Silicon Carbide (SiC) MOSFET – EliteSiC, 80 mohm, 1200 V, M1, D2PAK-7L

NTBG080N120SC1

Features

- Typ. $R_{DS(on)}$ = 80 mΩ
- Ultra Low Gate Charge (Typ. $Q_{G(tot)}$ = 56 nC)
- Low Effective Output Capacitance (Typ. C_{oss} = 79 pF)
- 100% Avalanche Tested
- T_J = 175°C
- This Device is Halide Free and RoHS Compliant with exemption 7a, Pb−Free 2LI (on second level interconnection)

Typical Applications

- UPS
- DC-DC Converter
- Boost Inverter

MAXIMUM RATINGS (T_J = 25°C unless otherwise noted)

Parameter	Symbol	Value	Unit
Drain−to−Source Voltage	V_{DSS}	1200	V
Gate−to−Source Voltage	V_{GS}	−15/+25	V

Table 1. THERMAL CHARACTERISTICS

Parameter	Symbol	Max	Unit
Thermal Resistance Junction−to−Case (Note 1)	$R_{\theta JC}$	0.84	°C/W
Thermal Resistance Junction−to−Ambient (Note 1)	$R_{\theta JA}$	40	°C/W

Table 2. ELECTRICAL CHARACTERISTICS (T_J = 25°C unless otherwise stated)

Parameter	Symbol	Test Condition	Min	Typ	Max	Unit
OFF CHARACTERISTICS						
Drain−to−Source Breakdown Voltage	$V_{(BR)DSS}$	V_{GS} = 0 V, I_D = 1 mA	1200			V
Drain−to−Source Breakdown Voltage						

Table 2. ELECTRICAL CHARACTERISTICS (T_J = 25°C unless otherwise stated) (continued)

Parameter	Symbol	Test Condition	Min	Typ	Max	Unit
DRAIN SOURCE DIODE CHARACTERISTICS						
Reverse Recovery Time	t_{RR}	V_{GS} = −5/20 V, I_{SD} = 20 A, dI_S/dt = 1000 A/μs		16.2		ns
Reverse Recovery Charge	Q_{RR}			61.6		nC
Reverse Recovery Energy	E_{REC}			4.1		μJ
Peak Reverse Recovery Current	I_{RRM}			7.6		A

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.

TYPICAL CHARACTERISTICS

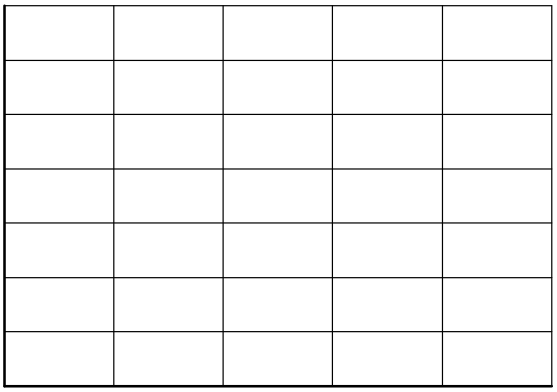

Figure 1. On Region Characteristics

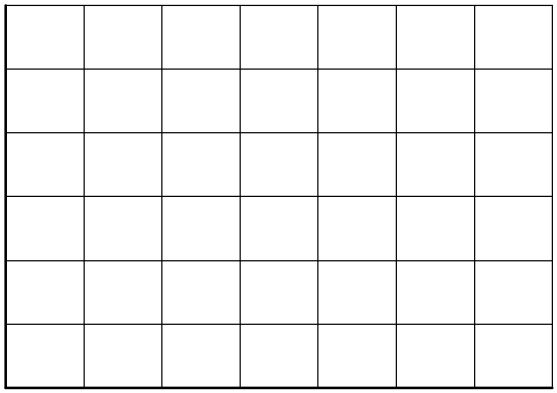

Figure 2. Normalized On Resistance vs. Drain Current and Gate Voltage

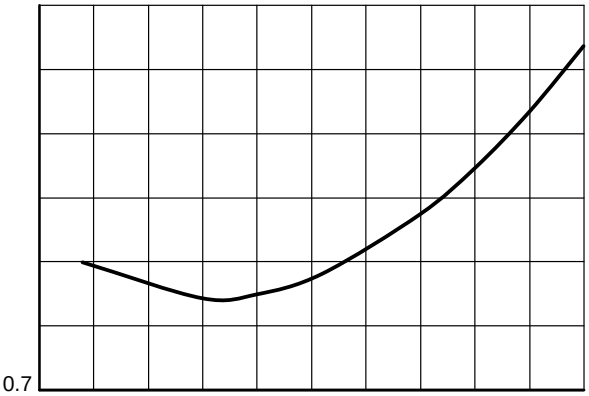

Figure 3. On Resistance Variation with Temperature

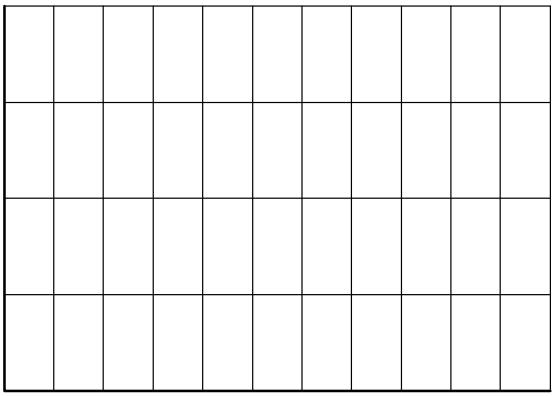

Figure 4. On Resistance vs. Gate to Source Voltage

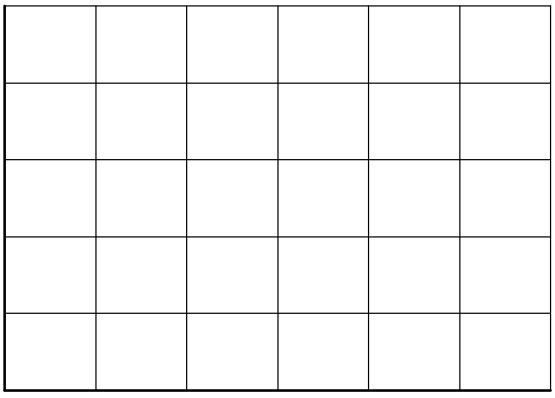

Figure 5. Transfer Characteristics

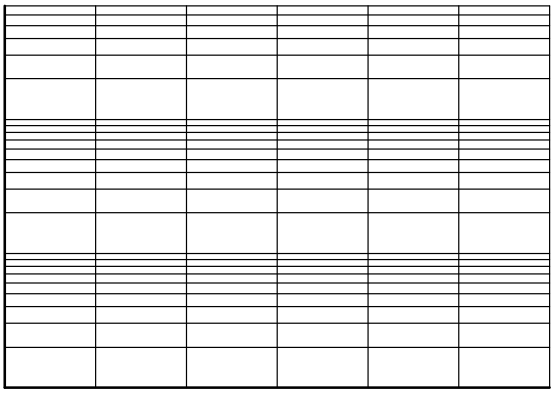

Figure 6. Diode Forward Voltage vs. Current

NTBG080N120SC1

D^{2}PAK7 (TO−263−7L HV)
CASE 418BJ
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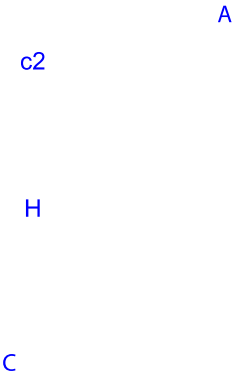

GENERIC
MARKING DIAGRAM*

XXXX = Specific Device Code
A = Assembly Location
Y = Year
WW = Work Week
G = Pb−Free Package

*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.