

## Normally – OFF Silicon Carbide Super Junction Transistor

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

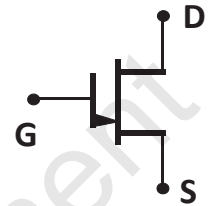
### Features

- 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 $\Omega$
		$I_F = 7$ A, $T_j = 175$ °C		390		
Drain leakage current	$I_{DSS}$	$V_R = 1200$ V, $T_j = 25$ °C		0.1		$\mu$ A
		$V_R = 1200$ V, $T_j = 175$ °C		0.5		

### Thermal Characteristics

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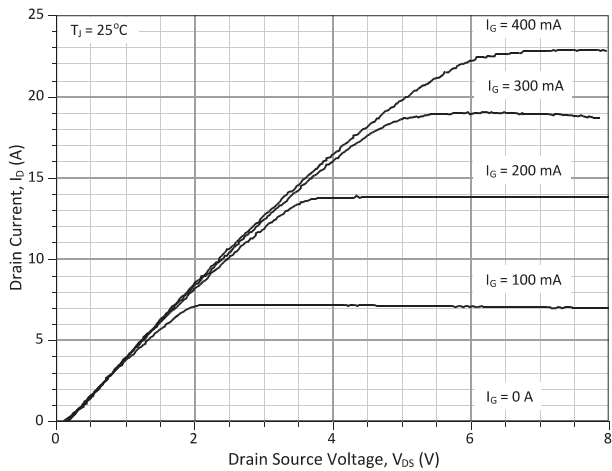


Figure 1: Typical Output Characteristics at 25 °C

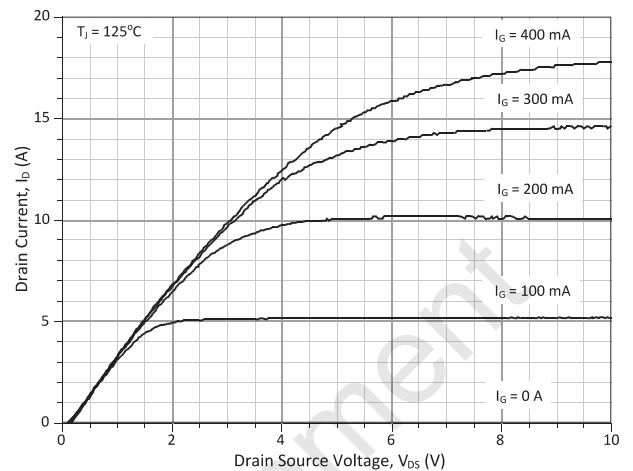


Figure 2: Typical Output Characteristics at 125 °C

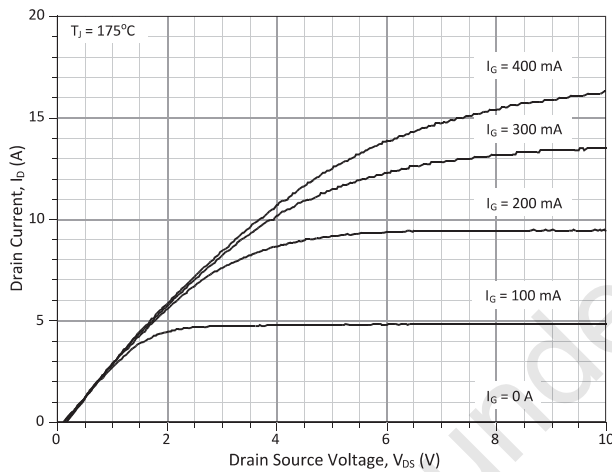


Figure 3: Typical Output Characteristics at 175 °C

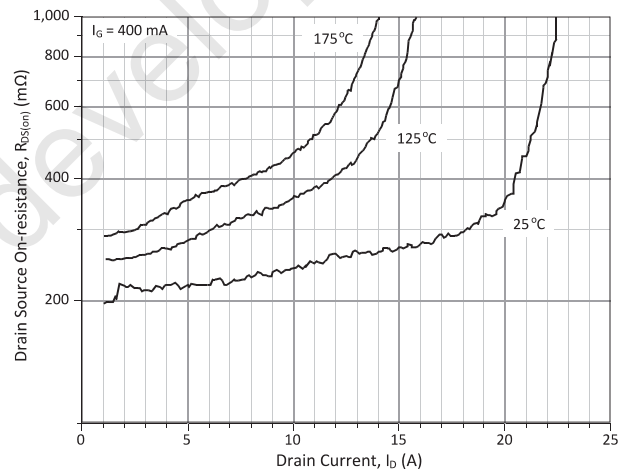


Figure 4: Typical Drain Source On-resistance

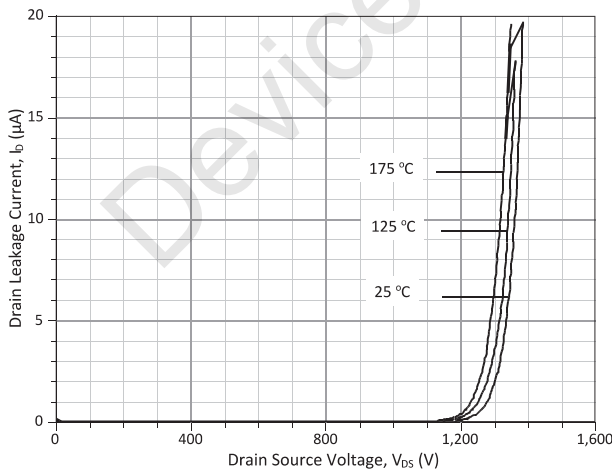


Figure 5: Typical Blocking Characteristics

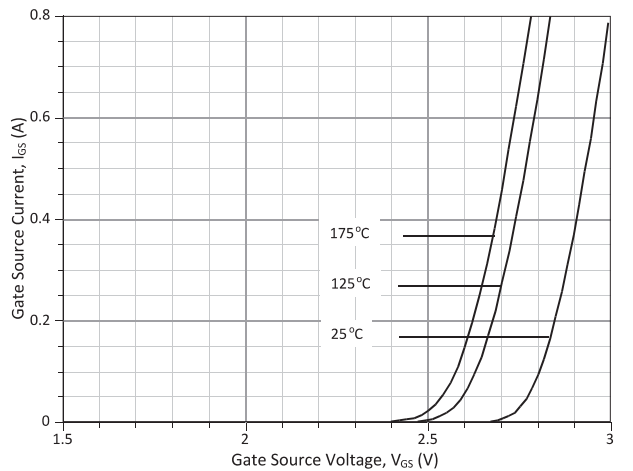


Figure 6: Typical Gate Source I-V Characteristics

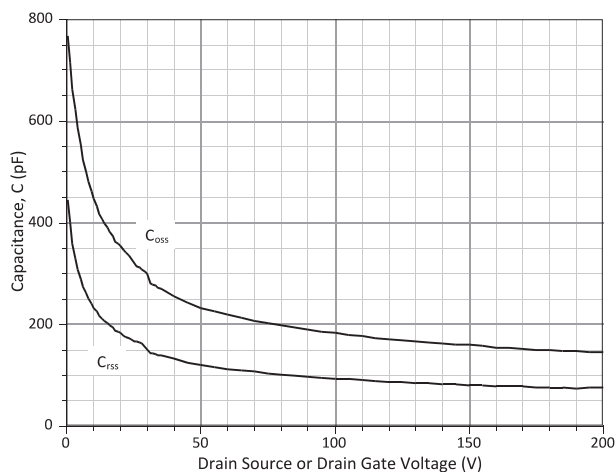


Figure 7: Typical C-V Characteristics

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.	

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