

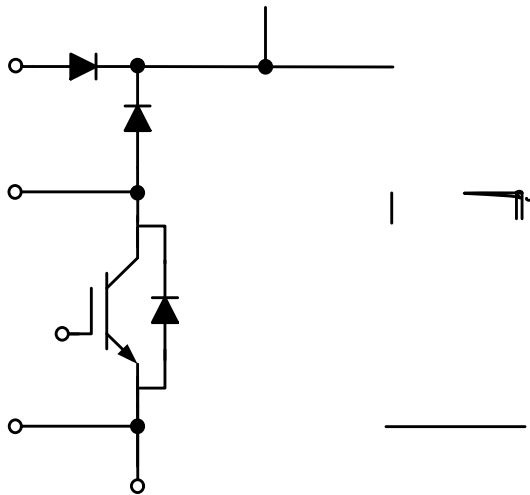
The NXH80B120H2Q0 is a high-density, integrated power module combines high-performance IGBTs with rugged anti-parallel diodes including on-board thermistor.

Features

- Dual Boost 40 A / 1200 V IGBT + SiC Rectifier Hybrid Module
- 1200 V FSII IGBT $V_{CE(SAT)} = 2.2\text{ V}$
- 1200 V SiC Diode $V_F = 1.4\text{ V}$
- Low Inductive Layout
- Solderable Pins
- Thermistor
- Bare Copper and Nickel-Plated DBC Options

Typical Applications

- Solar Inverter
- Uninterruptible Power Supplies
- Energy Storage Systems



NXH80B120H2Q0

Table 1. ABSOLUTE MAXIMUM RATINGS (Note 1) $T_J = 25^\circ\text{C}$ unless otherwise noted

Rating	Symbol	Value	Unit
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BOOST IGBT

Collector-

NXH80B120H2Q0

Table 3. ELECTRICAL CHARACTERISTICS $T_J = 25^\circ\text{C}$ unless otherwise noted

Parameter	Test Conditions	Symbol	Min	Typ	Max	Unit
BYPASS DIODE/IGBT PROTECTION DIODE CHARACTERISTICS						
Diode Forward Voltage	$I_F = 25\text{ A}, T_J = 25^\circ\text{C}$	V_F	–	1.0	1.4	V
	$I_F = 25\text{ A}, T_J = 150^\circ\text{C}$		–	0.90	–	
Thermal Resistance – chip-to-heatsink	Thermal grease, Thickness < 100 μm , $\lambda = 0.84\text{ W/mK}$	R_{thJH}	–	1.44	–	$^\circ\text{C/W}$
THERMISTOR CHARACTERISTICS						
Nominal resistance		R_{25}	–	22	–	$\text{k}\Omega$
Nominal resistance	$T = 100^\circ\text{C}$	R_{100}	–	1486	–	Ω
Deviation of R_{25}		$\Delta R/R$	–5	–	5	%

NXH80B120H2Q0

TYPICAL CHARACTERISTICS – BOOST IGBT & BOOST DIODE

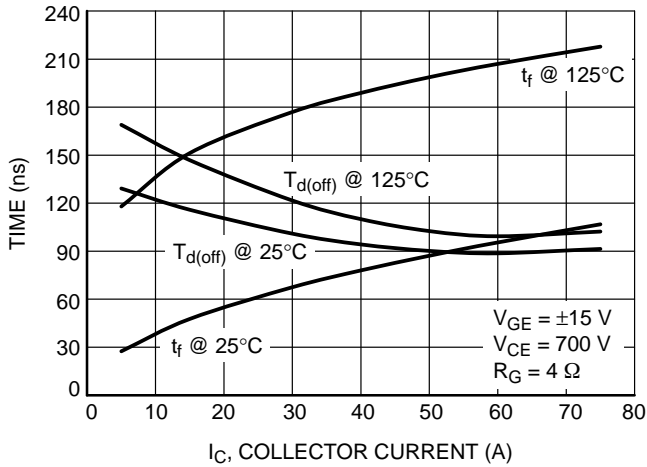


Figure 7. Typical Switching Times vs. I_C

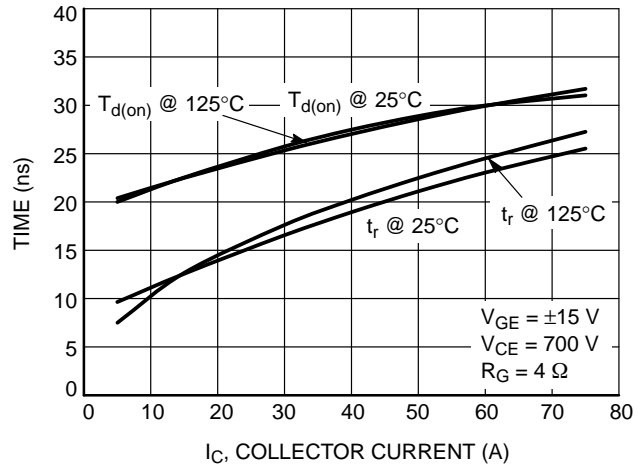


Figure 8. Typical Switching Times vs. I_C

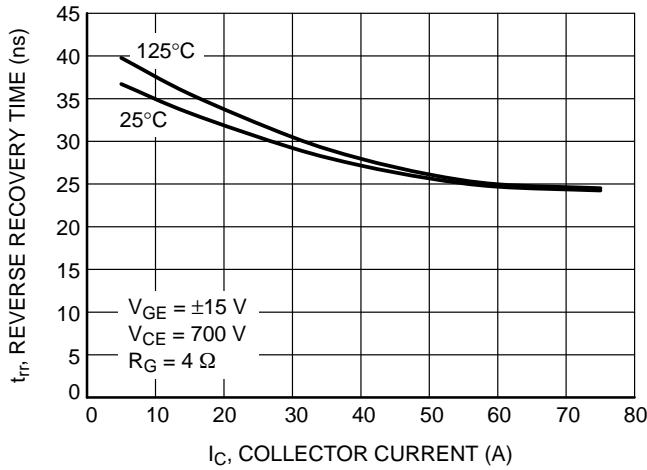


Figure 9. Typical Reverse Recovery Time vs. I_C

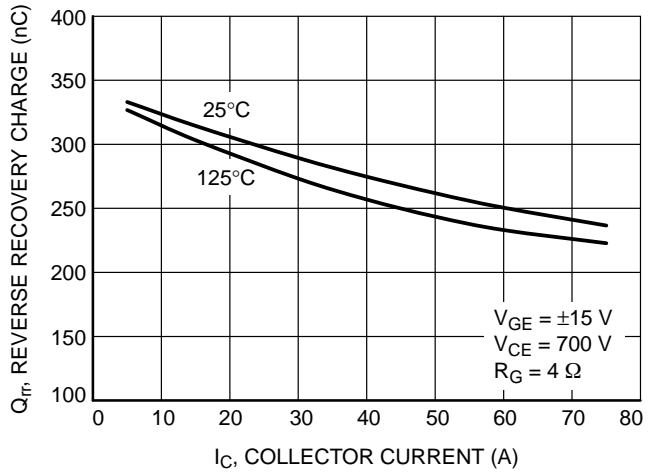


Figure 10. Typical Reverse Recovery Charge vs. I_C

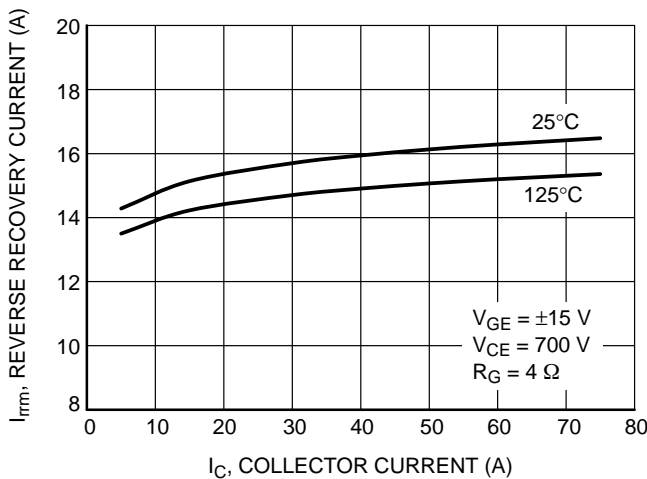


Figure 11. Typical Reverse Recovery Peak Current vs. I_C

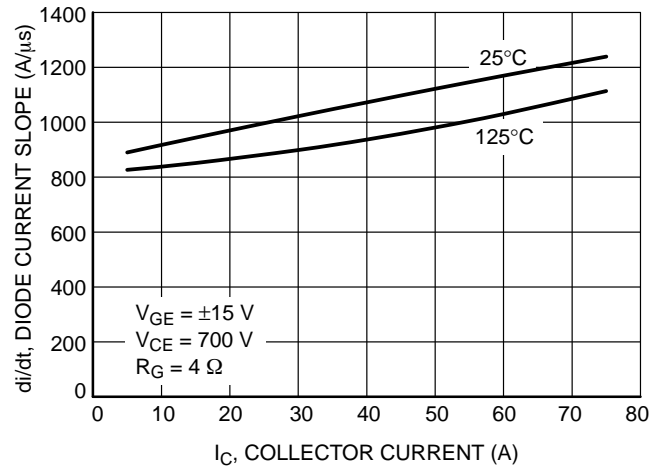


Figure 12. Typical Diode Current Slope vs. I_C

NXH80B120H2Q0

TYPICAL CHARACTERISTICS – BOOST IGBT & BOOST DIODE

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TYPICAL CHARACTERISTICS – BOOST IGBT & BOOST DIODE

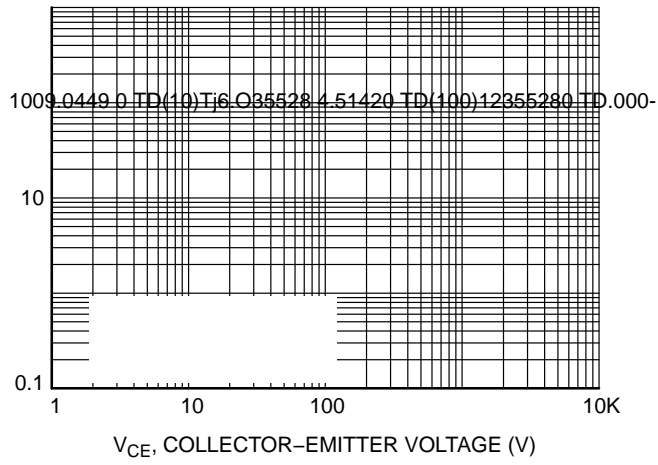


Figure 17. T1 & T2 FBSOA

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TYPICAL CHARACTERISTICS – IGBT PROTECTION DIODE AND BYPASS DIODE

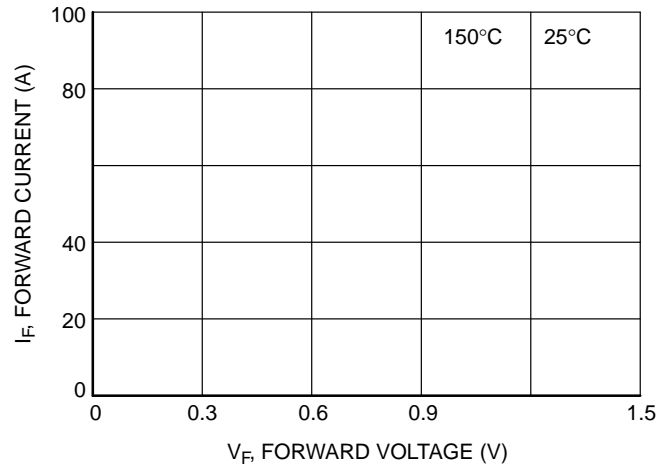


Figure 19. Diode Forward Characteristic

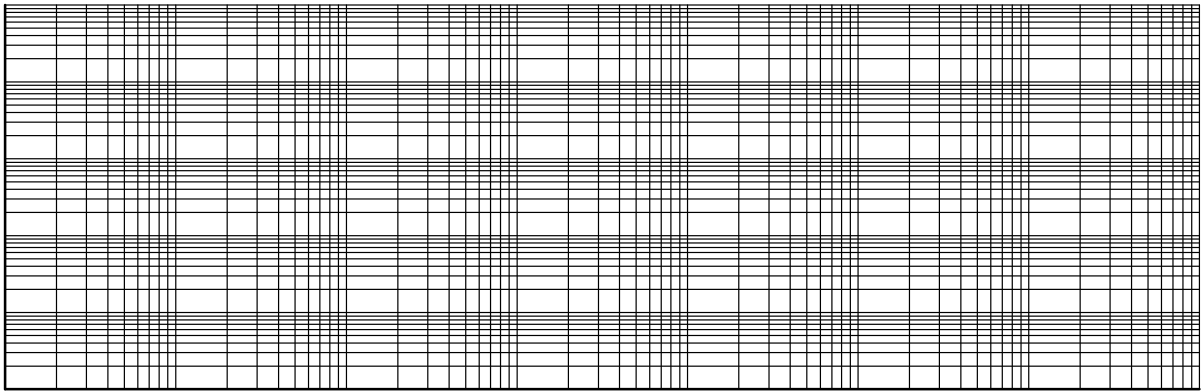
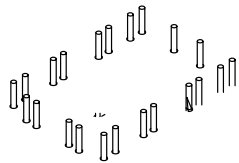


Figure 20. Diode Transient Thermal Impedance Bypass Diode / IGBT Protection Diode



PIM22, 55x32.5 / Q0BOOST
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2. CD

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