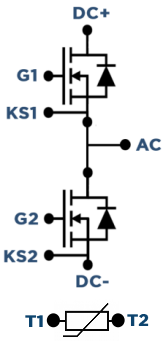
NH3T010MP120F2
1200 V 10 mΩ Silicon Carbide Half-Bridge Power Module

V_{DS}	I_D	$R_{DS(on)}$	Configuration
1200 V	200 A	10 mΩ	Half-Bridge



Features

- State-of-the-art SiC MOSFET technology
- Reliable gate oxide process
- 100% avalanche tested
- Press-fit package for design flexibility
- Baseplate-less for low thermal resistance

Benefits

- Higher system efficiency
- Reduced cooling requirements
- Increased power density
- Increased system switching frequency
- Enhanced system reliability
- Reduced total harmonic distortion

Applications

- Motor drives
- Solar PV inverters
- EV onboard chargers
- Server power supplies
- Energy storage systems
- EV fast charging stations
- Solid-state power controllers
- Uninterruptible power supplies

Maximum Ratings

Parameter	Symbol	Test Conditions	Min.	Typ.	Max.	Unit	Note
Drain-Source Voltage	$V_{(BR)DSS}$	T_C = 25 °C	1200	-	-	V	
Gate-Source Voltage	$V_{GS(max)}$		-10	-	25	V	
	$V_{GS,op}$	Recommended Operation	-	-5/+20	-		
Continuous Drain Current	I_D	V_{GS} = 20 V, T_C = 25 °C	-	-	200	A	
		V_{GS} = 20 V, T_C = 100 °C	-	-	200		
Pulsed Drain Current	$I_{D(pulse)}$	T_C = 25 °C t_P limited by $T_{j(max)}$	-	-	400	A	
Operating and Storage Temperature	T_J, T_{stg}		-55	-	175	°C	

NTC Thermistor Characterization

Parameter	Symbol	Test Conditions	Min.	Typ.	Max.	Unit	Note
Rated Resistance	R_{NTC}	25±0.05 °C	4.75	5.0	5.25	kΩ	Fig. 1
Beta Value	$\beta_{25/50}$	25±0.05 °C, 50±0.05 °C	3312	3380	3448	K	
Time Constant	τ	In still air	-	≤10	-	S	
Dissipation Factor	δ	In still air	-	≥2.4	-	mW/°C	
Power Dissipation	P_{Max}	Ambient temperature+25°C	-	80	-	mW	

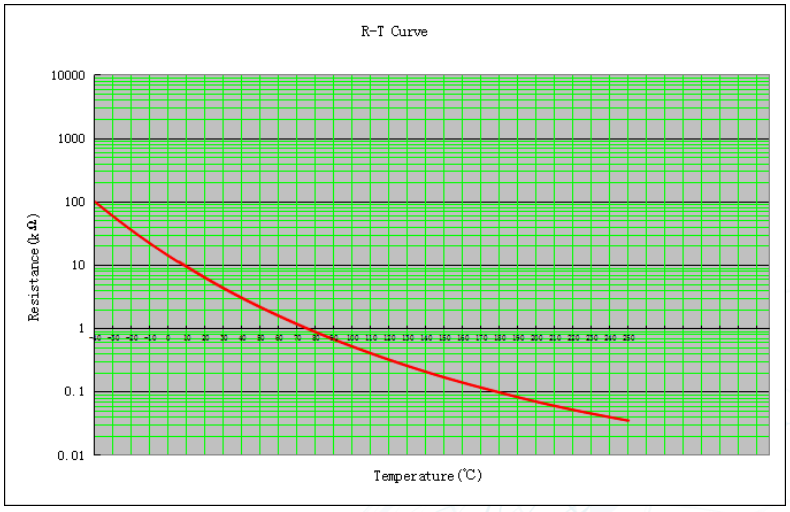
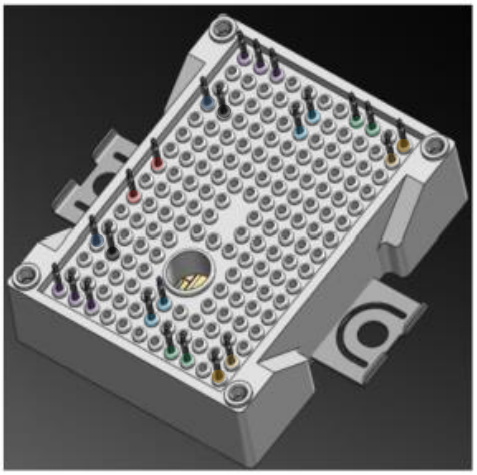
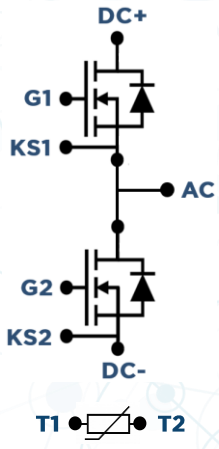


Figure 1: Nominal NTC Resistance vs. NTC Temperature

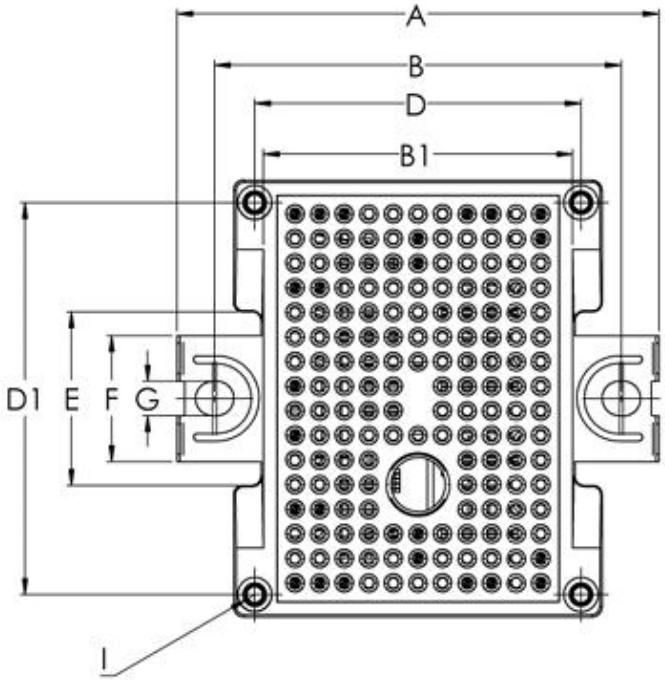
Pinout

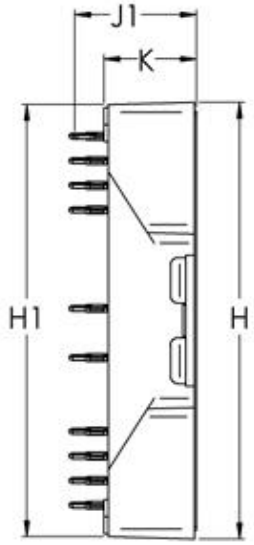
DC+
DC-
AC
Gate 1
Source 1
Gate 2
Source 2
NTC Terminals

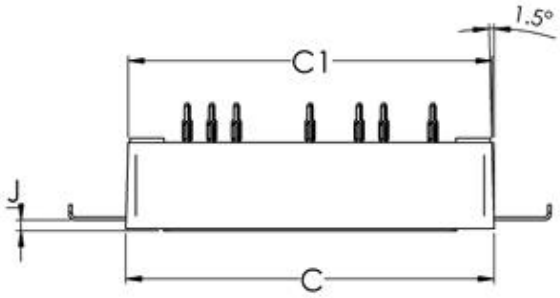


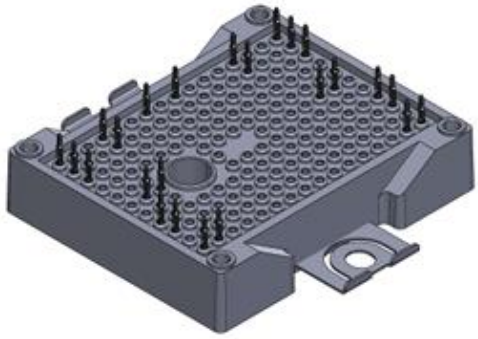


Package Dimensions









AREA	MIN	NOM	MAX
A	62.30	62.80	63.30
B	52.80	53.00	53.40
B1	40.70	40.90	41.30
C	47.70	48.00	48.30
C1	47.11	47.41	47.71
D	42.30	42.50	42.70
D1	50.80	51.00	51.20
E	22.40	22.70	23.00
F	16.20	16.40	16.60
G	4.40	4.50	4.60
H	56.40	56.80	57.00
H1	55.81	56.21	56.41
I	⌀2.20	⌀ 2.30	⌀2.40
J	1.075	1.40	1.70
J1	15.90	16.40	16.90
K	11.70	12.05	12.40

Note:

- Signal Pin hole - grid 3.2mm
- Tolerance of hole pattern ⌖ 0.1
- Signal Pin drill diameter 1.30mm
- Rib matrix thickness 0.9 ±0.2mm
- Brace thickness 0.4mm

Material:
1. Plastic Case PBT+30%GF (D202G30 White)
2. Cosmetic Treatment - Polish (#1000 - #2000)

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