onsemi

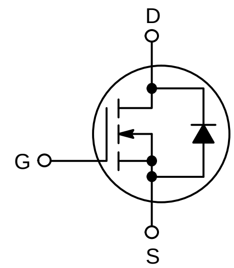
, Ca (C) MO FET – E, C, 20 , 1200 V, M1, D

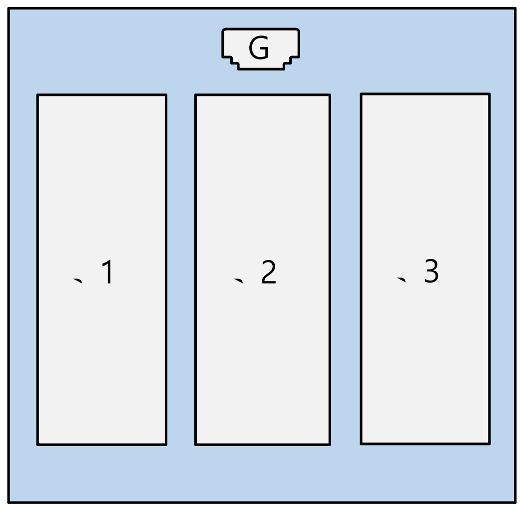
NTC020N120 C1

Silicon Carbide (SiC) MOSFET uses a completely new technology that provide superior switching performance and higher reliability compared to Silicon. In addition, the low ON resistance and compact chip size ensure low capacitance and gate charge. Consequently, system benefits include highest efficiency, faster operation frequency, increased power density, reduced EMI, and reduced system size.

- 1200 V @ $T_J = 175°C$
- Typ $R_{DS(on)} = 20\ m\Omega$ at $V_{GS} = 20\ V$, $I_D = 60\ A$
- High Speed Switching with Low Capacitance
- 100% UIL Tested
- This Device is Halide Free and RoHS Compliant with exemption 7a, Pb−Free 2LI (on second level interconnection)

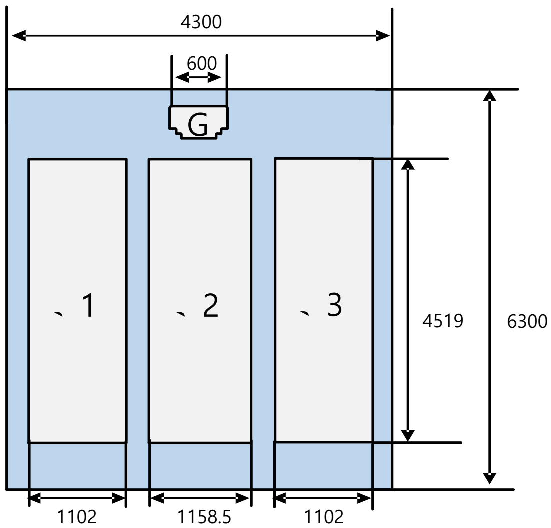
- Industrial Motor Drive
- UPS
- Boost Inverter
- PV Charger

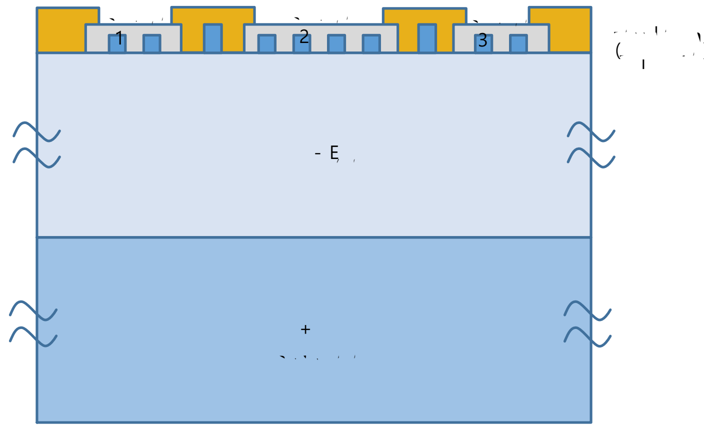




- Wafer Diameter 6 inch
- Die Size 4,300 x 6,300 μm
- Metallization
  - Top Ti/TiN/Al 5 μm
  - Back Ti/NiV/Ag
- Die Thickness Typ. 200 μm
- Gate Pad Size 600 x 310 μm

See detailed ordering and shipping information on page 7 of this data sheet.



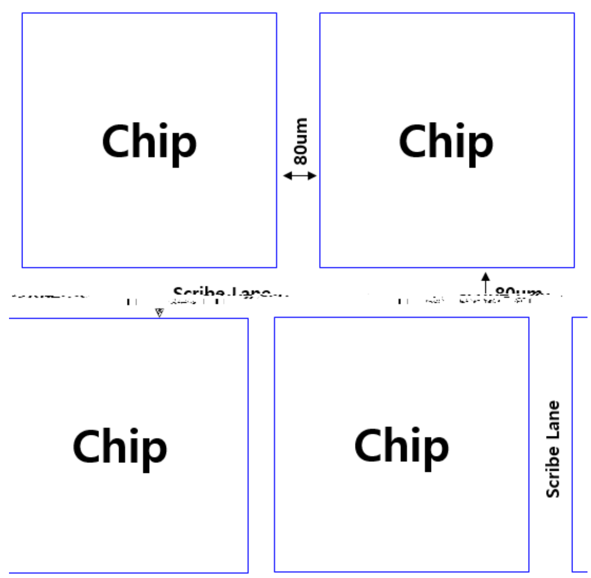


Passivation Material: Polymide (PSPI)

Passivation Type: Local Passivation

Passivation Thickness 10 μm

: Passivation Area



(T_C = 25°C unless otherwise noted)

Drain to Source Voltage			V_{DSS}	1200	V
Gate to Source Voltage			V_{GS}	15/+25	V
Recommended Operation Values of Gate to Source Voltage	T_C < 175°C		V_{GSop}	5/+20	V
Continuous Drain Current $R_{\theta JC}$	Steady State	T_C = 25°C	I_D	103	A
Power Dissipation $R_{\theta JC}$			P_D	535	W
Continuous Drain Current $R_{\theta JC}$	Steady State	T_C = 100°C	I_D	73	A
Power Dissipation $R_{\theta JC}$			P_D	267	W
Pulsed Drain Current (Note 2)	T_C = 25°C		I_{DM}	412	A
Single Pulse Surge Drain Current Capability	T_C = 25°C, t_p = 10 μs, R_G = 4.7 Ω		I_{DSC}	807	A

(T_J = 25°C unless otherwise noted)

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		900		mV/°C

(T_J = 25°C unless otherwise noted)

($T_J = 25°$

(T$_J$ = 25°C unless otherwise noted) (continued)