NXH80T120L2Q0PG, NXH80T120L2Q0SG

T-Type, Neutral Point Clamp Module

This high−density, integrated power module combines high−performance IGBTs with rugged anti−parallel diodes for sine wave inverter applications.

Features

- Extremely Efficient Trench IGBT with Fieldstop Technology
- Module Design Offers High Power Density
- Low Inductive Layout
- Q0PACK Package with Press−Fit Pins

Typical Applications

- Solar Inverters
- Uninterruptable Power Supplies

ABSOLUTE MAXIMUM RATINGS

Rating	Symbol	Value	Unit
BRIDGE IGBT			
Collector−emitter voltage	V_{CES}	1200	V
Collector current T_h = 80°C	I_C	65	A
Pulsed Collector Current, T_{pulse} Limited by T_{jmax}	I_{CM}	260	A
Gate−emitter voltage	V_{GE}	±20	V
Power Dissapation per IGBT $T_j = T_{jmax}$ T_h = 80°C	P_{total}	146	W
Short Circuit Withstand Time V_{GE} = 15 V, V_{CE} = 600 V, $T_J \le 150°C$	T_{SC}	10	μs
NEUTRAL POINT IGBT			
Collector−emitter voltage (Bridge)	V_{CES}	600	V
Collector current @ T_h = 80°C	I_C	59	A
Pulsed Collector Current, T_{pulse} Limited by T_{jmax}	I_{CM}	235	A
Gate−emitter voltage	V_{GE}	±20	V
Power Dissapation per IGBT $T_j = T_{jmax}$ T_h = 80°C	P_{total}	66	W
Short Circuit Withstand Time V_{GE} = 15 V, V_{CE} = 400 V, $T_J \le 150°C$	T_{SC}	5	μs

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.

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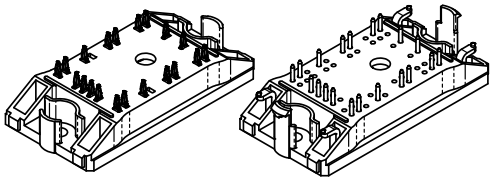
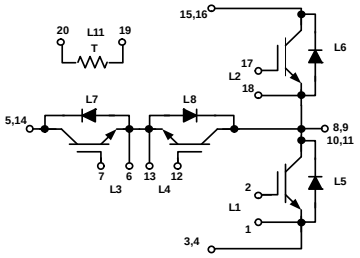
80 A, 1200 V (Bridge)
50 A, 600 V (Neutral Point Clamp)
T – Type Neutral Point Clamp



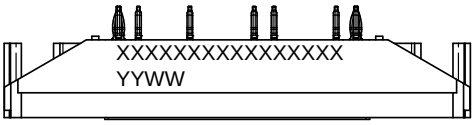
Q0PACK
CASE 180AA

Q0PACK
CASE 180AB

SCHEMATIC



MARKING DIAGRAM



YYWW = Year and Work Week Code

ORDERING INFORMATION

See detailed ordering and shipping information in the dimensions section on page 13 of this data sheet.

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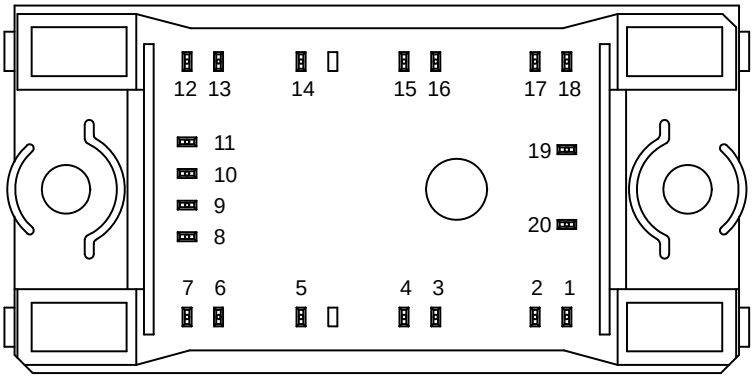
PIN ASSIGNMENTS



ABSOLUTE MAXIMUM RATINGS

Rating	Symbol	Value	Unit
BRIDGE DIODE			
Peak Repetitive Voltage	V_{RRM}	1200	V
Forward Current, DC @ T_C = 80°C	I_F	41	A
Power Dissipation per Diode $T_j = T_{jmax}$ T_h = 80°C	P_{total}	69	W
Nonrepetitive Peak Surge Current (Surge applied at rated load conditions halfwave, single phase, 60 Hz)	I_{FSM}	300	A
I^2t – value (Surge applied at rated load conditions halfwave, single phase, 60 Hz)	I^2t	373.5	A^2s
NEUTRAL POINT DIODE			
Diode peak repetitive voltage	V_{RRM}	600	V
Forward Current, DC @ T_h = 80°C	I_F	36	A
Power Dissipation per Diode $T_j = T_{jmax}$ T_h = 80°C	P_{total}	51	W
Nonrepetitive Peak Surge Current (Surge applied at rated load conditions halfwave, single phase, 60 Hz)	I_{FSM}	500	A
I^2t – value (Surge applied at rated load conditions halfwave, single phase, 60 Hz)	I^2t	1037.5	A^2s

THERMAL & SAFETY CHARACTERISTICS

Rating	Symbol	Value	Unit
Maximum junction temperature range IGBT Diode	T_J	 175 175	°C
Storage temperature range	T_{stg}	−40 to 150	°C
Operating Temperature under Switching conditions	$T_{VJ\ OP}$	−40 to 150	°C
Isolation test voltage, t = 1 min, 60 Hz	V_{is}	2500	Vac
Creepage distance		12.7	mm
Clearance		12.7	mm