current @ T_c = 80°C (T_J = 175°C)	I_F	15	A
Repetitive Peak Forward Current (T_J = 175°C)	I_{FRM}	45	A
Maximum Power Dissipation (T_J = 175°C)	P_{tot}	43	W
Minimum Operating Junction Temperature	T_{JMIN}	−40	°C
Maximum Operating Junction Temperature	T_{JMAX}	150	°C
NEUTRAL POINT DIODE			
Peak Repetitive Reverse Voltage	V_{RRM}	650	V
Continuous Forward Current @ T_c = 80°C (T_J = 175°C)	I_F	15	A
Repetitive Peak Forward Current (T_J = 175°C)	I_{FRM}	45	A
Maximum Power Dissipation (T_J = 175°C)	P_{tot}	39	W
Minimum Operating Junction Temperature	T_{JMIN}	−40	°C
Maximum Operating Junction Temperature	T_{JMAX}	150	°C
THERMAL PROPERTIES			
Storage Temperature range	T_{stg}	−40 to 125	°C
INSULATION PROPERTIES			
Isolation test voltage, t = 1 sec, 60Hz	V_{is}	3000	V_{RMS}
Creepage distance		12.7	mm

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. Refer to ELECTRICAL CHARACTERISTICS, RECOMMENDED OPERATING RANGES and/or APPLICATION INFORMATION for Safe Operating parameters.

Table 2. RECOMMENDED OPERATING RANGES

Rating	Symbol	Min	Max	Unit
Module Operating Junction Temperature	T_J	−40	150	°C

Functional operation above the stresses listed in the Recommended Operating Ranges is not implied. Extended exposure to stresses beyond the Recommended Operating Ranges limits may affect device reliability.