

Normally – OFF Silicon Carbide Super Junction Transistor

V_{DS}	=	1200 V
I_D	=	7 A
$R_{DS(ON)}$	=	220 m Ω

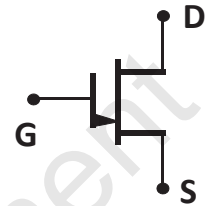
Features

- 225 °C maximum operating temperature
- Best in class temperature independent switching and blocking performance
- Lowest $V_{DS(ON)}$ as compared to any other SiC switch
- Suitable for connecting an anti-parallel diode
- Gate oxide free SiC switch
- Positive temperature coefficient for easy paralleling
- Low gate charge
- Low intrinsic capacitance

Advantages

- Low switching losses
- Higher efficiency

Package



Applications

- Ideal for Aerospace and Defense Applications
- Down Hole Oil Drilling, Geothermal Instrumentation
- Hybrid Electric Vehicles (HEV)
- Solar Inverters
- Switched-Mode Power Supply (SMPS)
- Power Factor Correction (PFC)
- Induction Heating
- Uninterruptible Power Supply (UPS)
- Motor Drives

Maximum Ratings, at $T_j = 175$ °C, unless otherwise specified

Parameter	Symbol	Conditions	Values	Unit
Drain – Source Voltage	V_{DS}		1200	V
DC-Drain Current	I_{DM}	$T_c \leq 140$ °C	7	A
Gate Peak Current	I_{GM}		1.5	A
Power dissipation	P_{tot}	$T_c = 25$ °C	159	W
Operating and storage temperature	T_j, T_{stg}		-55 to 175	°C

Electrical Characteristics, at $T_j = 175$ °C, unless otherwise specified

Parameter	Symbol	Conditions	Values			Unit
			min.	typ.	max.	
Drain – Source On resistance	$R_{DS(ON)}$	$I_F = 7$ A, $T_j = 25$ °C		220		m Ω
		$I_F = 7$ A, $T_j = 175$ °C		390		
Drain leakage current	I_{DSS}	$V_R = 1200$ V, $T_j = 25$ °C		0.1		μ A
		$V_R = 1200$ V, $T_j = 175$ °C		0.5		

Thermal Characteristics

Thermal resistance, junction - case	R_{thJC}	0.95	°C/W
-------------------------------------	------------	------	------

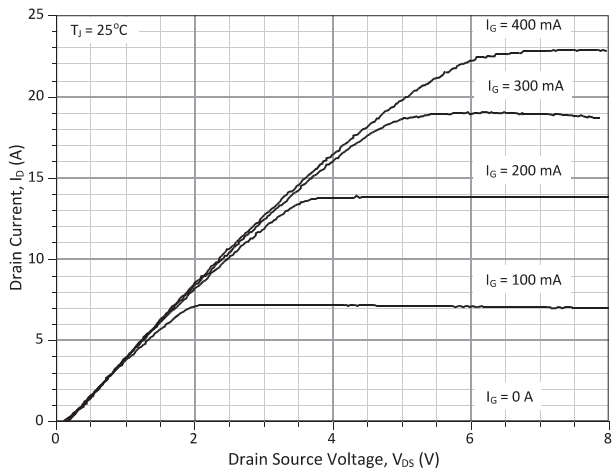


Figure 1: Typical Output Characteristics at 25 °C

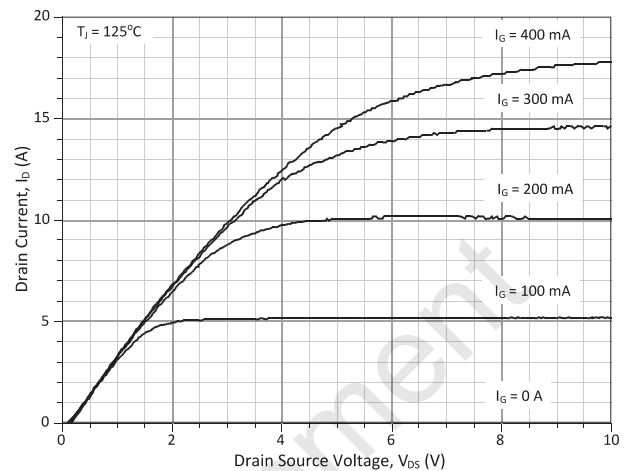


Figure 2: Typical Output Characteristics at 125 °C

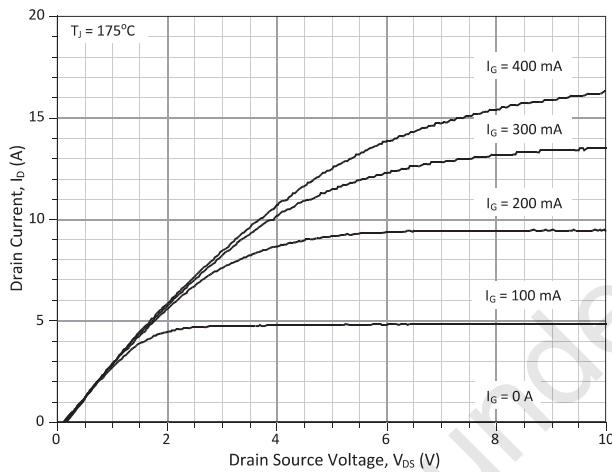


Figure 3: Typical Output Characteristics at 175 °C

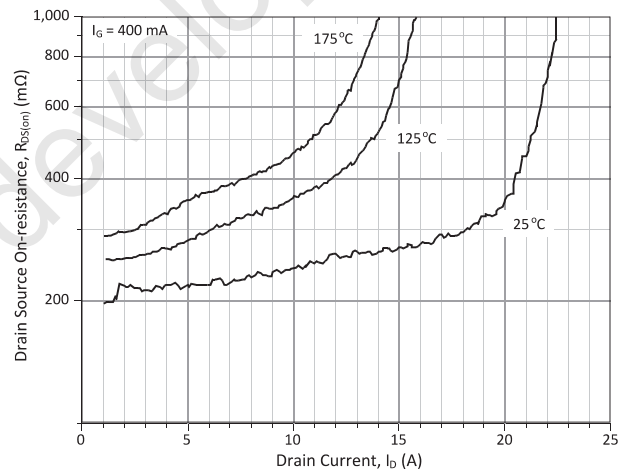


Figure 4: Typical Drain Source On-resistance

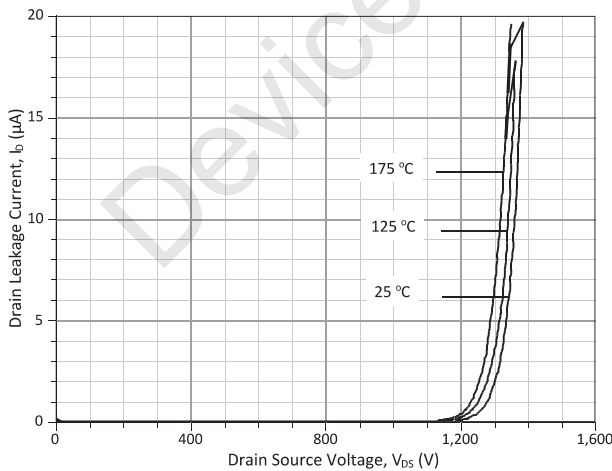


Figure 5: Typical Blocking Characteristics

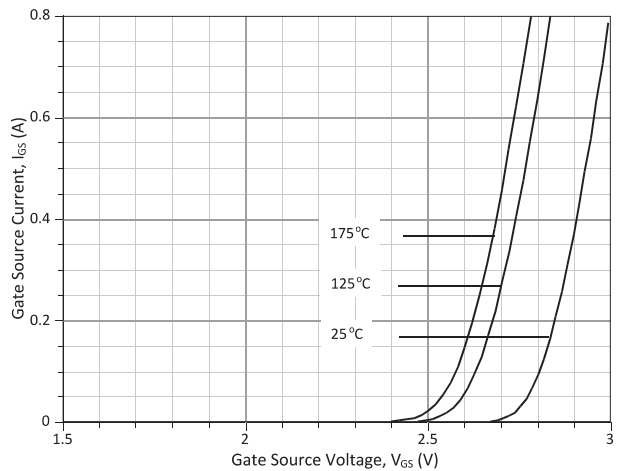


Figure 6: Typical Gate Source I-V Characteristics

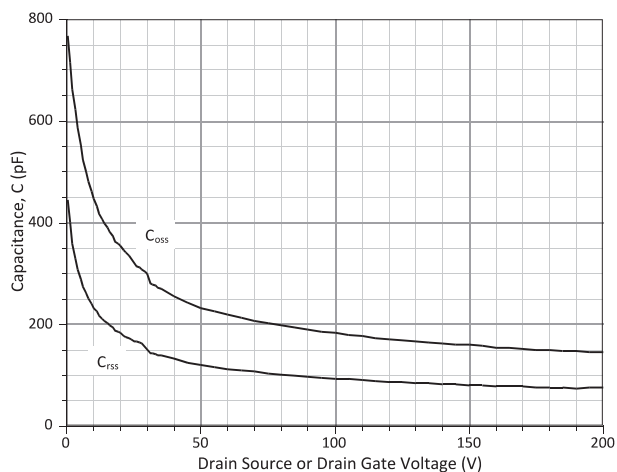


Figure 7: Typical C-V Characteristics

Revision History			
Date	Revision	Comments	Supersedes
2011/01/19	1	Preliminary product released for sampling. This device is fast-evolving with a lower targeted Gate Current requirement. Device performance is not guaranteed to match this datasheet.	

Published by
 GeneSiC Semiconductor, Inc.
 43670 Trade Center Place Suite 155
 Dulles, VA 20166

GeneSiC Semiconductor, Inc. reserves right to make changes to the product specifications and data in this document without notice.

GeneSiC disclaims all and any warranty and liability arising out of use or application of any product. No license, express or implied to any intellectual property rights is granted by this document.

Unless otherwise expressly indicated, GeneSiC products are not designed, tested or authorized for use in life-saving, medical, aircraft navigation, communication, air traffic control and weapons systems, nor in applications where their failure may result in death, personal injury and/or property damage.