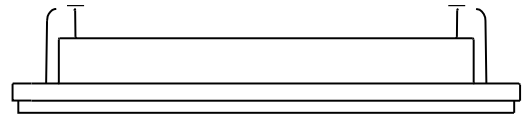


PIM56, 93x47 (SOLDER PIN)  
CASE 180AK

**MARKING DIAGRAM**



**Features**

- Split T-type Neutral Point Clamped Three-level Inverter Module
- 1200 V Ultra Field Stop IGBTs & 650 V FS4 IGBTs
- 650 V SiC Diodes
- Low Inductive Layout
- Solderable Pins
- Thermistor
- Pre-applied Thermal Interface Material (TIM) (optional)
- Nickel Plated DBC

**Typical Applications**

- Solar Inverters
- Uninterruptible Power Supplies

**PIN CONNECTIONS**

**ORDERING INFORMATION**

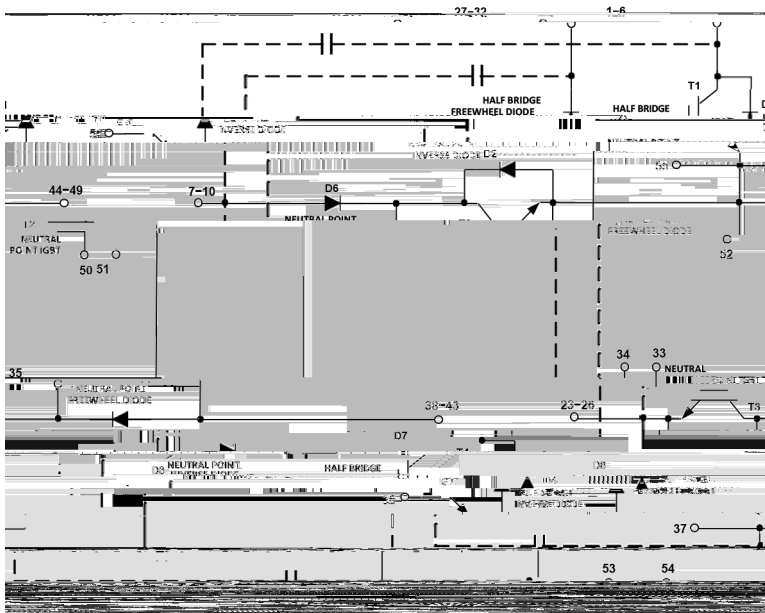


Figure 1. NXH200T120H3Q2F2STNG Schematic Diagram



# NXH200T120H3Q2F2STNG

**Table 1. ABSOLUTE MAXIMUM RATINGS**

Rating	Symbol	Value	Unit
<b>NEUTRAL POINT INVERSE DIODE</b>			
		-	°C
			°C
<b>THERMAL PROPERTIES</b>			
		-	°C
<b>INSULATION PROPERTIES</b>			

**Table 2. RECOMMENDED OPERATING RANGES**

Rating	Symbol	Min	Max	Unit
		-	-	°C

**Table 3. ELECTRICAL CHARACTERISTICS**

Parameter

# NXH200T120H3Q2F2STNG

**Table 3. ELECTRICAL CHARACTERISTICS**

Parameter	Test Conditions	Symbol	Min	Typ	Max	Unit	
<b>HALF BRIDGE IGBT CHARACTERISTICS</b>							
-	$\circ$ $\Omega$ - +						
-							
-							
-							
- - -	$\lambda$ $\mu$					$\circ$	
- - -						$\circ$	

**NEUTRAL POINT FREEWHEEL DIODE CHARACTERISTICS**

--	--	--	--	--	--

# NXH200T120H3Q2F2STNG

**Table 3. ELECTRICAL CHARACTERISTICS**

Parameter	Test Conditions	Symbol	Min	Typ	Max	Unit
<b>NEUTRAL POINT IGBT CHARACTERISTICS</b>						
-	°					
	Ω	-				
-						

# NXH200T120H3Q2F2STNG

**Table 3. ELECTRICAL CHARACTERISTICS**

Parameter	Test Conditions	Symbol	Min	Typ	Max	Unit
-----------	-----------------	--------	-----	-----	-----	------

**HALF BRIDGE INVERSE DIODE CHARACTERISTICS**

	°					
	°		-		-	
- - -	$\lambda$	$\mu$				°
- - -						°

**NEUTRAL POINT INVERSE DIODE CHARACTERISTICS**

	°					
	°		-		-	
- - -	$\lambda$	$\mu$				°
- - -						°

**THERMISTOR CHARACTERISTICS**

			-		-	
	°		-		-	
			-	-		
			-		-	
			-		-	
-		$\pm$	-		-	
-		$\pm$	-		-	

**ORDERING INFORMATION**

Device	Marking	Package	Shipping

# NXH200T120H3Q2F2STNG

## TYPICAL CHARACTERISTICS – HALF BRIDGE IGBT AND NEUTRAL POINT DIODE

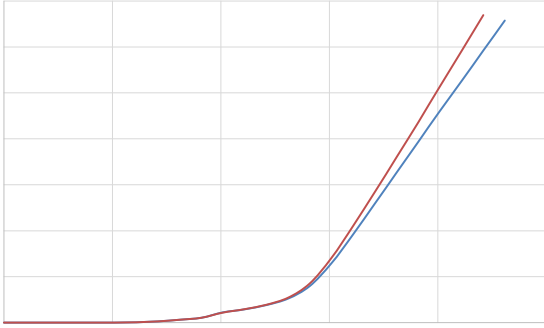


Figure 2. Typical Output Characteristics

Figure 3. Typical Output Characteristics

Figure 4. Typical Transfer Characteristics

Figure 5. Typical Diode Forward Characteristics

Figure 6. Typical Turn ON Loss vs.  $I_C$

Figure 7. Typical Turn OFF Loss vs.  $I_C$

**NXH200T120H3Q2F2STNG**



# NXH200T120H3Q2F2STNG

## TYPICAL CHARACTERISTICS – HALF BRIDGE IGBT AND NEUTRAL POINT DIODE

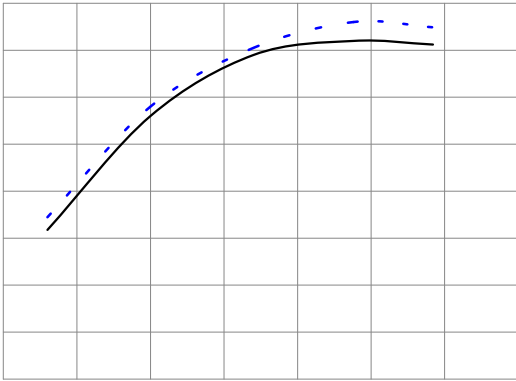


Figure 14. Typical Reverse Recovery Energy vs.  $I_C$



Figure 15. Typical Reverse Recovery Energy Loss vs.  $R_G$

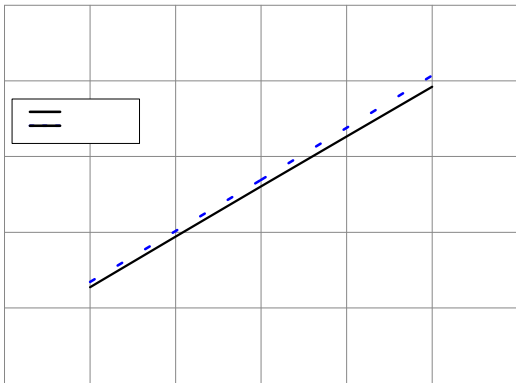


Figure 16. Typical Turn ON Loss vs.  $R_G$

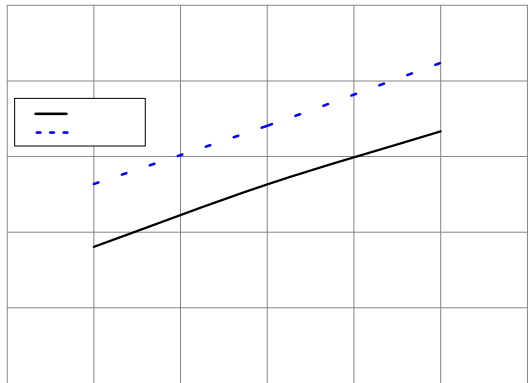


Figure 17. Typical Turn OFF vs.  $R_G$

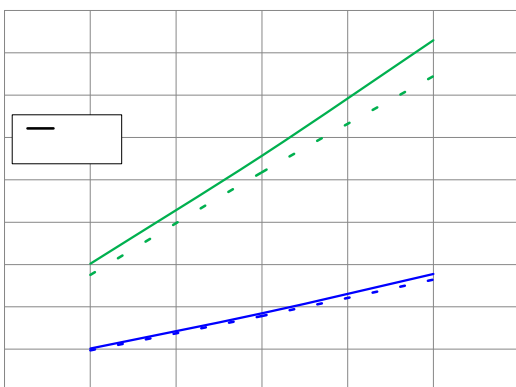


Figure 18. Typical Turn ON Switching Time vs.  $R_G$

Figure 19. Typical Turn OFF Switching Time vs.  $R_G$

# NXH200T120H3Q2F2STNG

## TYPICAL CHARACTERISTICS – HALF BRIDGE IGBT AND NEUTRAL POINT DIODE

**NXH200T120H3Q2F2STNG**



# NXH200T120H3Q2F2STNG

## TYPICAL CHARACTERISTICS – NEUTRAL POINT IGBT AND HALF BRIDGE DIODE

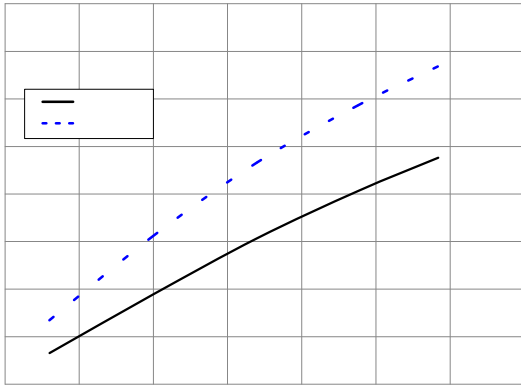


Figure 33. Typical Turn ON Loss vs.  $I_C$

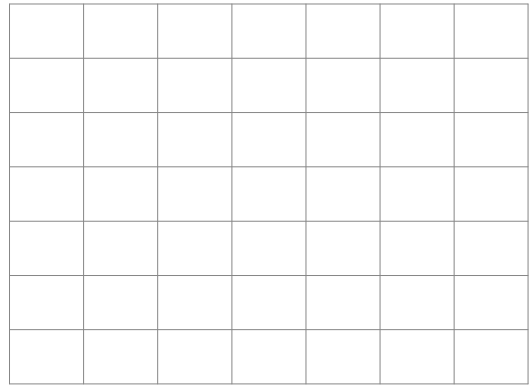


Figure 34. Typical Turn OFF Loss vs.  $I_C$

Figure 35. Typical Turn ON Switching Time vs.  $I_C$

Figure 36. Typical Turn OFF Switching Time vs.  $I_C$

Figure 37. Typical Reverse Recovery Time vs.  $I_C$

Figure 38. Typical Reverse Recovery Charge vs.  $I_C$

# NXH200T120H3Q2F2STNG

## TYPICAL CHARACTERISTICS – NEUTRAL POINT IGBT AND HALF BRIDGE DIODE

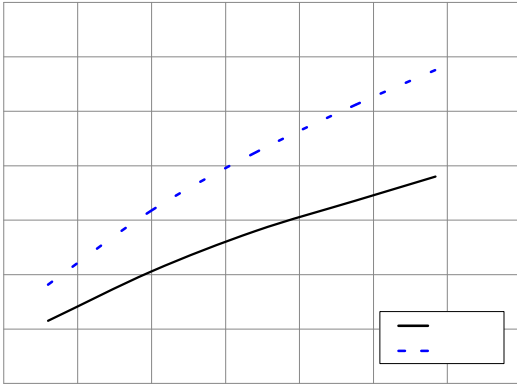


Figure 39. Typical Turn ON Loss vs.  $I_C$

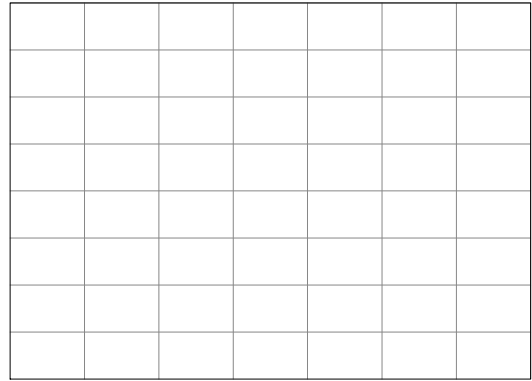


Figure 40. Typical Turn OFF Loss vs.  $I_C$

Figure 41. Typical Turn ON Switching Time vs.  $I_C$

Figure 42. Typical Turn OFF Switching Time vs.  $I_C$

Figure 43. Typical Turn ON Loss vs.  $R_G$

Figure 44. Typical Turn OFF vs.  $R_G$

**NXH200T120H3Q2F2STNG**

**NXH200T120H3Q2F2STNG**



**NXH200T120H3Q2F2STNG**



# NXH200T120H3Q2F2STNG

## TYPICAL CHARACTERISTICS – NEUTRAL POINT INVERSE DIODE

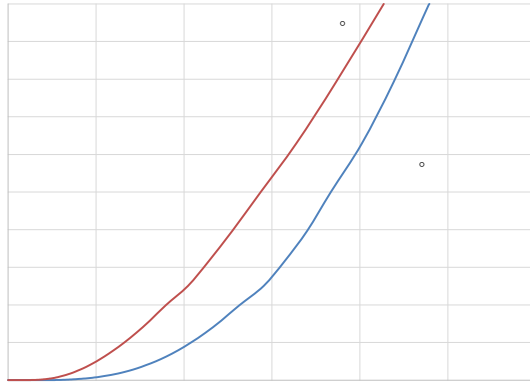
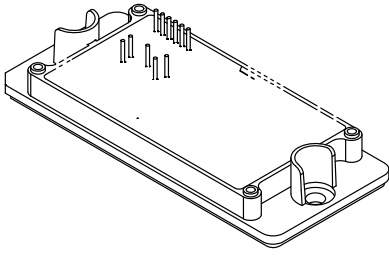


Figure 58. Diode Forward Characteristic

Figure 59. Diode Transient Thermal Impedance



**PIM56, 93x47 (SOLDER PIN)**

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