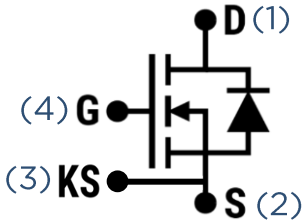
N3T080MP120K
1200 V 80 mΩ Silicon Carbide MOSFET

V_{DS}	I_D	$R_{DS(on)}$	Package
1200 V	38 A	80 mΩ	TO-247-4



Features
- State-of-the-art SiC MOSFET technology
- Reliable gate oxide process
- 100% avalanche tested
- Low input capacitance
- Low internal gate resistance
- Low body diode forward voltage drop

Benefits
- Higher system efficiency
- Reduced cooling requirements
- Increased power density
- Increased system switching frequency
- Enhanced system reliability
- Reduced total harmonic distortion

Applications
- Motor drives
- Solar PV inverters
- EV onboard chargers
- Server power supplies
- Energy storage systems
- EV fast charging stations
- Solid-state power controllers
- Uninterruptible power supplies

Maximum Ratings

Parameter	Symbol	Test Conditions	Min.	Typ.	Max.	Unit	Note
Drain-Source Voltage	$V_{(BR)DSS}$	T_C = 25 °C	1200	-	-	V	
Gate-Source Voltage	$V_{GS(max)}$		-10	-	25	V	
	$V_{GS,op}$	Recommended Operation	-	-5/+20	-		
Continuous Drain Current	I_D	V_{GS} = 20 V, T_C = 25 °C	-	-	38	A	Fig. 13
		V_{GS} = 20 V, T_C = 100 °C	-	-	27		
Pulsed Drain Current	$I_{D(pulse)}$	T_C = 25 °C, t_P limited by $T_{j(max)}$	-	-	80	A	Fig. 12
Power Dissipation	P_{tot}	T_C = 25 °C	-	-	188	W	Fig. 14
Avalanche Energy, Single Pulse	E_{AS}	L = 26 mH, I_{AS} = 3.5 A	-	159		mJ	
Operating and Storage Temperature	T_J , T_{stg}		-55	-	175	°C	

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Typical Performance

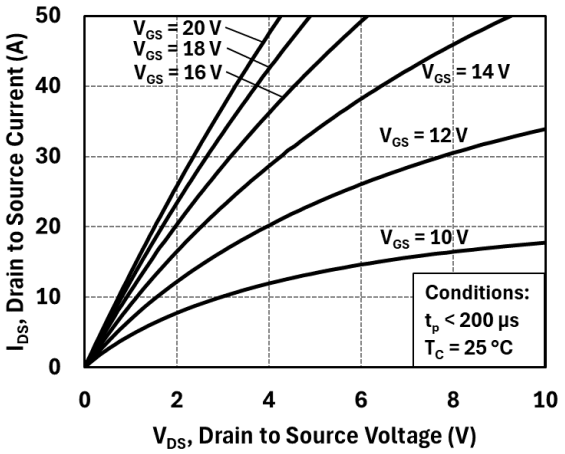

Figure 1: Output Characteristics at 25 °C

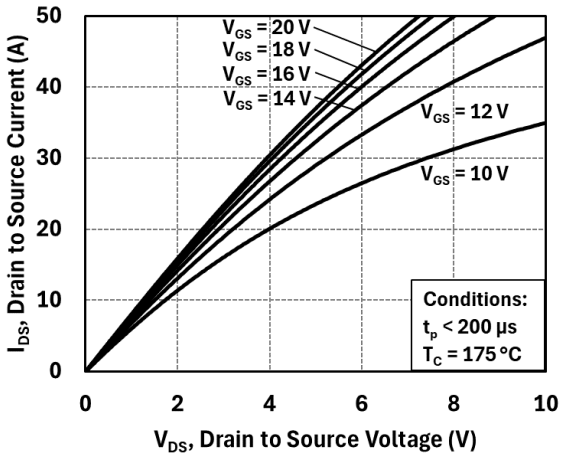

Figure 2: Output Characteristics at 175 °C

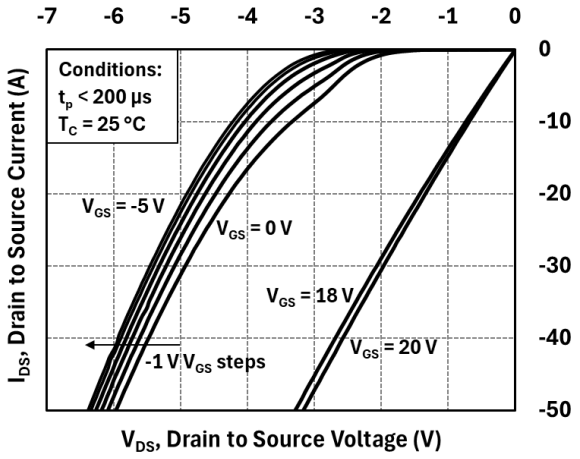

Figure 3: Body Diode Characteristics at 25 °C

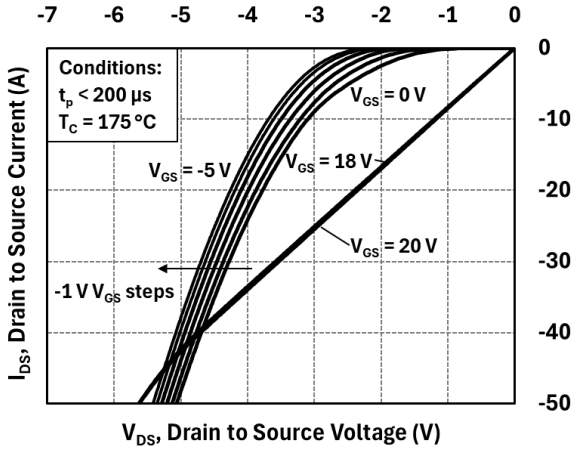

Figure 4: Body Diode Characteristics at 175 °C

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