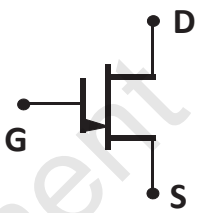
Normally – OFF Silicon Carbide Super Junction Transistor

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

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

Package



Advantages

- Low switching losses
- Higher efficiency

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		mΩ
		I_F = 7 A, T_j = 175 °C		390		
Drain leakage current	I_{DSS}	V_R = 1200 V, T_j = 25 °C		0.1		μA
		V_R = 1200 V, T_j = 175 °C		0.5		

Thermal Characteristics

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

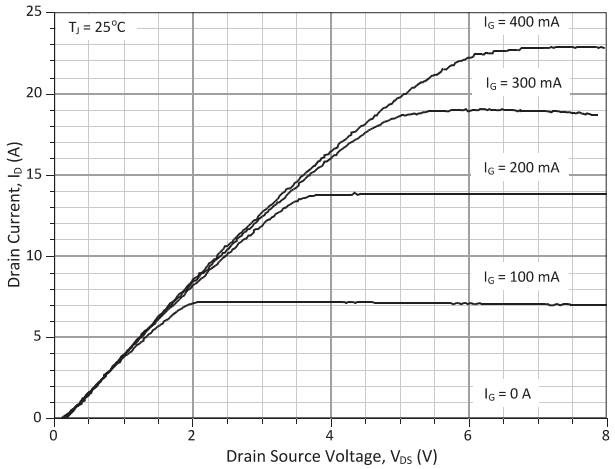


Figure 1: Typical Output Characteristics at 25 °C

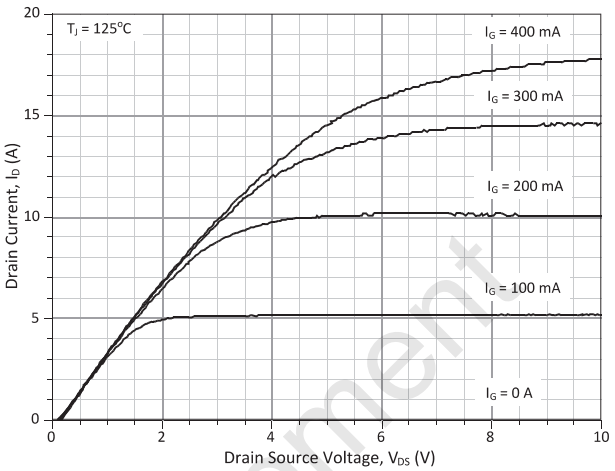


Figure 2: Typical Output Characteristics at 125 °C

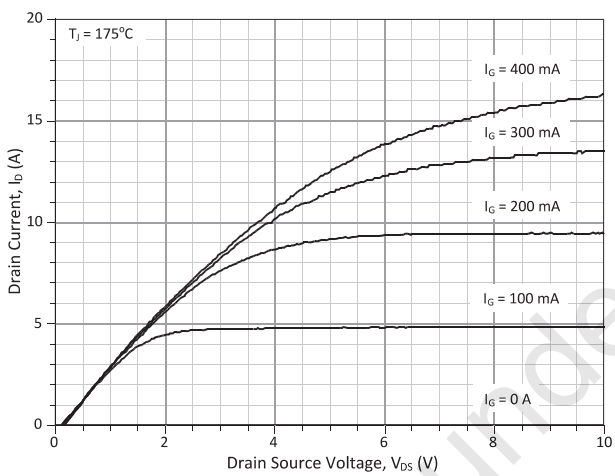


Figure 3: Typical Output Characteristics at 175 °C

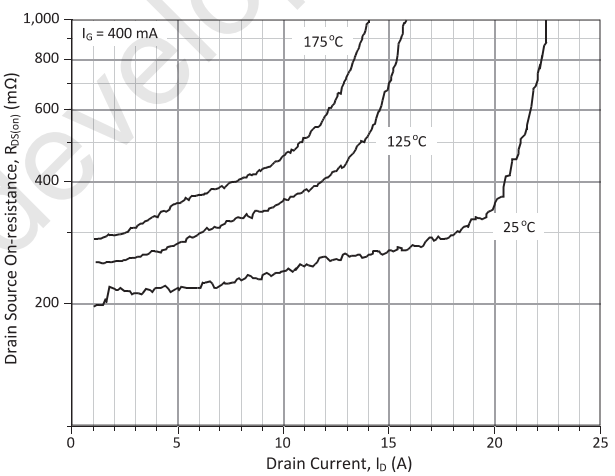


Figure 4: Typical Drain Source On-resistance

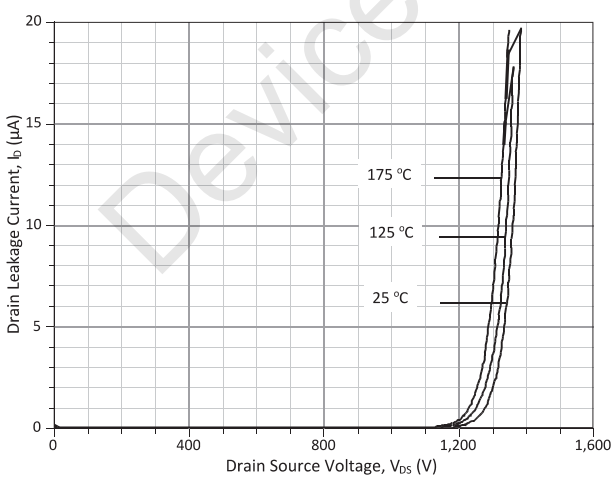


Figure 5: Typical Blocking Characteristics

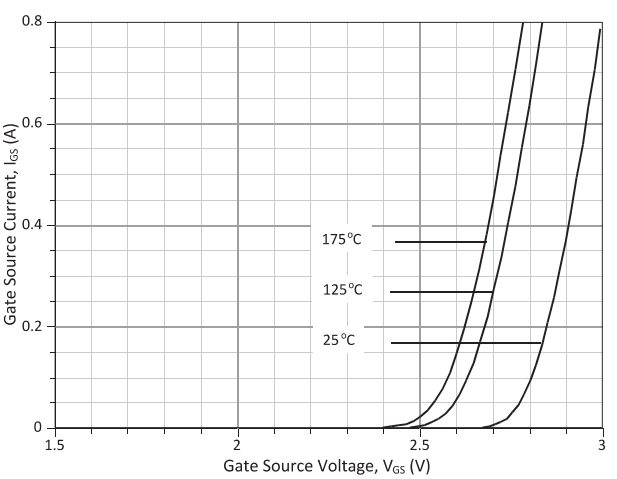


Figure 6: Typical Gate Source I-V Characteristics

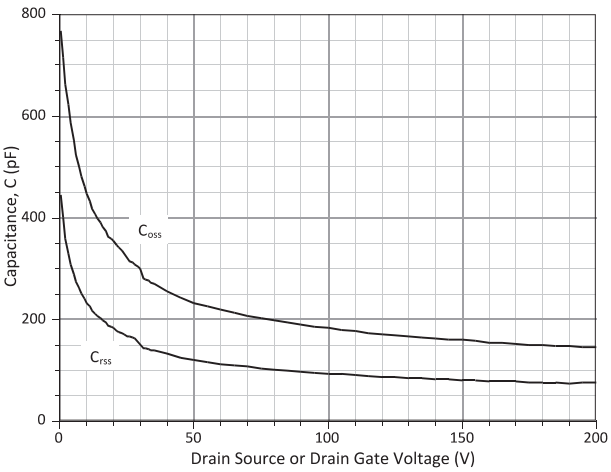


Figure 7: Typical C-V Characteristics

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.	

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