

NXH011F120M3F2PTHG

PIN FUNCTION DESCRIPTION

Pin	Name	Description
1	TH1	Thermistor Connection 1
2	TH2	Thermistor Connection 2
3	AC1	Center point of full bridge 1
4	AC1	Center point of full bridge 1
5	AC1	Center point of full bridge 1
6	AC1	Center point of full bridge 1
7	G1	M1 Gate (High side switch)
8	S1	M1 Kelvin Source (High side switch)
9	G3	M3 Gate (High side switch)
10	S3	M3 Kelvin Source (High side switch)
11	AC2	Center point of full bridge 2
12	AC2	Center point of full bridge 2
13	AC2	Center point of full bridge 2
14	AC2	Center point of full bridge 2
15	G4	M4 Gate (Low side switch)
16	S4	M4 Kelvin Source (Low side switch)
17	DC-2	DC Negative Bus connection
18	DC-2	DC Negative Bus connection
19	DC-2	DC Negative Bus connection
20	DC-2	DC Negative Bus connection
21	DC+	DC Positive Bus connection
22	DC+	DC Positive Bus connection
23	DC+	DC Positive Bus connection
24	DC+	DC Positive Bus connection
25	DC+	DC Positive Bus connection
26	DC+	DC Positive Bus connection
27	DC+	DC Positive Bus connection
28	DC+	DC Positive Bus connection
29	DC-1	DC Negative Bus connection
30	DC-1	DC Negative Bus connection
31	DC-1	DC Negative Bus connection
32	DC-1	DC Negative Bus connection
33	S2	Q2 Kelvin Source (Low side switch)
34	G2	Q2 Gate (Low side switch)

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MAXIMUM RATINGS

Rating	Symbol	Value	Unit
SiC MOSFET			
Drain–Source Voltage	V_{DSS}	1200	V
Gate–Source Voltage	V_{GS}	+22/–10	V
Continuous Drain Current @ $T_c = 80^\circ\text{C}$ ($T_J = 175^\circ\text{C}$)	I_D	105	A
Pulsed Drain Current ($T_J = 175^\circ\text{C}$)	I_{Dpulse}	316	A
Maximum Power Dissipation ($T_J = 175^\circ\text{C}$)	P_{tot}	244	W
Minimum Operating Junction Temperature	T_{JMIN}	–40	$^\circ\text{C}$
Maximum Operating Junction Temperature	T_{JMAX}	175	

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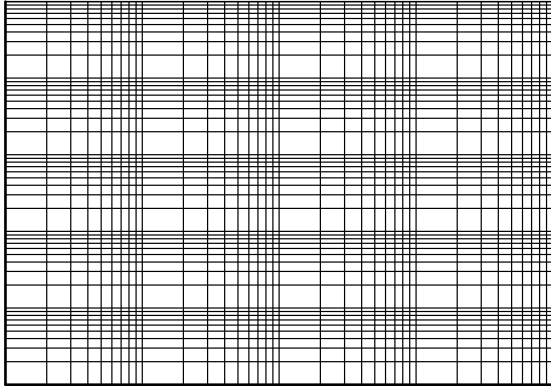
ELECTRICAL CHARACTERISTICS ($T_J = 25^\circ\text{C}$ unless otherwise noted) (continued)

Parameter	Test Conditions	Symbol	Min	Typ	Max	Unit
SiC MOSFET CHARACTERISTICS						
Turn-on Delay Time	$T_J = 25^\circ\text{C}$ $V_{DS} = 800\text{ V}, I_D = 100\text{ A}$ $V_{GS} = -3\text{ V} / 18\text{ V}, R_G = 3.9\ \Omega$	$t_{d(on)}$	–	30.9	–	ns
Rise Time		t_r	–	12.7	–	
Turn-off Delay Time		$t_{d(off)}$	–	110.5	–	
Fall Time		t_f	–	12.6	–	
Turn-on Switching Loss per Pulse		E_{ON}	–	1.52	–	mJ
Turn-off Switching Loss per Pulse		E_{OFF}	–	0.5	–	
Turn-on Delay Time	T					

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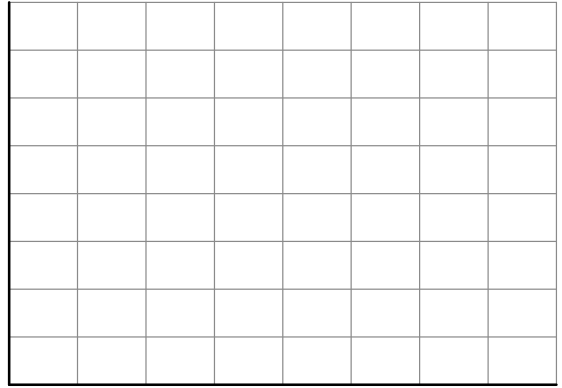
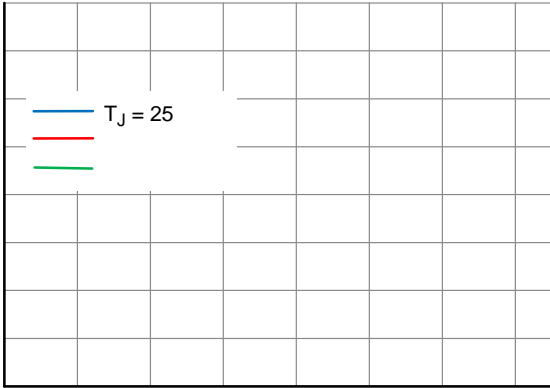
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TYPICAL CHARACTERISTIC (M1/M2 SiC MOSFET CHARACTERISTIC)



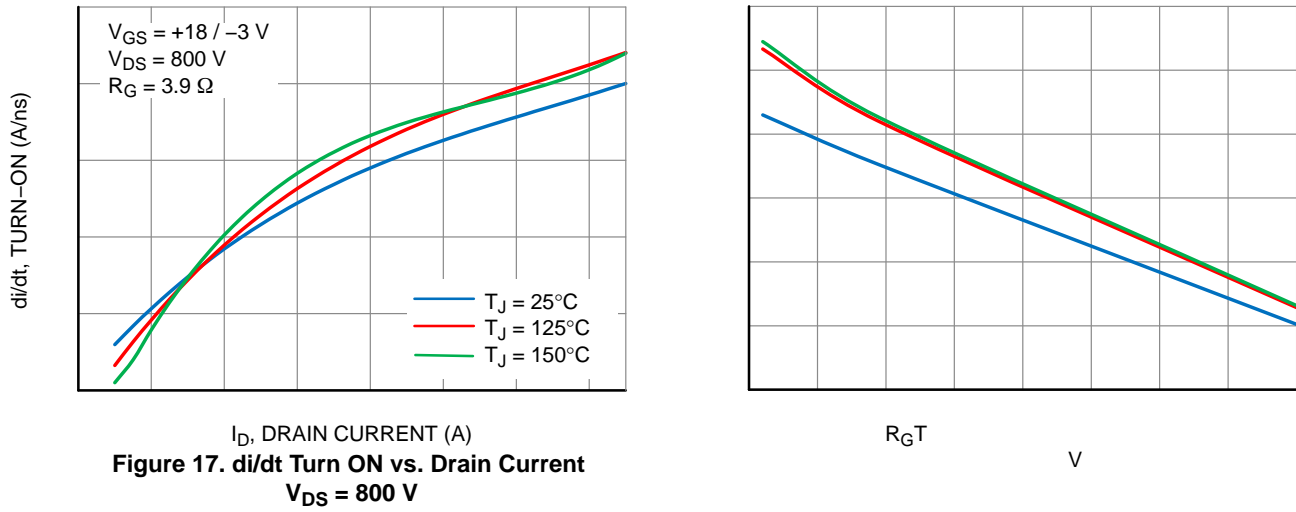
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TYPICAL CHARACTERISTICS M1/M2 SIC MOSFET CHARACTERISTIC



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TYPICAL CHARACTERISTICS M1/M2 SIC MOSFET CHARACTERISTIC



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TYPICAL CHARACTERISTICS

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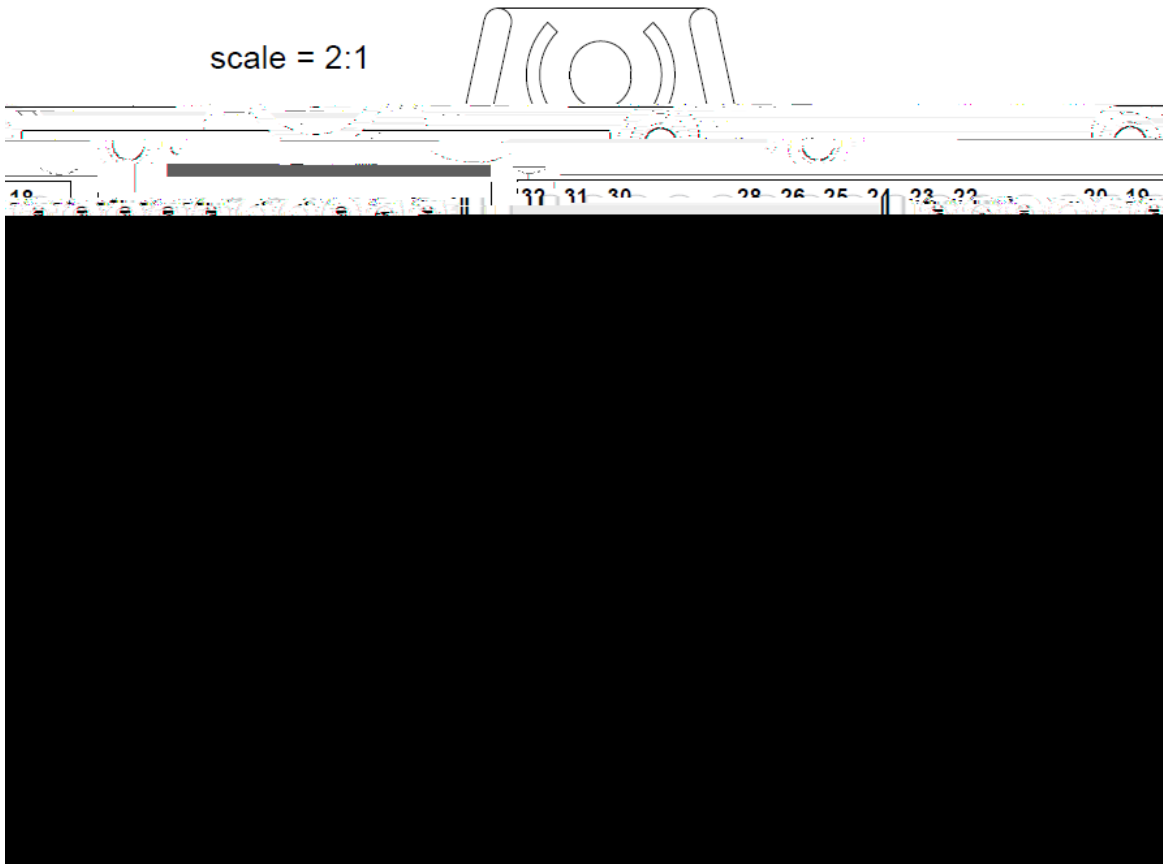
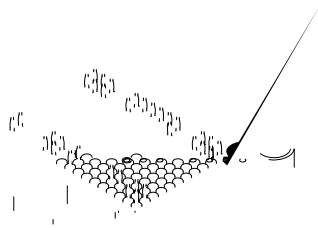


Figure 25.

Function	Pin #	X	Y	Function	Pin #	X	Y
0	TH1	18	48	32	DC-2	1	0
3.2	TH2	19	44.8	32	DC-2	2	0
2	13.8	0	AC4	20	41.6	32	DC-2
DC-2	4.0	12.8	0.0	AC4	20	41.6	0.0
32	32	DC+	5	16	0	AC1	22
28.8	32	DC+	6	16	3.2	AC1	23
9	35.2	3.2	C3	26	19.2	32	DC+
DC-1	12	44.8	3.2	AC2	29	6.4	28.8
3.2	AC2	31	3.2	32	DC-1	14	48
28.8	G4	32	0	32	DC-1	15	48

Figure 26.



CASE 180HU
ISSUE A

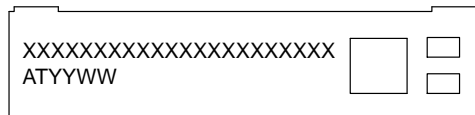
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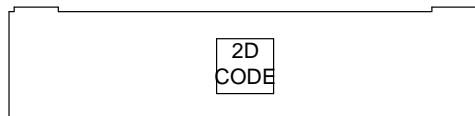
7.00

53.10
63

2.40



FRONTSIDE MARKING



BACKSIDE MARKING

XXXXX = Specific Device Code
AT = Assembly & Test Site Code
YYWW = Year and Work Week Code

*This information is generic. Please refer to device data sheet for actual part marking. Pb-Free indicator, "G" or microdot "▪", may or may not be present. Some products may not follow the Generic Marking.



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