

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

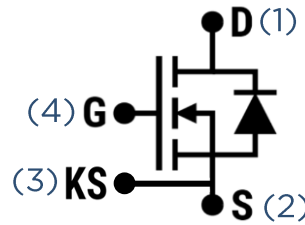
- State-of-the-art SiC MOSFET technology
- Reliable gate oxide process
- 100% avalanche tested
- Low input capacitance
- Low internal gate resistance
- Low body diode forward voltage drop

Benefits

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

Maximum Ratings

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



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

Typical Performance

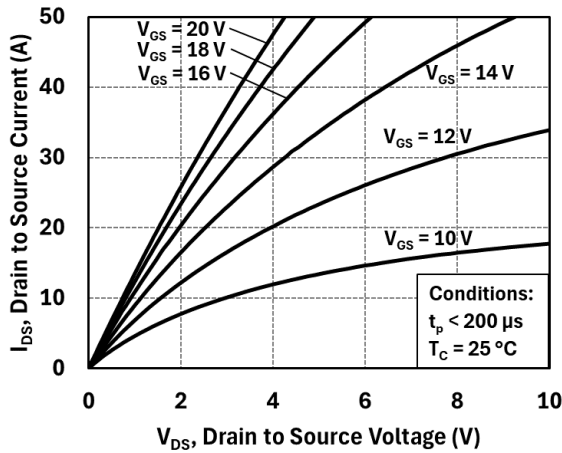


Figure 1: Output Characteristics at 25 °C

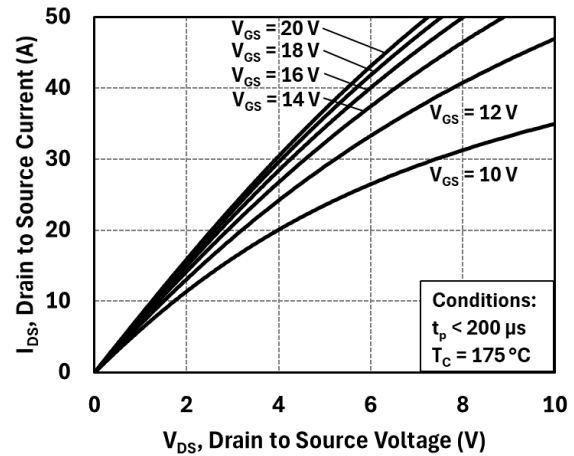


Figure 2: Output Characteristics at 175 °C

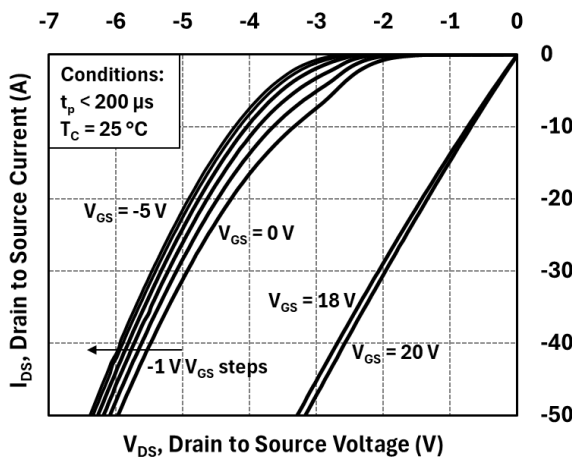


Figure 3: Body Diode Characteristics at 25 °C

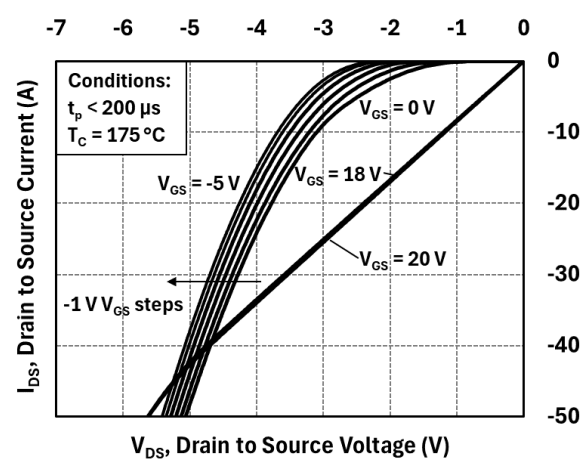



Figure 4: Body Diode Characteristics at 175 °C

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