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# T-Type NPC Power Module

## 1200 V 100 A IGBT, 650 V 75 A IGBT

### NXH100T120L3Q0S1NG

#### Description

The NXH100T120L3Q0S1NG is a power module containing a T-type Neutral Point Clamped (NPC) 3-level inverter consisting of 100 A/1200 V half-bridge IGBTs with 40 A/1200 V half-bridge diodes and 75 A/650 V NP IGBTs with 50 A/650 V NP diodes. The module also contains an on-board thermistor.

#### Features

- T-type NPC Module with 100 A/1200 V and 75 A/650 V IGBTs
- HB IGBT Specifications:  $V_{CE(SAT)} = 1.8$  V,  $E_{SW} = 2.5$  mJ
- NP IGBT Specifications:  $V_{CE(SAT)} = 1.4$  V,  $E_{SW} = 1.25$  mJ
- Solder Pins
- Thermistor
- These Device is Pb-Free, Halogen Free and is RoHS Compliant

#### Typical Applications

- Solar Inverter
- Uninterruptible Power Supplies

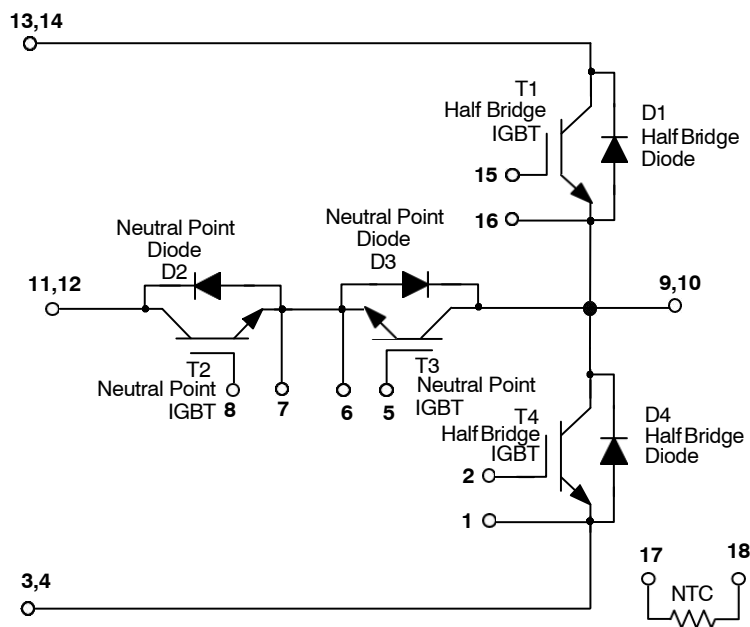
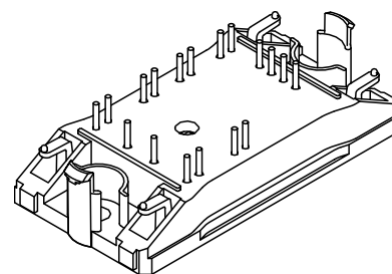


Figure 1. NXH100T120L3Q0S1NG Schematic Diagram



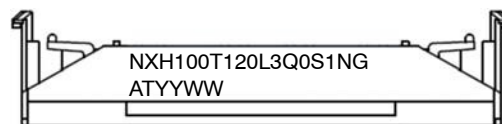
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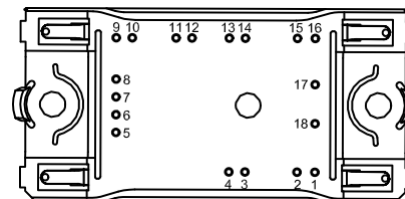
**Q0PACK  
CASE 180AH**

#### MARKING DIAGRAM



NXH100T120L3Q0S1NG = Specific Device Code  
 YYWW = Year and Work Week Code  
 A = Assembly Site Code  
 T = Test Site Code  
 G = Pb-Free Package

#### PIN CONNECTIONS



#### ORDERING INFORMATION

See detailed ordering and shipping information on page 19 of this data sheet.

# NXH100T120L3Q0S1NG

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

Rating	Symbol	Value	Unit
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### HALF BRIDGE IGBT

Collector-Emitter Voltage	$V_{CES}$	1200	V
Gate-Emitter Voltage	$V_{GE}$	$\pm 20$	V
Continuous Collector Current @ $T_h = 80^{\circ}\text{C}$ ( $T_J = 175^{\circ}\text{C}$ )	$I_C$	100	A
Pulsed Collector Current ( $T_J = 175^{\circ}\text{C}$ )	$I_{Cpulse}$	300	A
Maximum Power Dissipation @ $T_h = 80^{\circ}\text{C}$ ( $T_J = 175^{\circ}\text{C}$ )	$P_{tot}$	328	W
Minimum Operating Junction Temperature	$T_{JMIN}$	-40	$^{\circ}\text{C}$
Maximum Operating Junction Temperature	$T_{JMAX}$	175	$^{\circ}\text{C}$

### NEUTRAL POINT IGBT

Collector-Emitter Voltage	$V_{CES}$	650	V
Gate-Emitter Voltage	$V_{GE}$	$\pm 20$	V
Continuous Collector Current @ $T_h = 80^{\circ}\text{C}$ ( $T_J = 175^{\circ}\text{C}$ )	$I_C$	54	A
Pulsed Collector Current ( $T_J = 175^{\circ}\text{C}$ )	$I_{Cpulse}$	162	A
Maximum Power Dissipation @ $T_h = 80^{\circ}\text{C}$ ( $T_J = 175^{\circ}\text{C}$ )	$P_{tot}$	122	W
Minimum Operating Junction Temperature	$T_{JMIN}$	-40	$^{\circ}\text{C}$
Maximum Operating Junction Temperature	$T_{JMAX}$	175	$^{\circ}\text{C}$

### HALF BRIDGE DIODE

Peak Repetitive Reverse Voltage	$V_{RRM}$	1200	V
Continuous Forward Current @ $T_h = 80^{\circ}\text{C}$ ( $T_J = 175^{\circ}\text{C}$ )	$I_F$	30	A
Repetitive Peak Forward Current ( $T_J = 175^{\circ}\text{C}$ , $t_p$ limited by $T_{Jmax}$ )	$I_{FRM}$	90	A
Maximum Power Dissipation @ $T_h = 80^{\circ}\text{C}$ ( $T_J = 175^{\circ}\text{C}$ )	$P_{tot}$	101	W
Minimum Operating Junction Temperature	$T_{JMIN}$	-40	$^{\circ}\text{C}$
Maximum Operating Junction Temperature	$T_{JMAX}$	175	$^{\circ}\text{C}$

### NEUTRAL POINT DIODE

Peak Repetitive Reverse Voltage	$V_{RRM}$	650	V
Continuous Forward Current @ $T_h = 80^{\circ}\text{C}$ ( $T_J = 175^{\circ}\text{C}$ )	$I_F$	47	A
Repetitive Peak Forward Current ( $T_J = 175^{\circ}\text{C}$ , $t_p$ limited by $T_{Jmax}$ )	$I_{FRM}$	141	A
Maximum Power Dissipation @ $T_h = 80^{\circ}\text{C}$ ( $T_J = 175^{\circ}\text{C}$ )	$P_{tot}$	101	W
Minimum Operating Junction Temperature	$T_{JMIN}$	-40	$^{\circ}\text{C}$
Maximum Operating Junction Temperature	$T_{JMAX}$	175	$^{\circ}\text{C}$

### THERMAL PROPERTIES

Storage Temperature Range	$T_{stg}$	-40 to 150	$^{\circ}\text{C}$
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### INSULATION PROPERTIES

Isolation Test Voltage, $t = 1$ sec, 60 Hz	$V_{is}$	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.

### RECOMMENDED OPERATING RANGES

Rating	Symbol	Min	Max	Unit
Module Operating Junction Temperature	$T_J$	-40	$T_{jmax} - 25$	$^{\circ}\text{C}$

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.

# NXH100T120L3Q0S1NG

## ELECTRICAL CHARACTERISTICS (T<sub>J</sub> = 25°C unless otherwise noted)

Parameter	Test Conditions	Symbol	Min	Typ	Max	Unit
<b>HALF BRIDGE IGBT CHARACTERISTICS</b>						
Collector–Emitter Cutoff Current	V <sub>GE</sub> = 0 V, V <sub>CE</sub> = 1200 V	I <sub>CES</sub>	–	–	200	μA
Collector–Emitter Saturation Voltage	V <sub>GE</sub> = 15 V, I <sub>C</sub> = 100 A, T <sub>J</sub> = 25°C	V <sub>CE(sat)</sub>	–	1.8	2.3	V
	V <sub>GE</sub> = 15 V, I <sub>C</sub> = 100 A, T <sub>J</sub> = 175°C		–	1.9	–	V
Gate–Emitter Threshold Voltage	V <sub>GE</sub> = V <sub>CE</sub> , I <sub>C</sub> = 2 mA	V <sub>GE(TH)</sub>	4.6	5.3	6.5	V
Gate Leakage Current	V <sub>GE</sub> = 20 V, V <sub>CE</sub> = 0 V	I <sub>GES</sub>	–	–	800	nA
Turn–on Delay Time	T <sub>J</sub> = 25°C, V <sub>CE</sub> = 350 V, I <sub>C</sub> = 100 A, V <sub>GE</sub> = +15/–8 V, R <sub>G</sub> = 4.7 Ω	t <sub>d(on)</sub>	–	59	–	ns
Rise Time		t <sub>r</sub>	–	38	–	
Turn–off Delay Time		t <sub>d(off)</sub>	–	229	–	
Fall Time		t <sub>f</sub>	–	77	–	
Turn–on Switching Loss per Pulse		E <sub>on</sub>	–	1.2	–	mJ
Turn–off Switching Loss per Pulse		E <sub>off</sub>	–	2.5	–	
Turn–on Delay Time	T <sub>J</sub> = 125°C, V <sub>CE</sub> = 400 V, I <sub>C</sub> = 100 A, V <sub>GE</sub> = +15/–15 V, R <sub>G</sub> = 4.7 Ω	t <sub>d(on)</sub>	–	55	–	ns
Rise Time		t <sub>r</sub>	–	38	–	
Turn–off Delay Time		t <sub>d(off)</sub>	–	261	–	
Fall Time		t <sub>f</sub>	–	151	–	
Turn–on Switching Loss per Pulse		E <sub>on</sub>	–	1.8	–	mJ
Turn–off Switching Loss per Pulse		E <sub>off</sub>	–	3.7	–	
Input Capacitance	V <sub>CE</sub> = 20 V, V <sub>GE</sub> = 0 V, f = 10 kHz	C <sub>ies</sub>	–	18150	–	pF
Output Capacitance		C <sub>oes</sub>	–	346	–	
Reverse Transfer Capacitance		C <sub>res</sub>	–	294	–	
Total Gate Charge	V <sub>CE</sub> = 600 V, I <sub>C</sub> = 80 A, V <sub>GE</sub> = 15 V	Q <sub>g</sub>	–	817	–	nC
Thermal Resistance – chip–to–heatsink	Thermal grease, Thickness = 100 μm, λ = 2.87 W/mK	R <sub>thJH</sub>	–	0.29	–	°C/W

## NEUTRAL POINT DIODE CHARACTERISTICS

Diode Forward Voltage	I <sub>F</sub> = 50 A, T <sub>J</sub> = 25°C	V <sub>F</sub>	–	2.2	2.8	V
	I <sub>F</sub> = 50 A, T <sub>J</sub> = 175°C		–	1.7	–	
Reverse Recovery Time	T <sub>J</sub> = 25°C, V <sub>CE</sub> = 350 V, I <sub>C</sub> = 100 A, V <sub>GE</sub> = +15/–15 V, R <sub>G</sub> = 4.7 Ω	t <sub>rr</sub>	–	34	–	ns
Reverse Recovery Charge		Q <sub>rr</sub>	–	688	–	μC
Peak Reverse Recovery Current		I <sub>RRM</sub>	–	35	–	A
Peak Rate of Fall of Recovery Current		di/dt	–	1764	–	A/μs
Reverse Recovery Energy		E <sub>rr</sub>	–	143	–	μJ
Reverse Recovery Time	T <sub>J</sub> = 125°C, V <sub>CE</sub> = 400 V, I <sub>C</sub> = 100 A, V <sub>GE</sub> = +15/–15 V, R <sub>G</sub> = 4.7 Ω	t <sub>rr</sub>	–	100	–	ns
Reverse Recovery Charge		Q <sub>rr</sub>	–	2740	–	nC
Peak Reverse Recovery Current		I <sub>RRM</sub>	–	67	–	A
Peak Rate of Fall of Recovery Current		di/dt	–	872	–	A/μs
Reverse Recovery Energy		E <sub>rr</sub>	–	645	–	μJ
Thermal Resistance – chip–to–heatsink	Thermal grease, Thickness = 100 μm, λ = 2.87 W/mK	R <sub>thJH</sub>	–	0.94	–	°C/W

## NEUTRAL POINT IGBT CHARACTERISTICS

Collector–Emitter Cutoff Current	V <sub>GE</sub> = 0 V, V <sub>CE</sub> = 650 V	I <sub>CES</sub>	–	–	200	μA
Collector–Emitter Saturation Voltage	V <sub>GE</sub> = 15 V, I <sub>C</sub> = 75 A, T <sub>J</sub> = 25°C	V <sub>CE(sat)</sub>	–	1.39	2.2	V
	V <sub>GE</sub> = 15 V, I <sub>C</sub> = 75 A, T <sub>J</sub> = 175°C		–	1.58	–	
Gate–Emitter Threshold Voltage	V <sub>GE</sub> = V <sub>CE</sub> , I <sub>C</sub> = 250 μA	V <sub>GE(TH)</sub>	3.5	4.0	4.7	V
Gate Leakage Current	V <sub>GE</sub> = 20 V, V <sub>CE</sub> = 0 V	I <sub>GES</sub>	–	–	300	nA

# NXH100T120L3Q0S1NG

## ELECTRICAL CHARACTERISTICS (T<sub>J</sub> = 25°C unless otherwise noted) (continued)

Parameter	Test Conditions	Symbol	Min	Typ	Max	Unit
<b>NEUTRAL POINT IGBT CHARACTERISTICS</b>						
Turn-on Delay Time	T <sub>J</sub> = 25°C V <sub>CE</sub> = 350 V, I <sub>C</sub> = 100 A, V <sub>GE</sub> = ±15 V, R <sub>G</sub> = 10 Ω	t <sub>d(on)</sub>	—	68	—	ns
Rise Time		t <sub>r</sub>	—	44	—	
Turn-off Delay Time		t <sub>d(off)</sub>	—	108	—	
Fall Time		t <sub>f</sub>	—	21	—	
Turn-on Switching Loss per Pulse		E <sub>on</sub>	—	0.95	—	mJ
Turn-off Switching Loss per Pulse		E <sub>off</sub>	—	1.25	—	
Turn-on Delay Time	T <sub>J</sub> = 125°C V <sub>CE</sub> = 350 V, I <sub>C</sub> = 100 A, V <sub>GE</sub> = ±15 V, R <sub>G</sub> = 10 Ω	t <sub>d(on)</sub>	—	73	—	ns
Rise Time		t <sub>r</sub>	—	49	—	
Turn-off Delay Time		t <sub>d(off)</sub>	—	114	—	
Fall Time		t <sub>f</sub>	—	29	—	
Turn-on Switching Loss per Pulse		E <sub>on</sub>	—	1.95	—	mJ
Turn-off Switching Loss per Pulse		E <sub>off</sub>	—	2.22	—	
Input Capacitance	V <sub>CE</sub> = 25 V, V <sub>GE</sub> = 0 V, f = 10 kHz	C <sub>ies</sub>	—	4877	—	pF
Output Capacitance		C <sub>oes</sub>	—	77	—	
Reverse Transfer Capacitance		C <sub>res</sub>	—	21	—	
Total Gate Charge	V <sub>CE</sub> = 480 V, I <sub>C</sub> = 50 A, V <sub>GE</sub> = 15 V	Q <sub>g</sub>	—	550	—	nC
Thermal Resistance – chip-to-heatsink	Thermal grease, Thickness < 100 μm, λ = 2.87 W/mK	R <sub>thJH</sub>	—	0.78	—	°C/W

## HALF BRIDGE DIODE CHARACTERISTICS

Diode Forward Voltage	I <sub>F</sub> = 30 A, T <sub>J</sub> = 25°C	V <sub>F</sub>	—	2.4	3.2	V
	I <sub>F</sub> = 30 A, T <sub>J</sub> = 175°C		—	1.8	—	
Reverse Recovery Time	T <sub>J</sub> = 25°C V <sub>CE</sub> = 350 V, I <sub>C</sub> = 100 A, V <sub>GE</sub> = ±15 V, R <sub>G</sub> = 10 Ω	t <sub>rr</sub>	—	53	—	ns
Reverse Recovery Charge		Q <sub>rr</sub>	—	1862	—	nC
Peak Reverse Recovery Current		I <sub>RRM</sub>	—	63	—	A
Peak Rate of Fall of Recovery Current		di/dt	—	2259	—	A/μs
Reverse Recovery Energy		E <sub>rr</sub>	—	371	—	μJ
Reverse Recovery Time	T <sub>J</sub> = 125°C V <sub>CE</sub> = 350 V, I <sub>C</sub> = 100 A, V <sub>GE</sub> = ±15 V, R <sub>G</sub> = 10 Ω	t <sub>rr</sub>	—	308	—	ns
Reverse Recovery Charge		Q <sub>rr</sub>	—	7290	—	nC
Peak Reverse Recovery Current		I <sub>RRM</sub>	—	95	—	A
Peak Rate of Fall of Recovery Current		di/dt	—	238	—	A/μs
Reverse Recovery Energy		E <sub>rr</sub>	—	2025	—	μJ
Thermal Resistance – chip-to-heatsink	Thermal grease, Thickness < 100 μm, λ = 2.87 W/mK	R <sub>thJH</sub>	—	1.2	—	°C/W

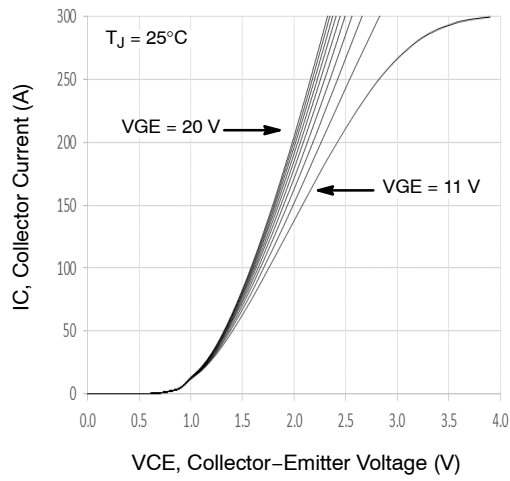
## THERMISTOR CHARACTERISTICS

Nominal Resistance		R <sub>25</sub>	—	22	—	kΩ
Nominal Resistance	T = 100°C	R <sub>100</sub>	—	1486	—	Ω
Deviation of R25		R/R	–5	—	5	%
Power Dissipation		P <sub>D</sub>	—	200	—	mW
Power Dissipation Constant			—	2	—	mW/K
B-value	B(25/50), tolerance ±3%		—	3950	—	K
B-value	B(25/100), tolerance ±3%		—	3998	—	K

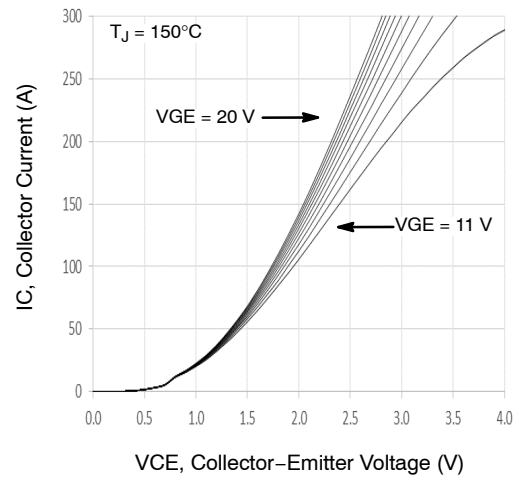
Product parametric performance is indicated in the Electrical Characteristics for the listed test conditions, unless otherwise noted. Product performance may not be indicated by the Electrical Characteristics if operated under different conditions.

# NXH100T120L3Q0S1NG

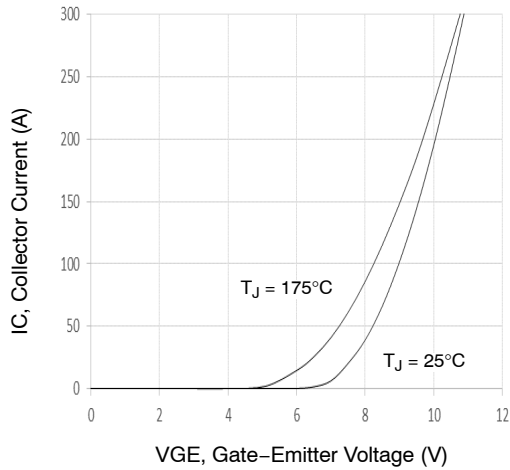
## TYPICAL CHARACTERISTICS – HALF BRIDGE IGBT AND DIODE



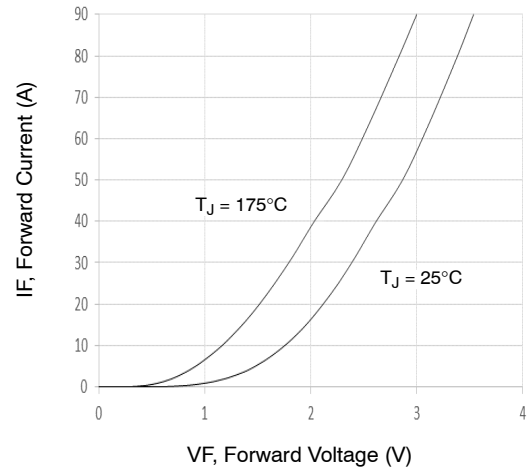
**Figure 2. Typical Output Characteristics**



**Figure 3. Typical Output Characteristics**



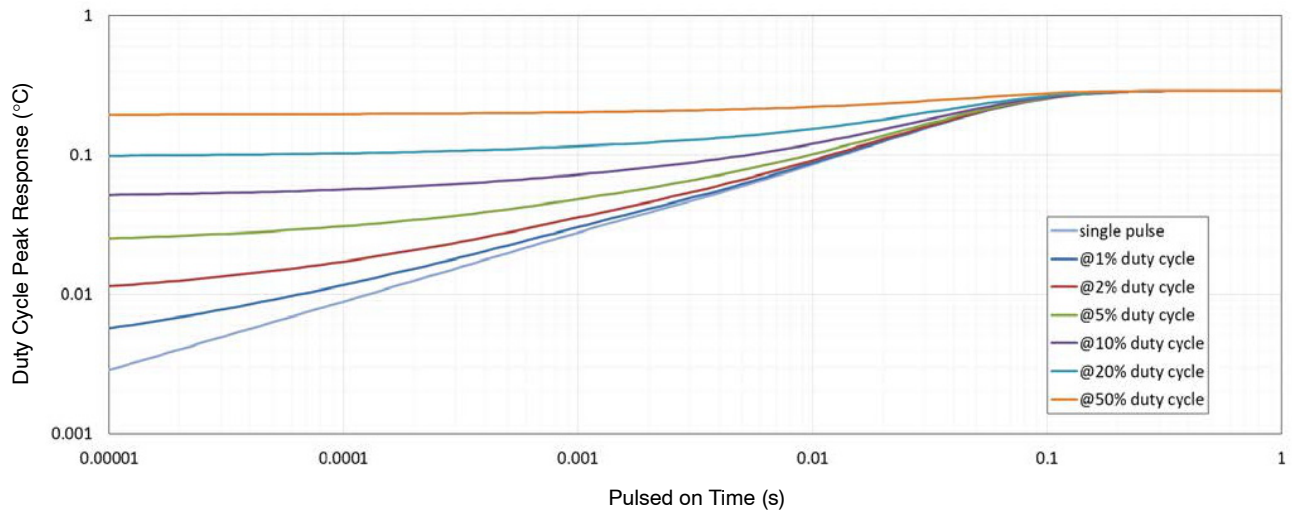
**Figure 4. Typical Transfer Characteristics**



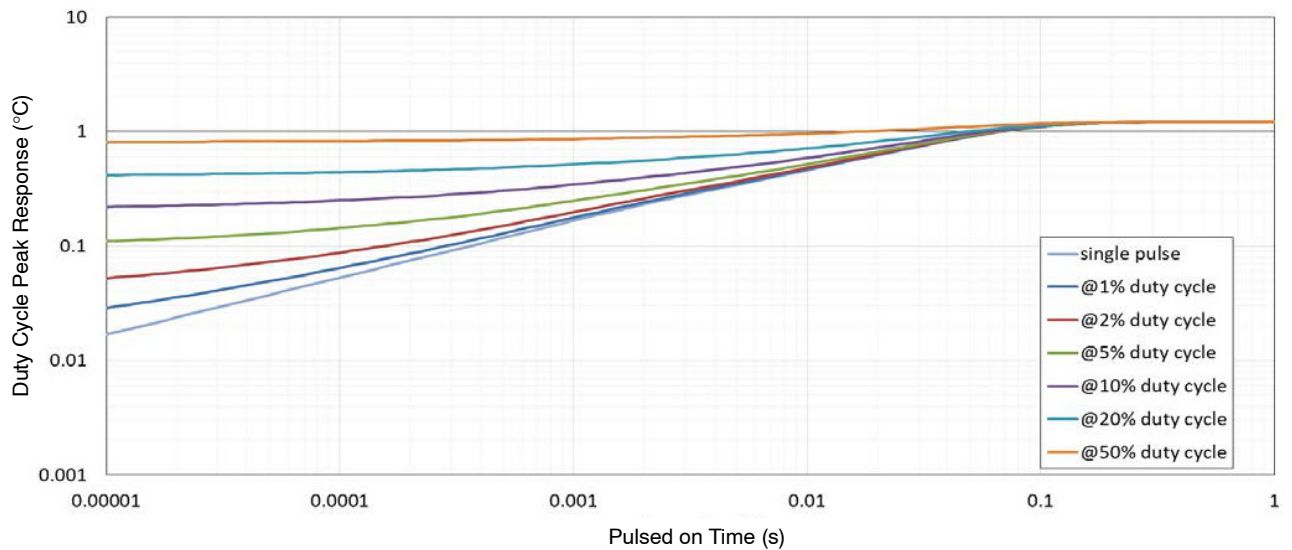
**Figure 5. Typical Diode Forward Characteristics**

# NXH100T120L3Q0S1NG

## TYPICAL CHARACTERISTICS – HALF BRIDGE IGBT AND DIODE (continued)



**Figure 6. Transient Thermal Impedance (Half Bridge IGBT)**



**Figure 7. Transient Thermal Impedance (Half Bridge Diode)**

## TYPICAL CHARACTERISTICS – HALF BRIDGE IGBT AND DIODE (continued)

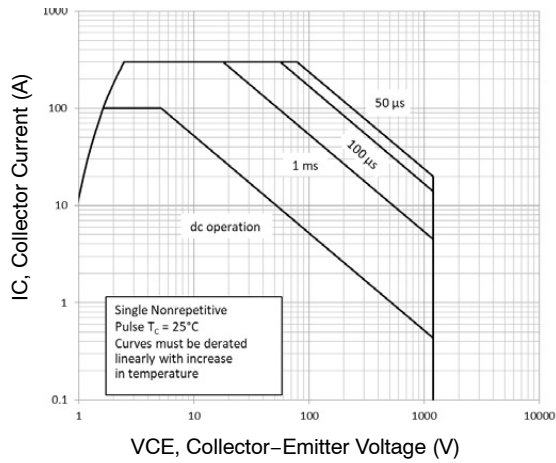


Figure 8. FBSOA

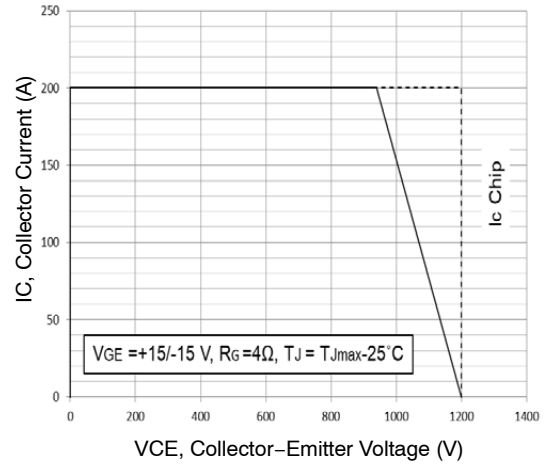


Figure 9. RBSOA

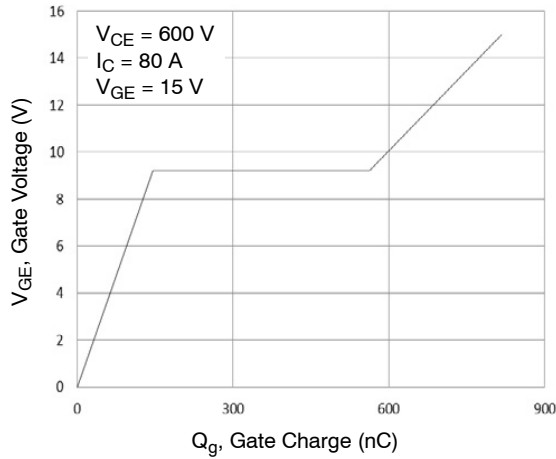


Figure 10. Gate Voltage vs. Gate Charge



TYPICAL CHARACTERISTICS – NEUTRAL POINT IGBT AND DIODE

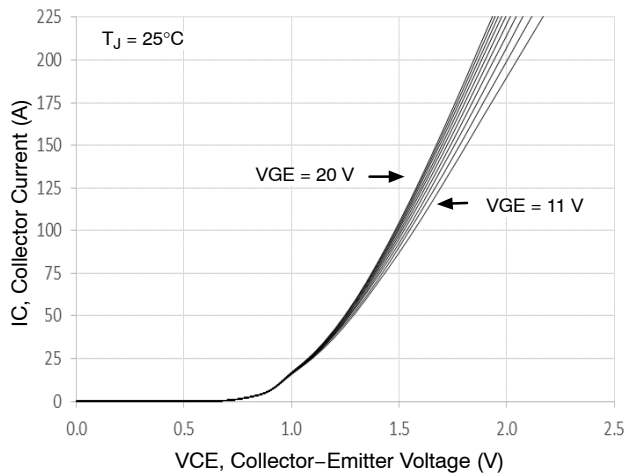


Figure 11. Typical Output Characteristics

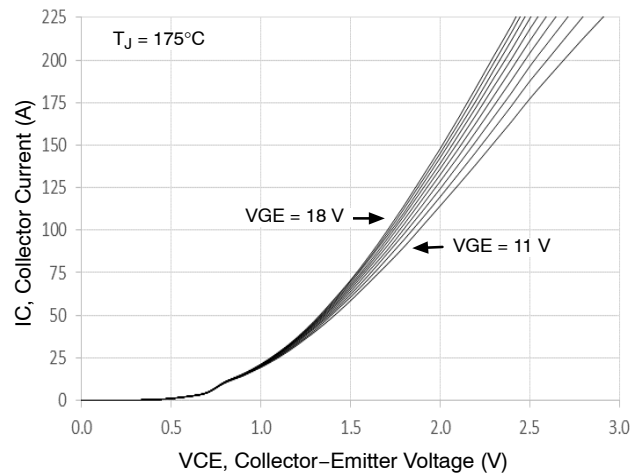


Figure 12. Typical Output Characteristics

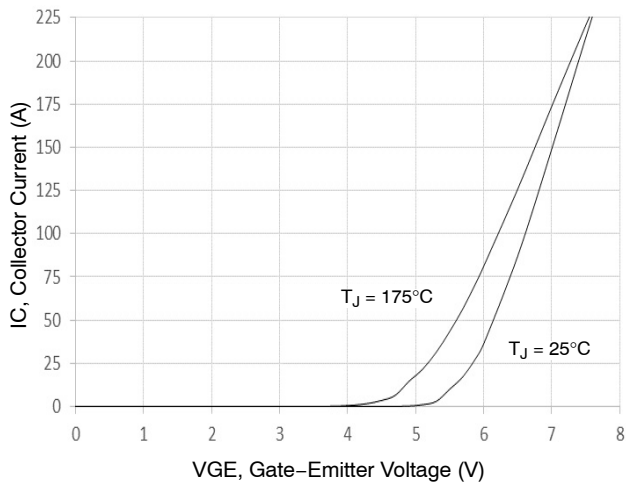


Figure 13. Typical Transfer Characteristics

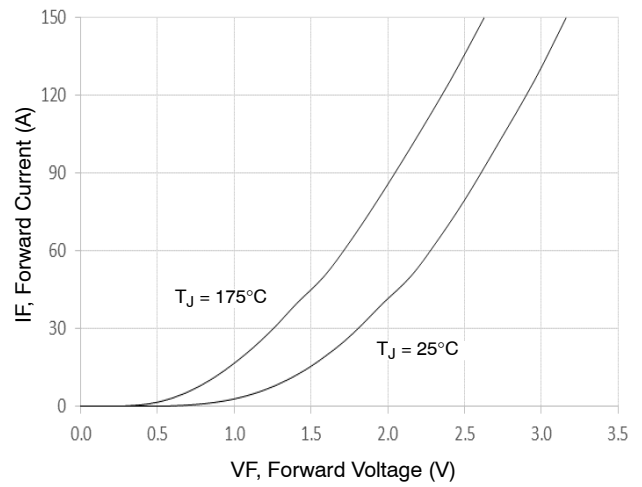
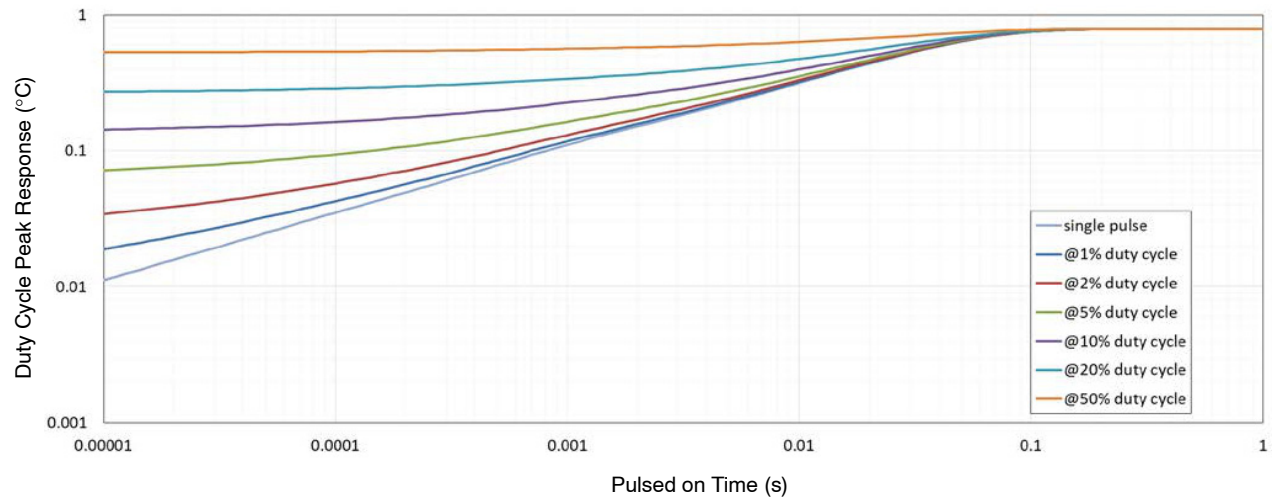


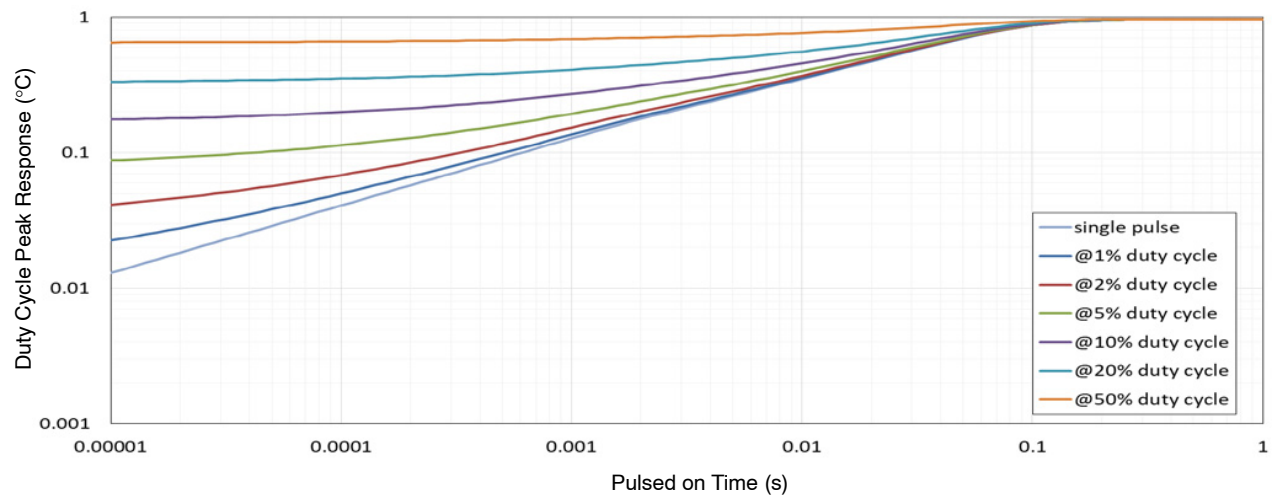
Figure 14. Typical Diode Forward Characteristics

# NXH100T120L3Q0S1NG

## TYPICAL CHARACTERISTICS – NEUTRAL POINT IGBT AND DIODE (continued)

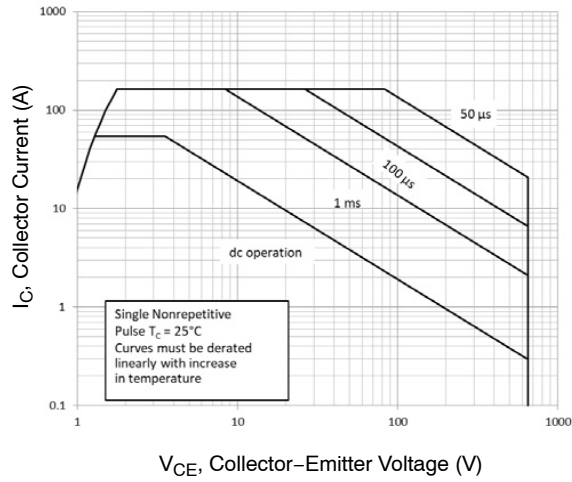


**Figure 15. Transient Thermal Impedance (Neutral Point IGBT)**

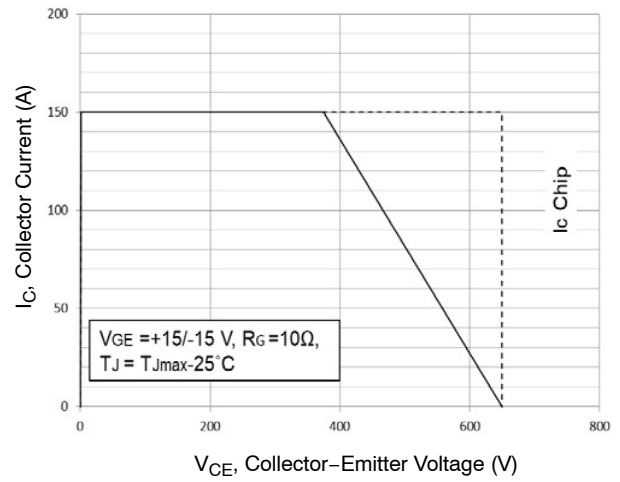


**Figure 16. Transient Thermal Impedance (Neutral Point Diode)**

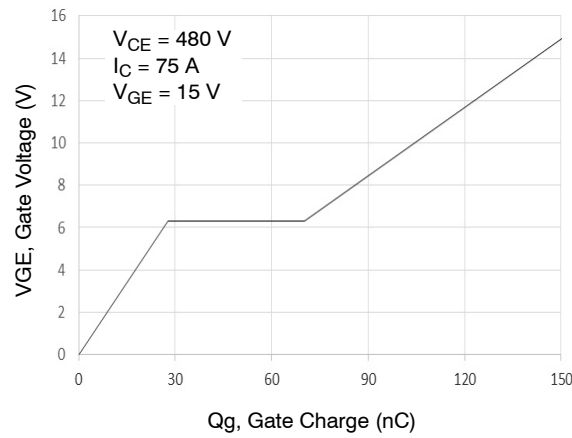
## TYPICAL CHARACTERISTICS – NEUTRAL POINT IGBT AND DIODE (continued)



**Figure 17. FBSOA**



**Figure 18. RBSOA**



**Figure 19. Gate Voltage vs. Gate Charge**

TYPICAL CHARACTERISTICS – HALF BRIDGE IGBT COMUTATES NEUTRAL POINT DIODE

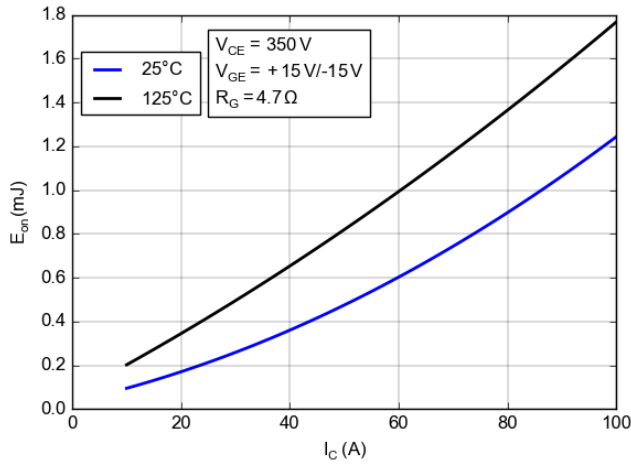


Figure 20. Typical Turn On Loss vs.  $I_C$

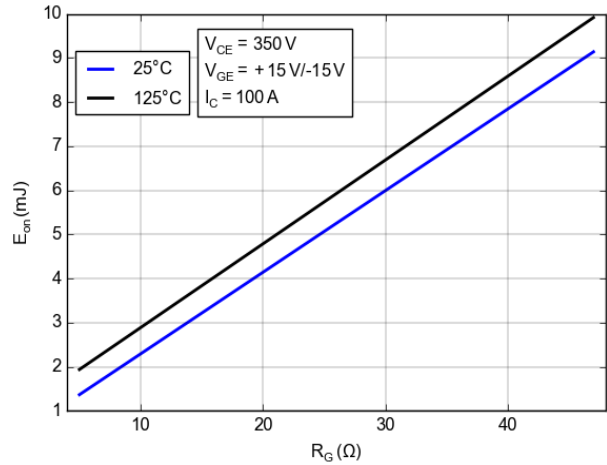


Figure 21. Typical Turn On Loss vs.  $R_G$

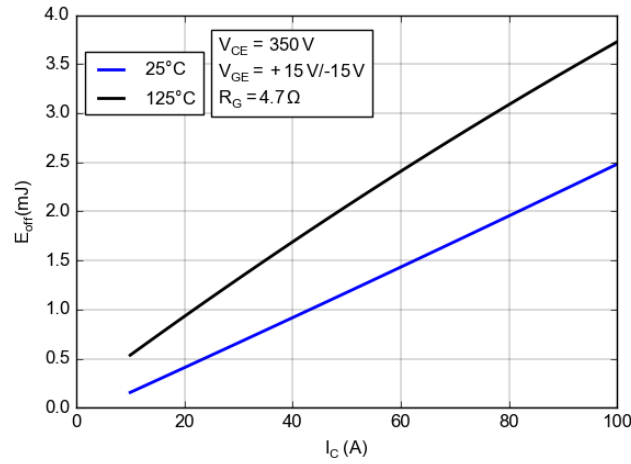


Figure 22. Typical Turn Off Loss vs.  $I_C$

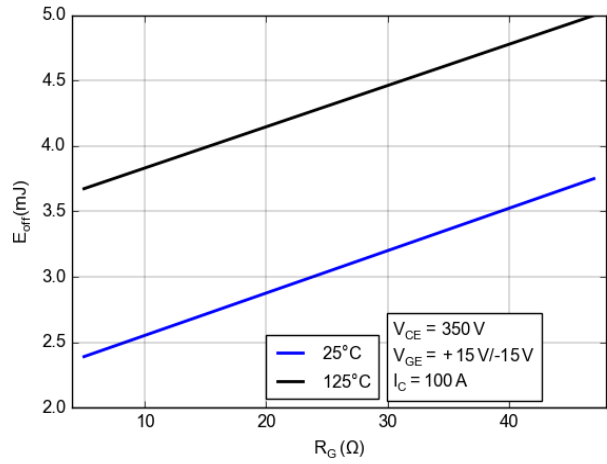


Figure 23. Typical Turn Off Loss vs.  $R_G$

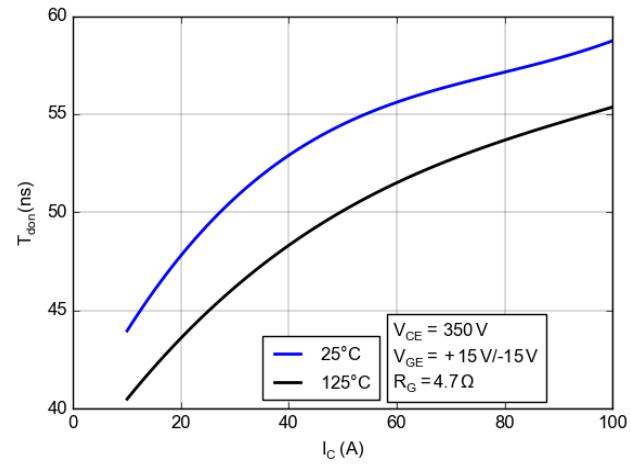


Figure 24. Typical Switching Times  $T_{don}$  vs.  $I_C$

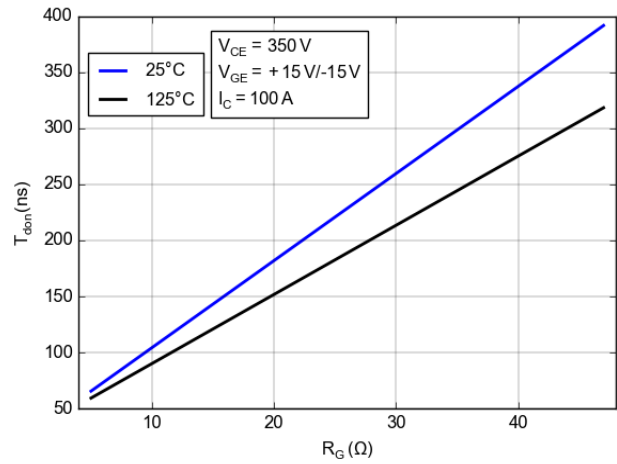
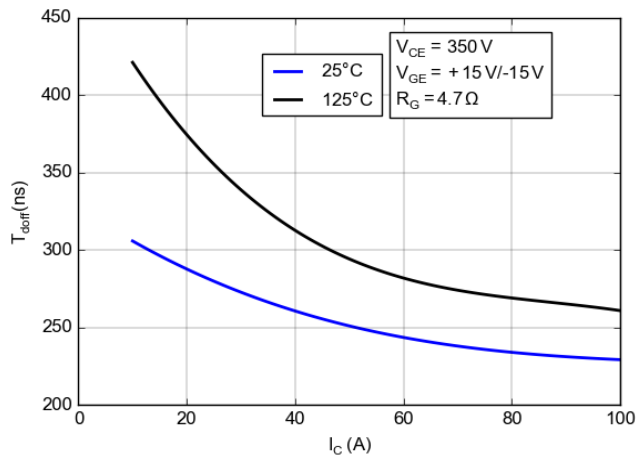
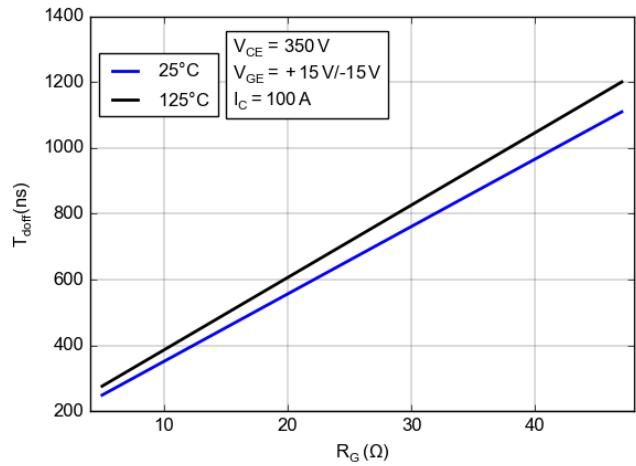


Figure 25. Typical Switching Times  $T_{don}$  vs.  $R_G$

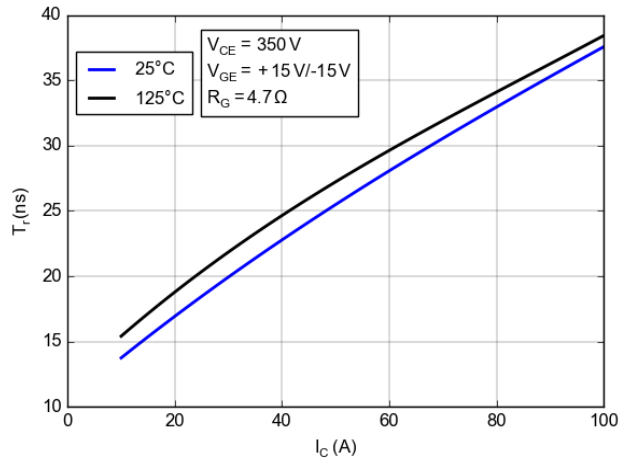
## TYPICAL CHARACTERISTICS – HALF BRIDGE IGBT COMUTATES NEUTRAL POINT DIODE (continued)



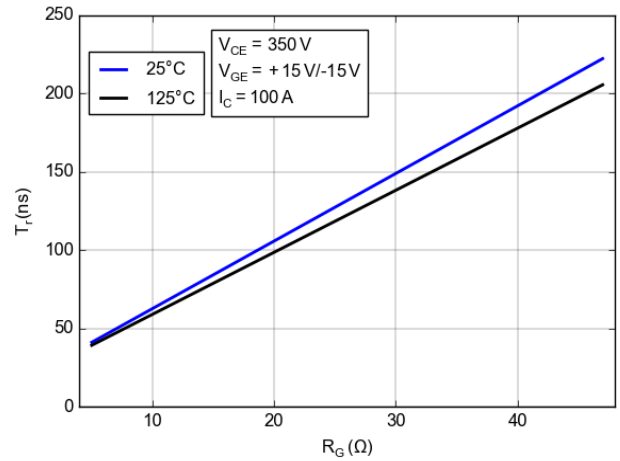
**Figure 26. Typical Switching Times Tdoff vs.  $I_C$**



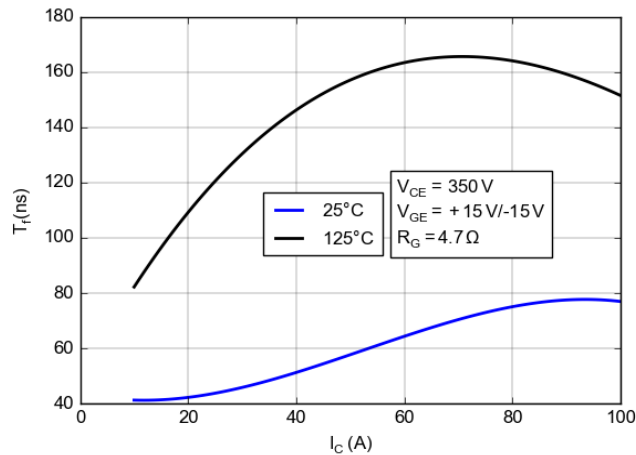
**Figure 27. Typical Switching Times Tdoff vs.  $R_G$**



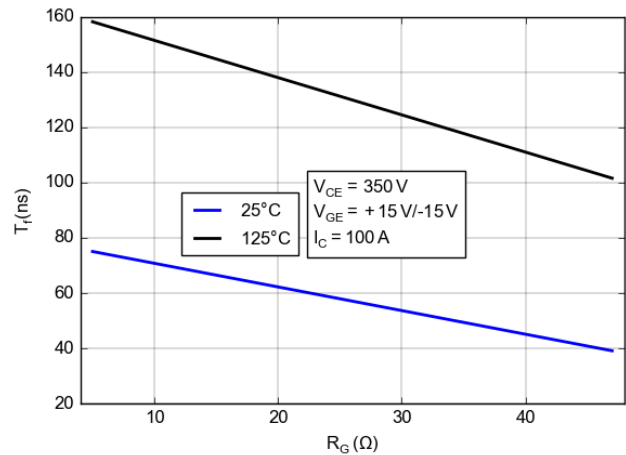
**Figure 28. Typical Switching Times Tron vs.  $I_C$**



**Figure 29. Typical Switching Times Tron vs.  $R_G$**



**Figure 30. Typical Switching Times Tf vs.  $I_C$**



**Figure 31. Typical Switching Times Tf vs.  $R_G$**

TYPICAL CHARACTERISTICS – HALF BRIDGE IGBT COMUTATES NEUTRAL POINT DIODE (continued)

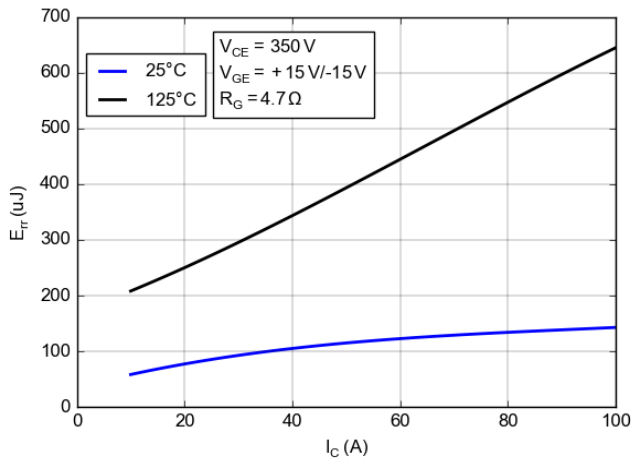


Figure 32. Typical Reverse Recovery Energy vs.  $I_C$

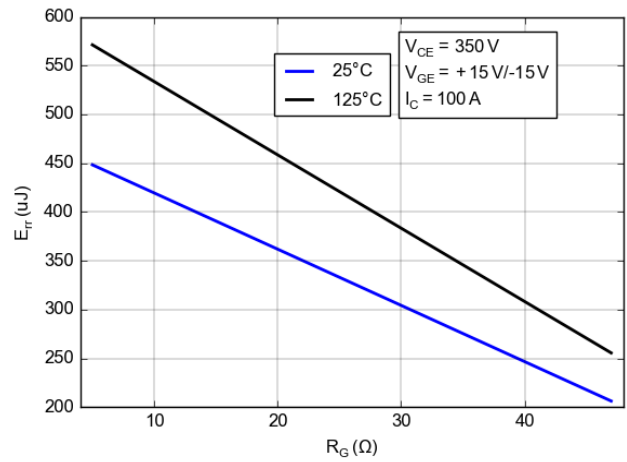


Figure 33. Typical Reverse Recovery Energy vs.  $R_G$

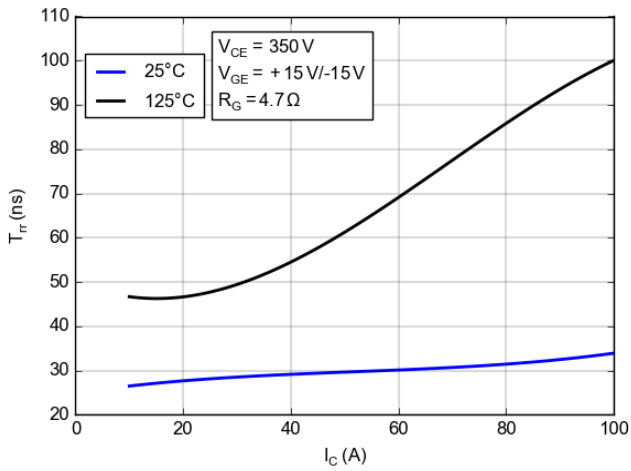


Figure 34. Typical Reverse Recovery Time vs.  $I_C$

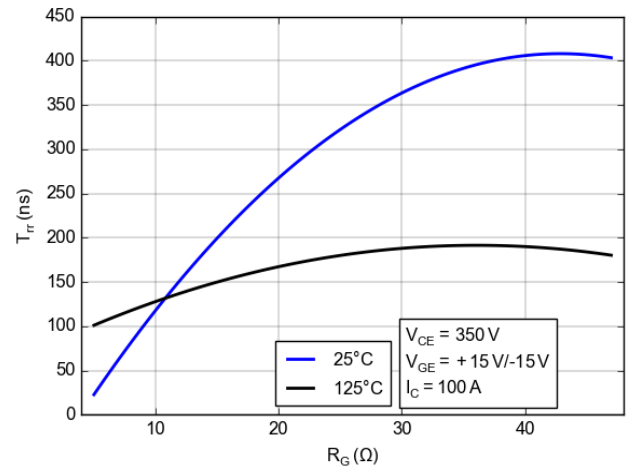


Figure 35. Typical Reverse Recovery Time vs.  $R_G$

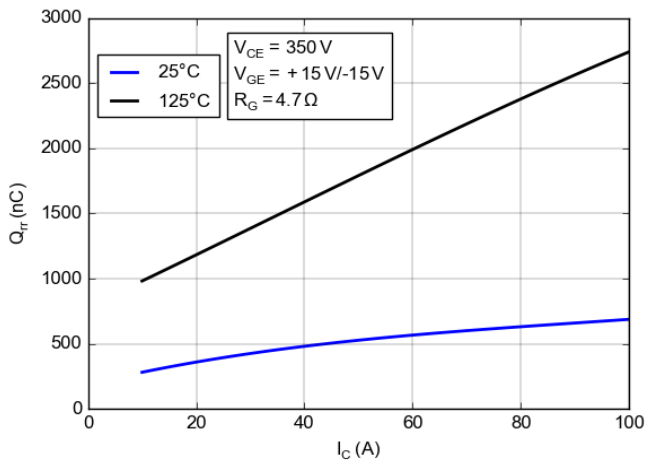


Figure 36. Typical Reverse Recovery Charge vs.  $I_C$

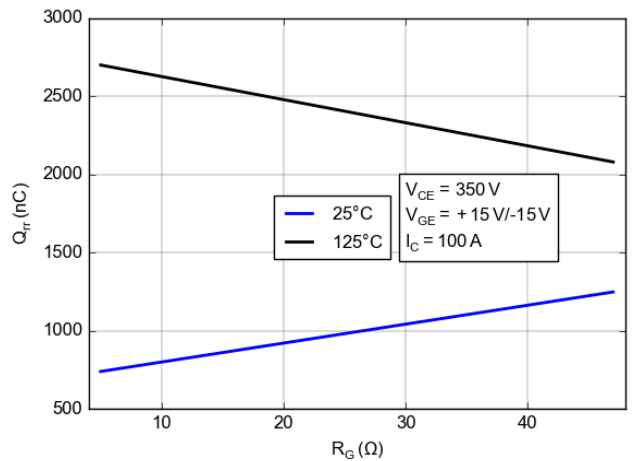


Figure 37. Typical Reverse Recovery Charge vs.  $R_G$

## TYPICAL CHARACTERISTICS – HALF BRIDGE IGBT COMUTATES NEUTRAL POINT DIODE (continued)

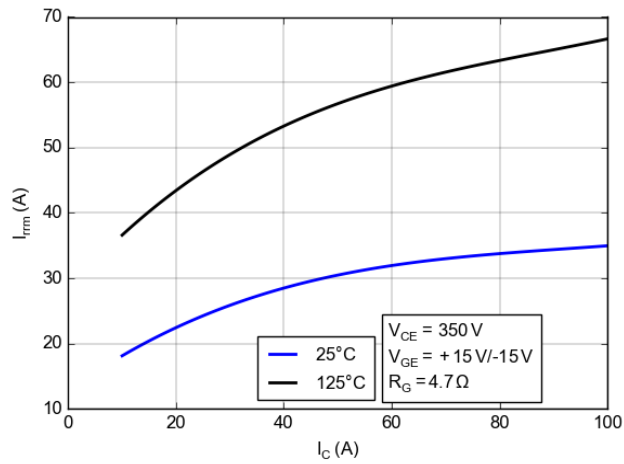


Figure 38. Typical Reverse Recovery Current vs.  $I_C$

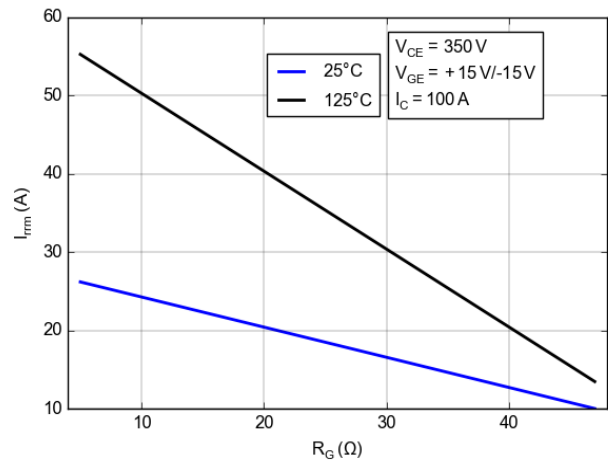


Figure 39. Typical Reverse Recovery Current vs.  $R_G$

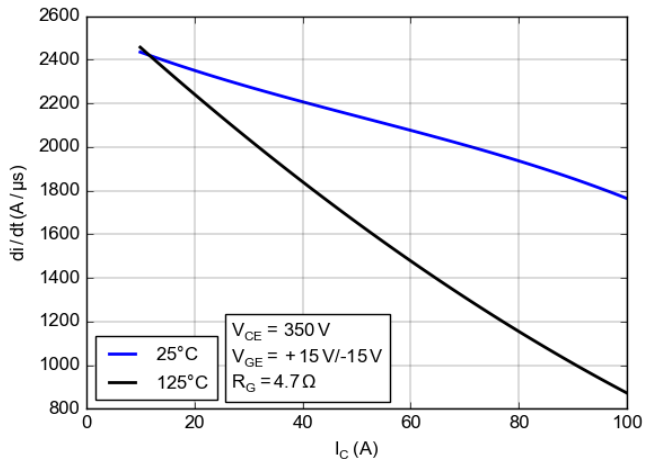


Figure 40. Typical  $di/dt$  vs.  $I_C$

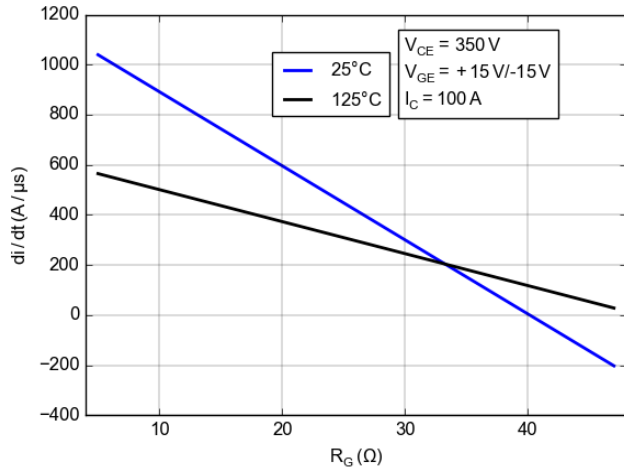


Figure 41. Typical  $di/dt$  vs.  $R_G$

# NXH100T120L3Q0S1NG

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

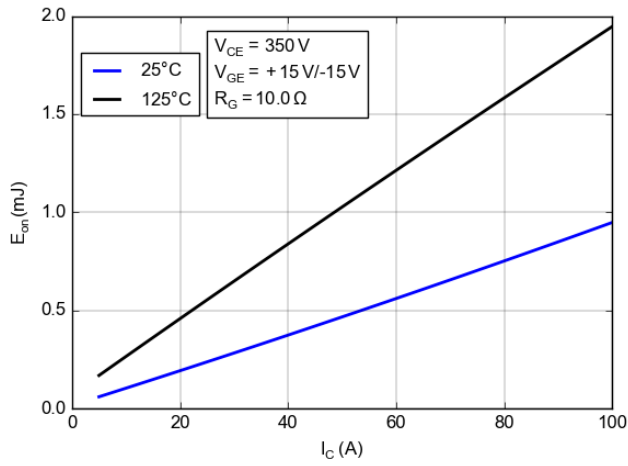


Figure 42. Typical Turn On Loss vs.  $I_C$

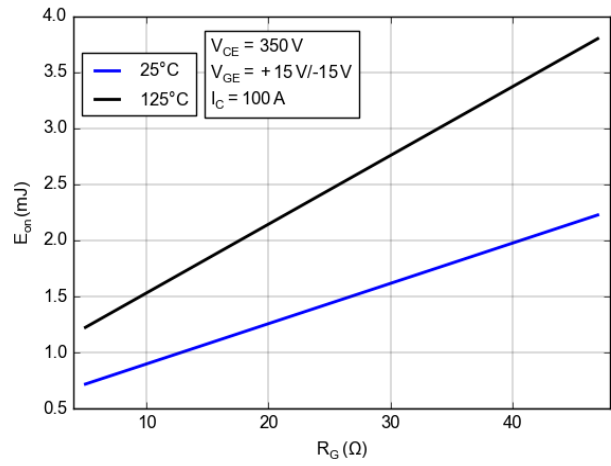


Figure 43. Typical Turn On Loss vs.  $R_G$

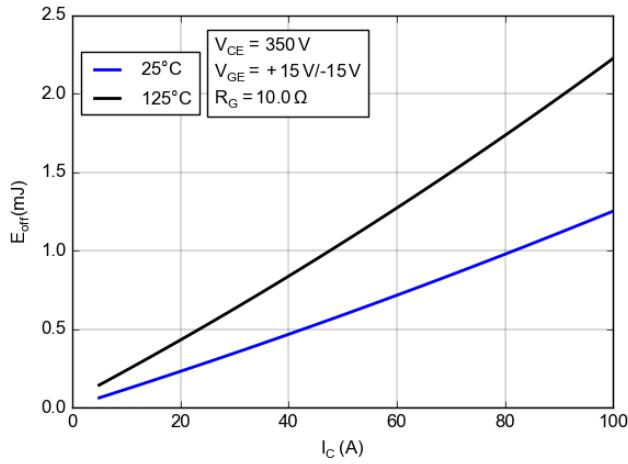


Figure 44. Typical Turn Off Loss vs.  $I_C$

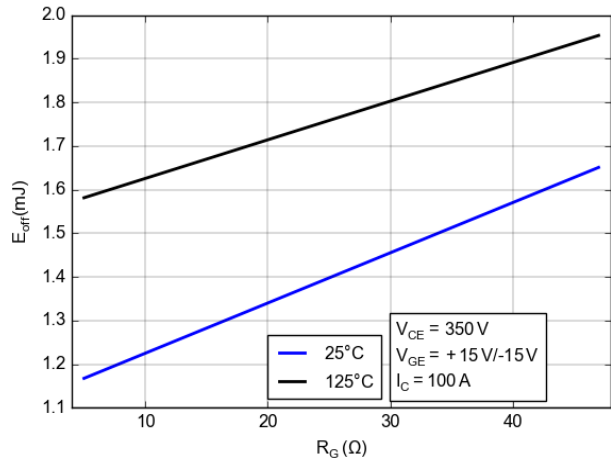


Figure 45. Typical Turn Off Loss vs.  $R_G$

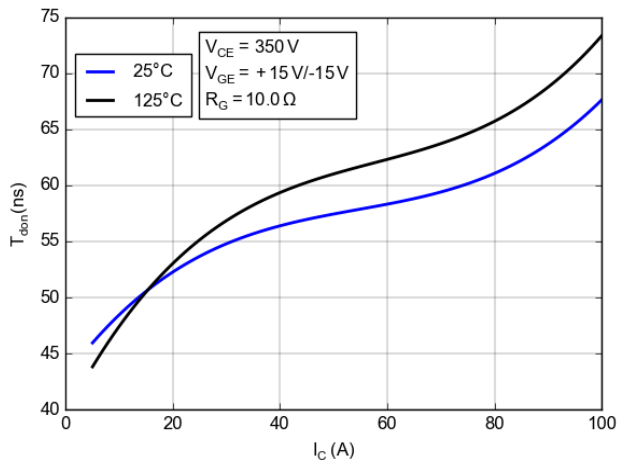


Figure 46. Typical Switching Times  $T_{don}$  vs.  $I_C$

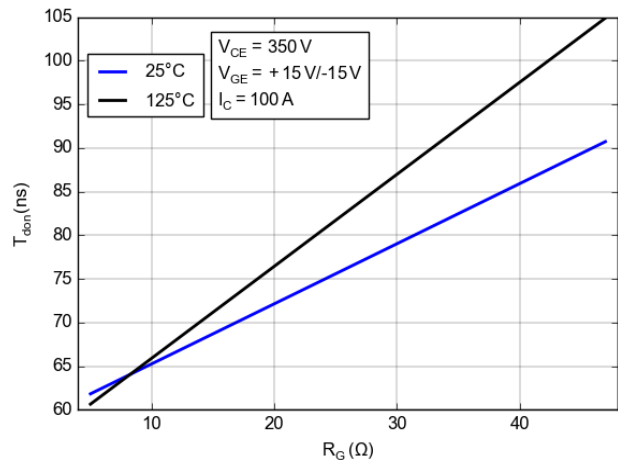


Figure 47. Typical Switching Times  $T_{don}$  vs.  $R_G$



## TYPICAL CHARACTERISTICS – NEUTRAL POINT IGBT COMUTATES HALF BRIDGE DIODE (continued)

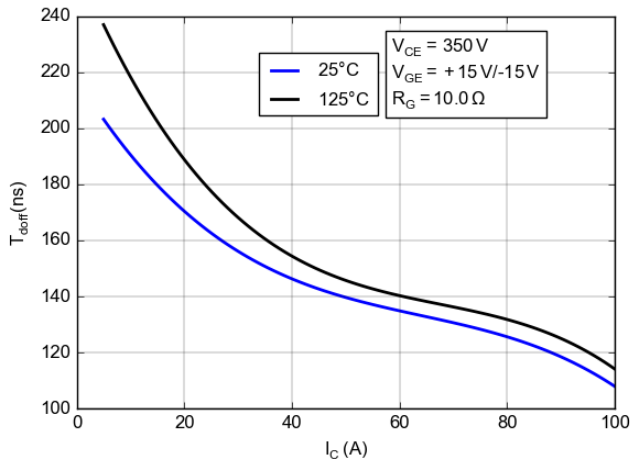


Figure 48. Typical Switching Times Tdoff vs.  $I_C$

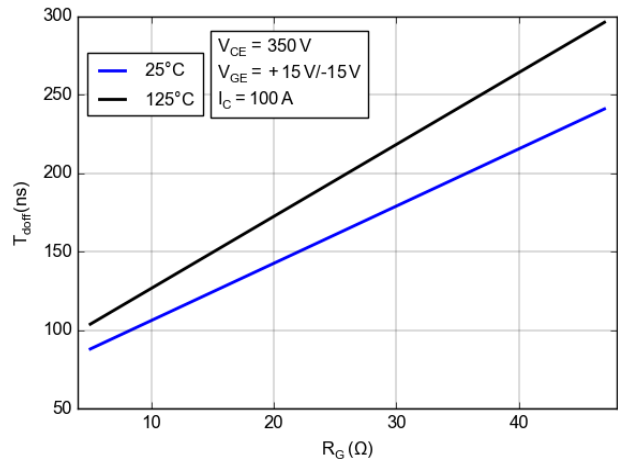


Figure 49. Typical Switching Times Tdoff vs.  $R_G$

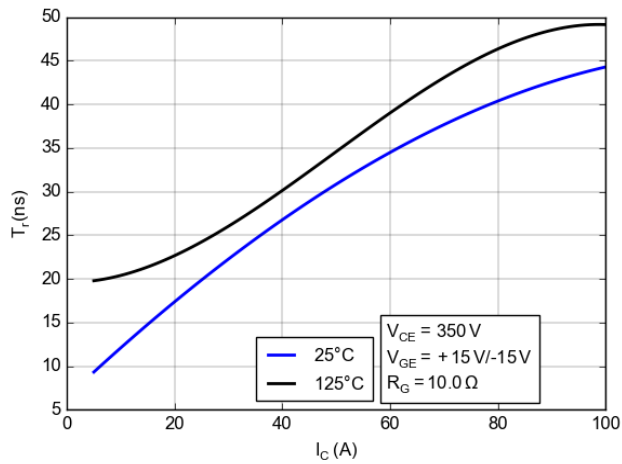


Figure 50. Typical Switching Times Tron vs.  $I_C$

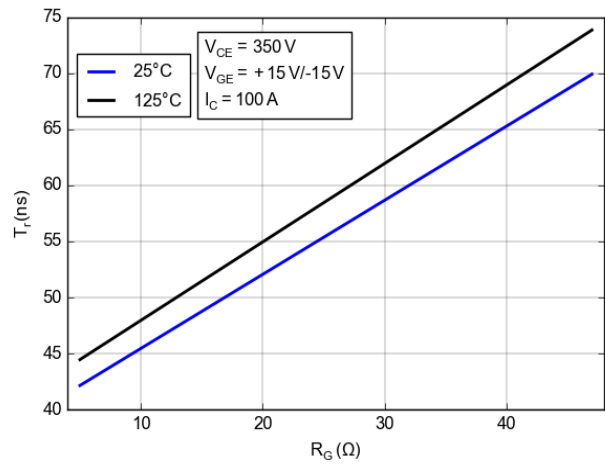


Figure 51. Typical Switching Times Tron vs.  $R_G$

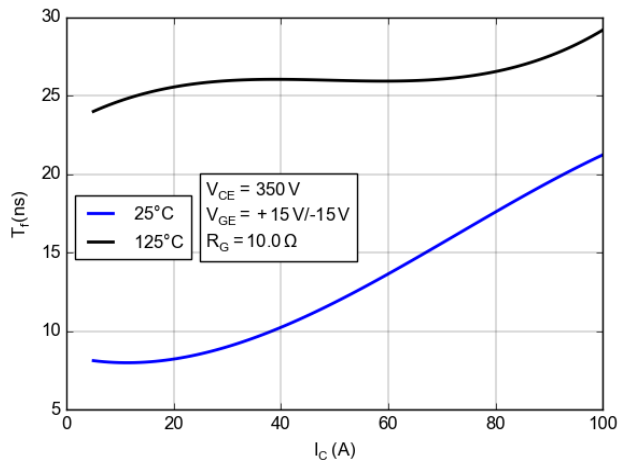


Figure 52. Typical Switching Times Tf vs.  $I_C$

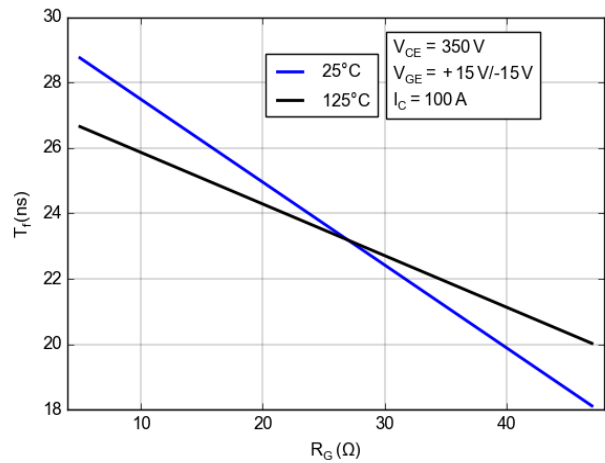


Figure 53. Typical Switching Times Tf vs.  $R_G$

TYPICAL CHARACTERISTICS – NEUTRAL POINT IGBT COMUTATES HALF BRIDGE DIODE (continued)

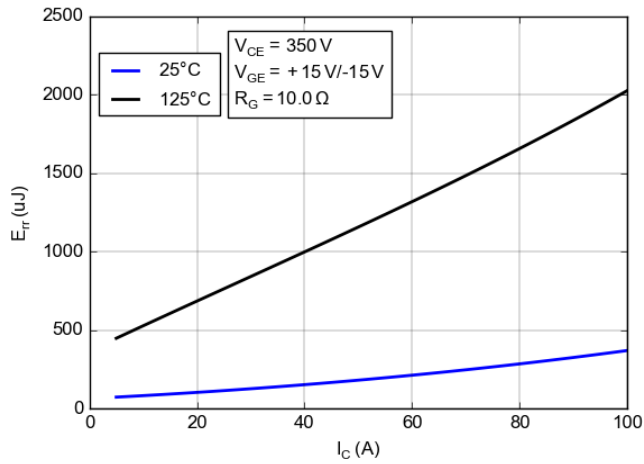


Figure 54. Typical Reverse Recovery Energy vs.  $I_C$

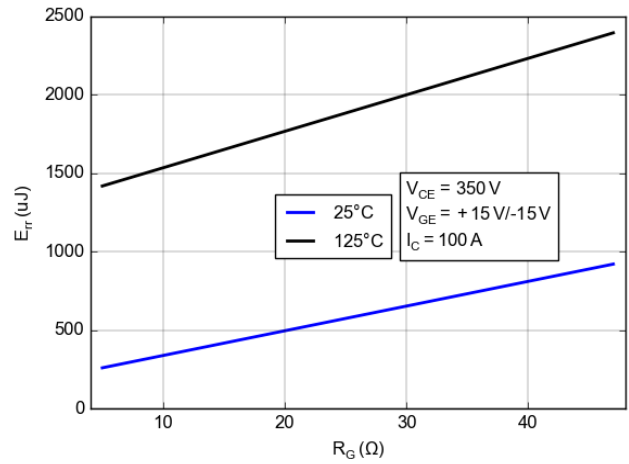


Figure 55. Typical Reverse Recovery Energy vs.  $R_G$

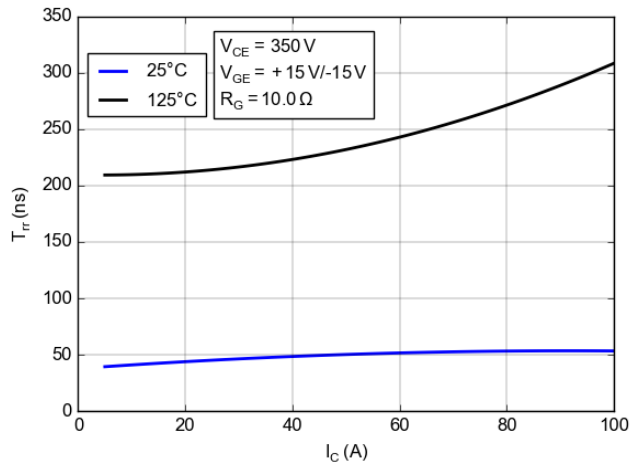


Figure 56. Typical Reverse Recovery Time vs.  $I_C$

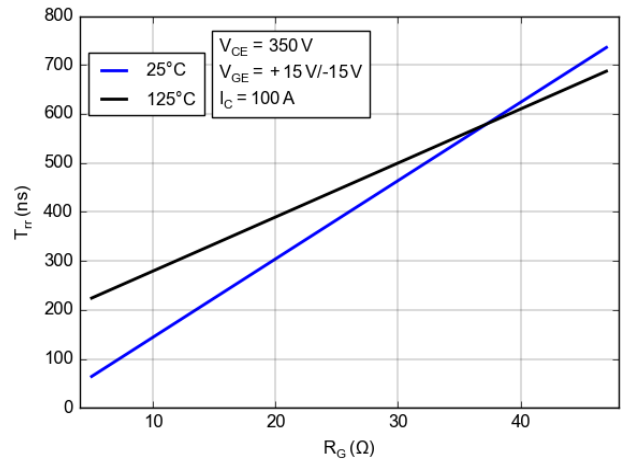


Figure 57. Typical Reverse Recovery Time vs.  $R_G$

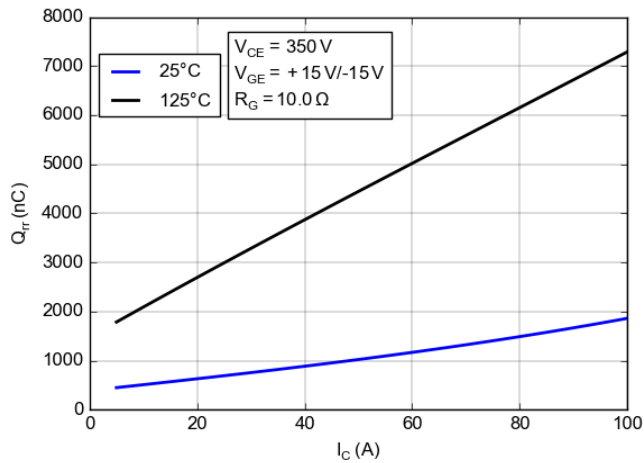


Figure 58. Typical Reverse Recovery Charge vs.  $I_C$

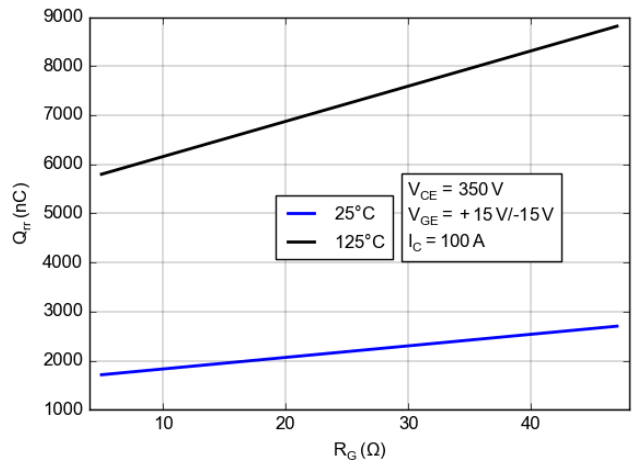


Figure 59. Typical Reverse Recovery Charge vs.  $R_G$

TYPICAL CHARACTERISTICS – NEUTRAL POINT IGBT COMUTATES HALF BRIDGE DIODE (continued)

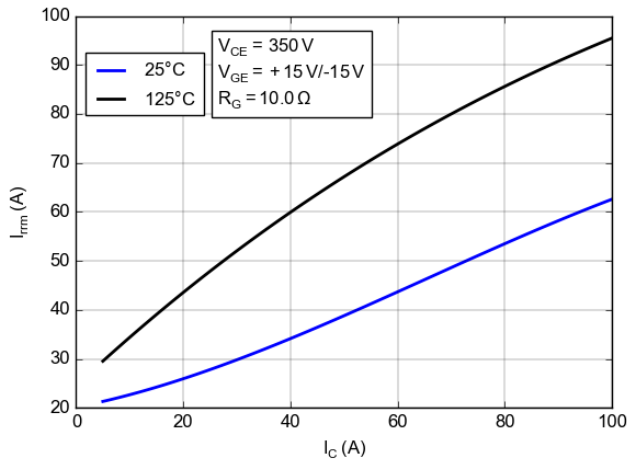


Figure 60. Typical Reverse Recovery Current vs.  $I_C$

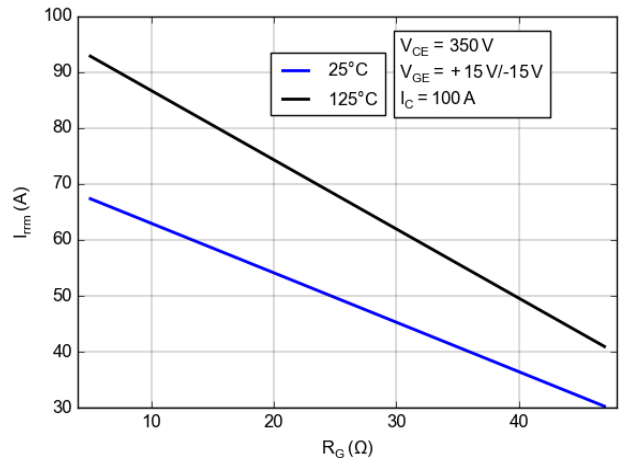


Figure 61. Typical Reverse Recovery Current vs.  $R_G$

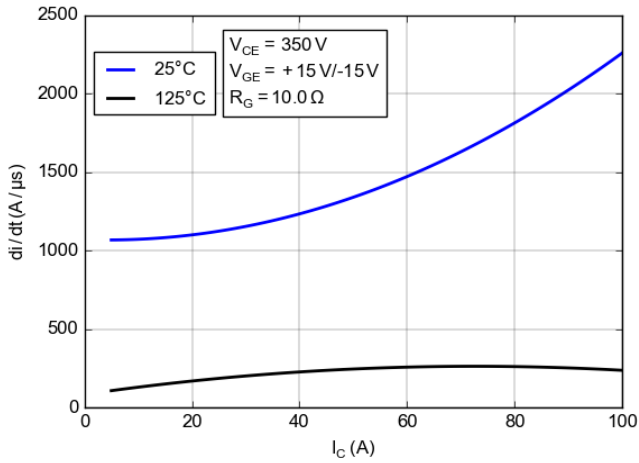


Figure 62. Typical  $di/dt$  vs.  $I_C$

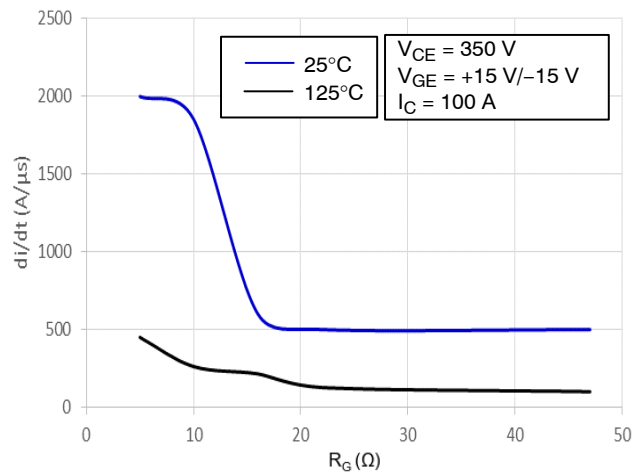


Figure 63. Typical  $di/dt$  vs.  $R_G$

# NXH100T120L3Q0S1NG

## TYPICAL CHARACTERISTICS – THERMISTOR

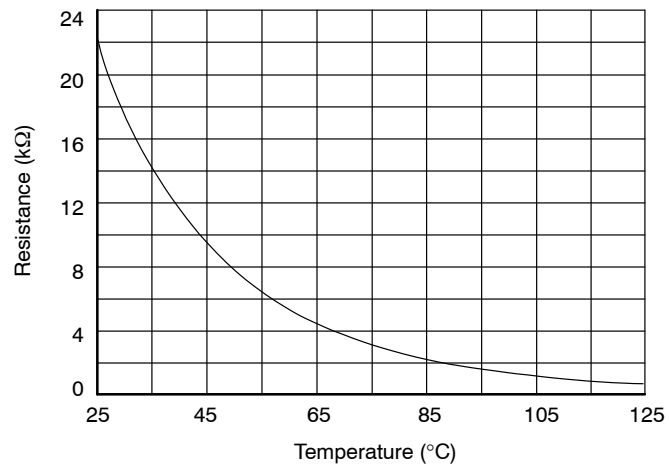


Figure 64. Thermistor Characteristics

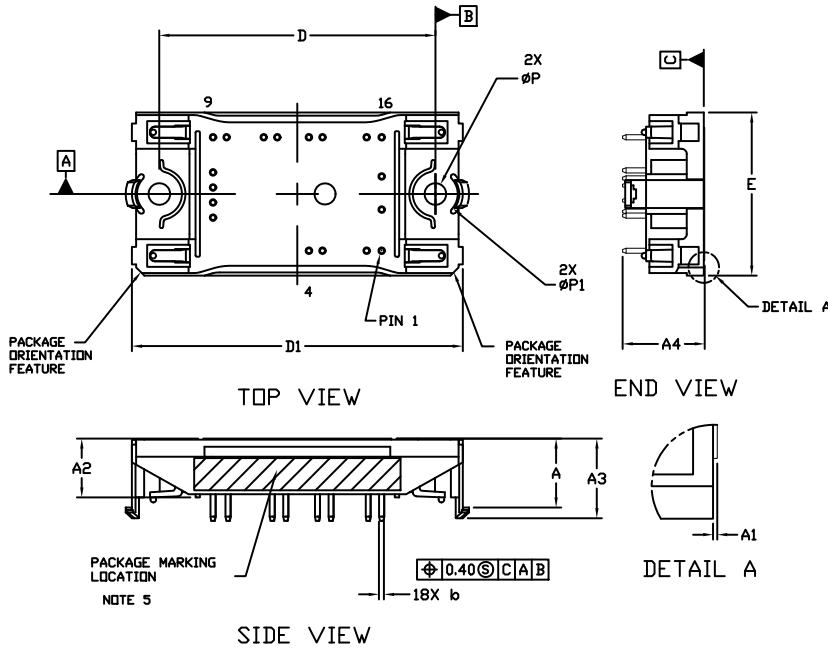
### PACKAGE MARKING AND ORDERING INFORMATION

Orderable Part Number	Marking	Package	Shipping
NXH100T120L3Q0S1NG Q0PACK	NXH100T120L3Q0S1NG	Q0PACK – Case 180AH (Pb-Free and Halide-Free)	24 Units / Blister Tray

# NXH100T120L3Q0S1NG

## PACKAGE DIMENSIONS

PIM18, 55x32.5 / Q0PACK  
CASE 180AH  
ISSUE B



### NOTES:

1. DIMENSIONING AND TOLERANCING PER ASME Y14.5M, 2009.
2. CONTROLLING DIMENSION: MILLIMETERS
3. DIMENSION b APPLIES TO THE PLATED TERMINALS AND IS MEASURED BETWEEN 1.00 AND 3.00 FROM THE TERMINAL TIP.
4. POSITION OF THE CENTER OF THE TERMINALS IS DETERMINED FROM DATUM B THE CENTER OF DIMENSION D, X DIRECTION, AND FROM DATUM A, Y DIRECTION. POSITIONAL TOLERANCE, AS NOTED IN DRAWING, APPLIES TO EACH TERMINAL IN BOTH DIRECTIONS.
5. PACKAGE MARKING IS LOCATED AS SHOWN ON THE SIDE OPPOSITE THE PACKAGE ORIENTATION FEATURES.

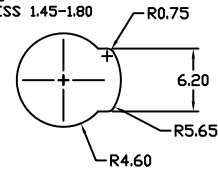
DIM	MILLIMETERS	
	MIN.	NOM.
A	13.50	13.90
A1	0.10	0.30
A2	11.50	11.90
A3	15.65	16.05
A4	16.35	REF
b	0.95	1.05
D	54.80	55.20
D1	65.60	66.20
E	32.20	32.80
P	4.20	4.40
P1	8.90	9.10

### MOUNTING HOLE POSITION

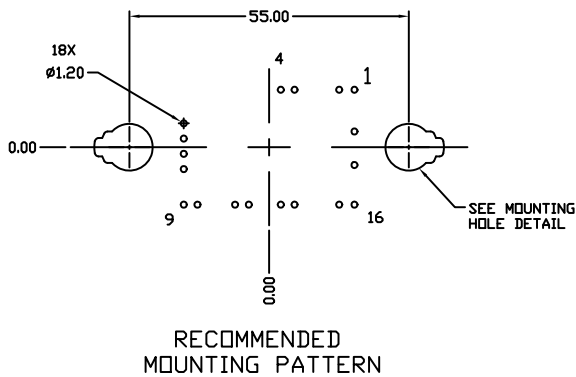
NOTE 4

PIN	PIN POSITION		PIN	PIN POSITION		PIN	PIN POSITION		PIN	PIN POSITION	
	X	Y		X	Y		X	Y		X	Y
1	16.80	11.30	10	-14.10	-10.70	1	16.80	-11.30	10	-14.10	10.70
2	13.80	11.30	11	-6.70	-10.70	2	13.80	-11.30	11	-6.70	10.70
3	5.00	11.30	12	-4.00	-10.70	3	5.00	-11.30	12	-4.00	10.70
4	2.30	11.30	13	2.30	-10.70	4	2.30	-11.30	13	2.30	10.70
5	-16.80	4.70	14	5.00	-10.70	5	-16.80	-4.70	14	5.00	10.70
6	-16.80	1.70	15	13.80	-10.70	6	-16.80	-1.70	15	13.80	10.70
7	-16.80	-1.30	16	16.80	-10.70	7	-16.80	1.30	16	16.80	10.70
8	-16.80	-4.30	17	16.80	-3.50	8	-16.80	4.30	17	16.80	3.50
9	-16.80	-10.70	18	16.80	3.10	9	-16.80	10.70	18	16.80	-3.10

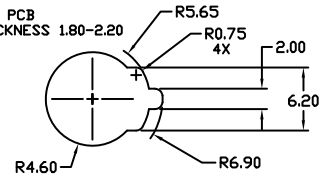
FOR PCB THICKNESS 1.45-1.80



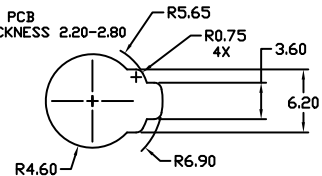
### MOUNTING FOOTPRINT ON PAGE 2




FOR PCB THICKNESS 1.80-2.20



FOR PCB THICKNESS 2.20-2.80



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