Silicon Carbide (SiC) MOSFET – EliteSiC, 29 mohm, 1200 V, M3S, D2PAK-7L

NTBG030N120M3S

- Typ. $R_{DS(on)}$ = 29 mΩ @ V_{GS} = 18 V
- Ultra Low Gate Charge ($Q_{G(tot)}$ = 107 nC)
- High Speed Switching with Low Capacitance (C_{oss} = 106 pF)
- 100% Avalanche Tested
- This Device is Halide Free and RoHS Compliant with exemption 7a, Pb Free 2LI (on second level interconnection)

- Solar Inverters
- Electric Vehicle Charging Stations
- UPS (Uninterruptible Power Supplies)
- Energy Storage Systems
- SMPS (Switch Mode Power Supplies)

(T_J = 25°C unless otherwise noted)

Drain−to−Source Voltage			V_{DSS}	1200	V
Gate−to−Source Voltage			V_{GS}	−10/+22	V
Continuous Drain Current (Notes 2, 3)	Steady State	T_C = 25°C	I_D	77	A
Power Dissipation (Note 2)			P_D	348	W

Junction−to−Case − Steady State (Note 2)	$R_{\theta JC}$	0.43	°C/W
Junction−to−Ambient − Steady State (Notes 1, 2)	$R_{\theta JA}$	40	

Operation Values of Gate−to−Source Voltage	V_{GSop}	−5…−3 +18	V

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.

(T_J = 25°C unless otherwise specified)

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Drain−to−Source Breakdown Voltage	$V_{(BR)DSS}$	V_{GS} = 0 V, I_D = 1 mA	1200	−	−	V
Drain−to−Source Breakdown Voltage Temperature Coefficient	$V_{(BR)DSS}/T_J$	I_D = 1 mA, referenced to 25°C (Note 7)	−	0.3	−	V/°C
Zero Gate Voltage Drain Current	I_{DSS}	V_{GS} = 0 V, V_{DS} = 1200 V	−	−	100	μA
Gate−to−Source Leakage Current	I_{GSS}	V_{GS} = +22/−10 V, V_{DS} = 0 V	−	−	±1	μA
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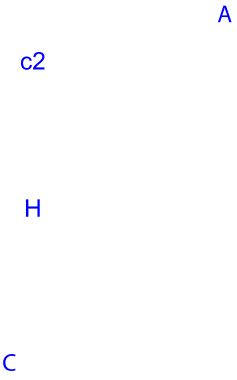
[redacted]	V	V_{GS} = V_{DS}, I_D = 15 mA	2.04	2.4	4.4	V
[redacted]	$R_{DS(on)}$	V_{GS} = 18 V, I_D = 30 A, T_J = 25°C	−	29	39	mΩ
		V_{GS} = 18 V, I_D = 30 A, T_J = 175°C (Note 7)	−	58	−	
Forward Transconductance	g_{FS}	V_{DS} = 10 V, I_D = 30 A (Note 7)	−	30	−	S

Input Capacitance	C_{ISS}	V_{GS} = 0 V, f = 1 MHz, V_{DS} = 800 V	−	2430	−	pF
Output Capacitance	C_{OSS}		−	106	−	
Reverse Transfer Capacitance	C_{RSS}		−	9.4	−	
Total Gate Charge	$Q_{G(TOT)}$	V_{GS} = −3/18 V, V_{DS} = 800 V,				

[redacted]

D^{2}PAK7 (TO−263−7L HV)
CASE 418BJ
ISSUE B

DATE 16 AUG 2019



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.