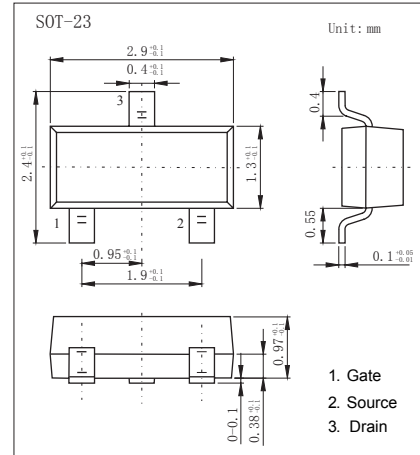
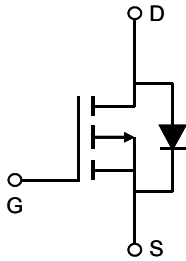


**P-Channel MOSFET**  
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■ Features

- $V_{DS} (V) = -20V$
- $I_D = -3 A (V_{GS} = -4.5V)$
- $R_{DS(ON)} < 80m\Omega (V_{GS} = -4.5V)$
- $R_{DS(ON)} < 100m\Omega (V_{GS} = -2.5V)$
- $R_{DS(ON)} < 130m\Omega (V_{GS} = -1.8V)$



■ Absolute Maximum Ratings  $T_a = 25^\circ C$

Parameter		Symbol	Rating	Unit
Drain-Source Voltage		$V_{DS}$	-20	V
Gate-Source Voltage		$V_{GS}$	$\pm 8$	
Continuous Drain Current	$T_a = 25^\circ C$	$I_D$	-3	A
	$T_a = 70^\circ C$		-2.4	
Pulsed Drain Current		$I_{DM}$	-15	
Power Dissipation	$T_a = 25^\circ C$	$P_D$	1.4	W
	$T_a = 70^\circ C$		0.9	
Thermal Resistance.Junction- to-Ambient	$t \leq 10s$	$R_{thJA}$	90	$^\circ C/W$
	Steady-State		125	
Thermal Resistance.Junction- to-Lead		$R_{thJL}$	80	
Junction Temperature		$T_J$	150	$^\circ C$
Junction Storage Temperature Range		$T_{stg}$	-55 to 150	

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■ Electrical Characteristics Ta = 25°C

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Drain-Source Breakdown Voltage	V <sub>DSS</sub>	I <sub>D</sub> =-250 μA, V <sub>GS</sub> =0V	-20			V
Zero Gate Voltage Drain Current	I <sub>DSS</sub>	V <sub>DS</sub> =-20V, V <sub>GS</sub> =0V			-1	μA
		V <sub>DS</sub> =-20V, V <sub>GS</sub> =0V, T <sub>J</sub> =55°C			-5	
Gate-Body leakage current	I <sub>GSS</sub>	V <sub>DS</sub> =0V, V <sub>GS</sub> =±8V			±100	nA
Gate Threshold Voltage	V <sub>GS(th)</sub>	V <sub>DS</sub> =V <sub>GS</sub> I <sub>D</sub> =-250 μA	-0.4		-1	V
Static Drain-Source On-Resistance	R <sub>DS(on)</sub>	V <sub>GS</sub> =-4.5V, I <sub>D</sub> =-3A			80	mΩ
		V <sub>GS</sub> =-4.5V, I <sub>D</sub> =-3A T <sub>J</sub> =125°C			115	
		V <sub>GS</sub> =-2.5V, I <sub>D</sub> =-2.6A			100	
		V <sub>GS</sub> =-1.8V, I <sub>D</sub> =-1A			130	
On state drain current	I <sub>D(ON)</sub>	V <sub>GS</sub> =-4.5V, V <sub>DS</sub> =-5V	-15			A
Forward Transconductance	g <sub>FS</sub>	V <sub>DS</sub> =-5V, I <sub>D</sub> =-3A		12		S
Input Capacitance	C <sub>iss</sub>	V <sub>GS</sub> =0V, V <sub>DS</sub> =-10V, f=1MHz		560	745	pF
Output Capacitance	C <sub>oss</sub>			80		
Reverse Transfer Capacitance	C <sub>rss</sub>			70		
Gate resistance	R <sub>g</sub>	V <sub>GS</sub> =0V, V <sub>DS</sub> =0V, f=1MHz		15	23	Ω
Total Gate Charge	Q <sub>g</sub>	V <sub>GS</sub> =-4.5V, V <sub>DS</sub> =-10V, I <sub>D</sub> =-3A		8.5	11	nC
Gate Source Charge	Q <sub>gs</sub>			1.2		
Gate Drain Charge	Q <sub>gd</sub>			2.1		
Turn-On DelayTime	t <sub>d(on)</sub>	V <sub>GS</sub> =-4.5V, V <sub>DS</sub> =-10V, R <sub>L</sub> =3.3Ω, R <sub>GEN</sub> =6Ω		7.2		ns
Turn-On Rise Time	t <sub>r</sub>			36		
Turn-Off DelayTime	t <sub>d(off)</sub>			53		
Turn-Off Fall Time	t <sub>f</sub>			56		
Body Diode Reverse Recovery Time	t <sub>rr</sub>	I <sub>F</sub> =-3A, di/dt=100A/μs		37	49	nC
Body Diode Reverse Recovery Charge	Q <sub>rr</sub>			27		
Maximum Body-Diode Continuous Current	I <sub>S</sub>				-1.4	A
Diode Forward Voltage	V <sub>SD</sub>	I <sub>S</sub> =-1A, V <sub>GS</sub> =0V			-1	V

\* The static characteristics in Figures 1 to 6 are obtained using <300us pulses, duty cycle 0.5% max.

■ Marking

Marking	AD*
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**P-Channel MOSFET**  
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■ Typical Characteristics

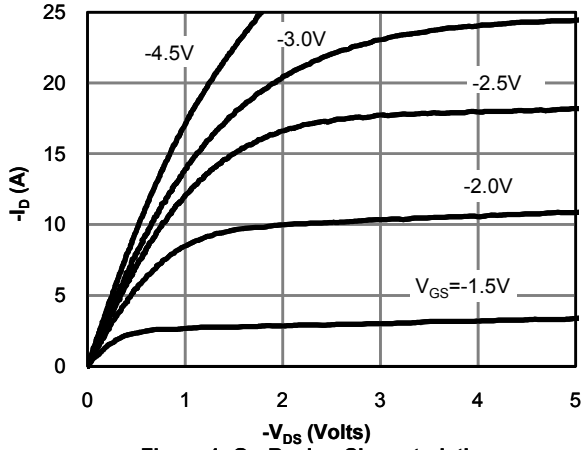


Figure 1: On-Region Characteristics

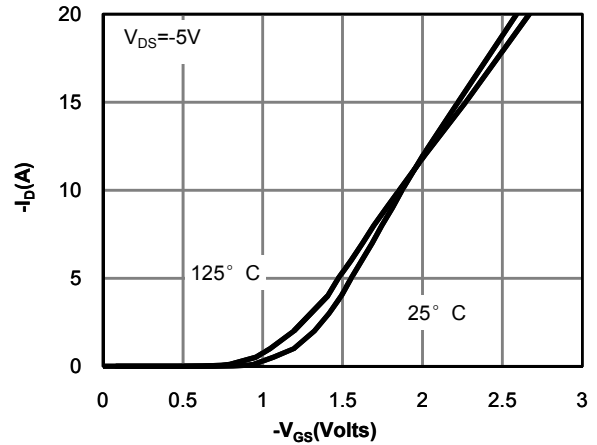


Figure 2: Transfer Characteristics

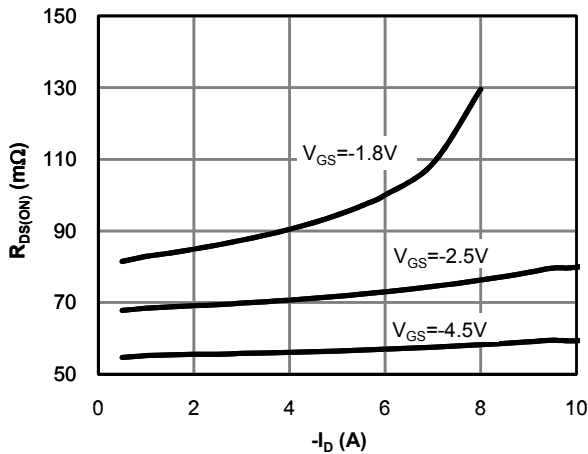


Figure 3: On-Resistance vs. Drain Current and Gate Voltage

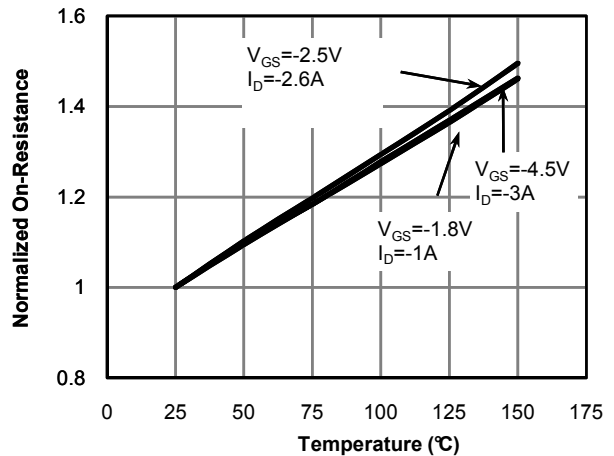


Figure 4: On-Resistance vs. Junction Temperature

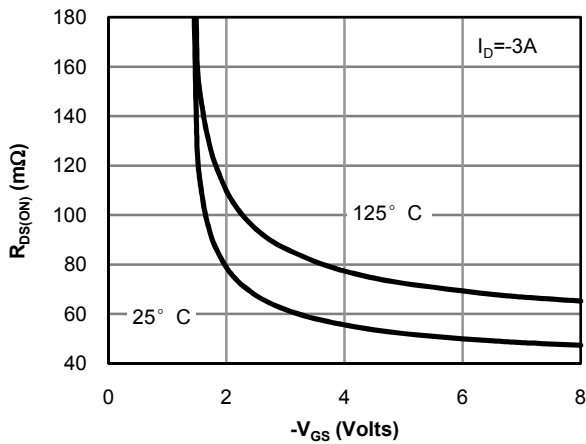


Figure 5: On-Resistance vs. Gate-Source Voltage

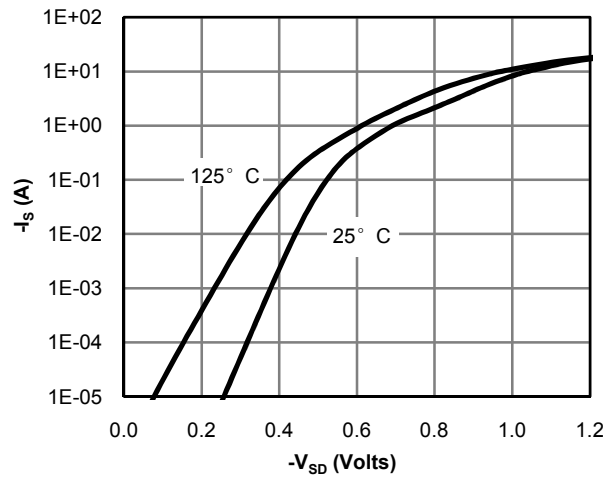


Figure 6: Body-Diode Characteristics

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■ Typical Characteristics

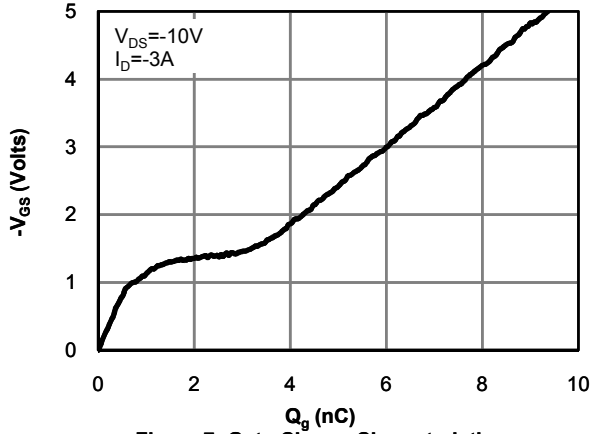


Figure 7: Gate-Charge Characteristics

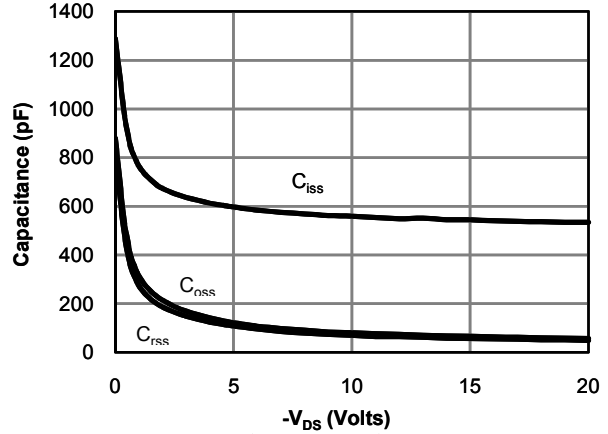


Figure 8: Capacitance Characteristics

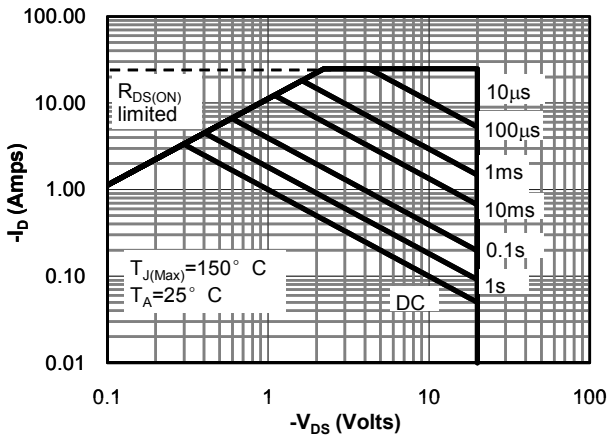


Figure 9: Maximum Forward Biased Safe Operating Area

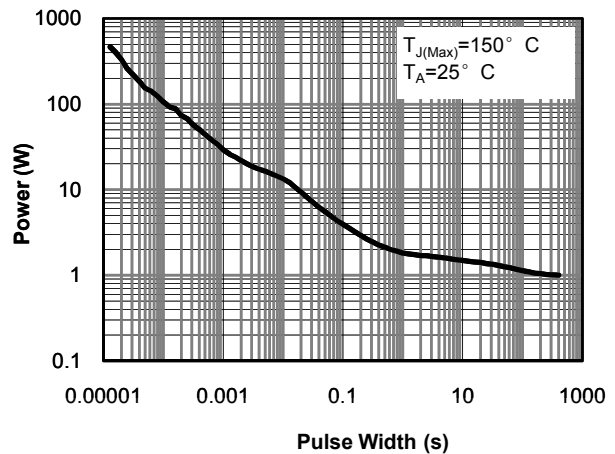


Figure 10: Single Pulse Power Rating Junction-to-Ambient

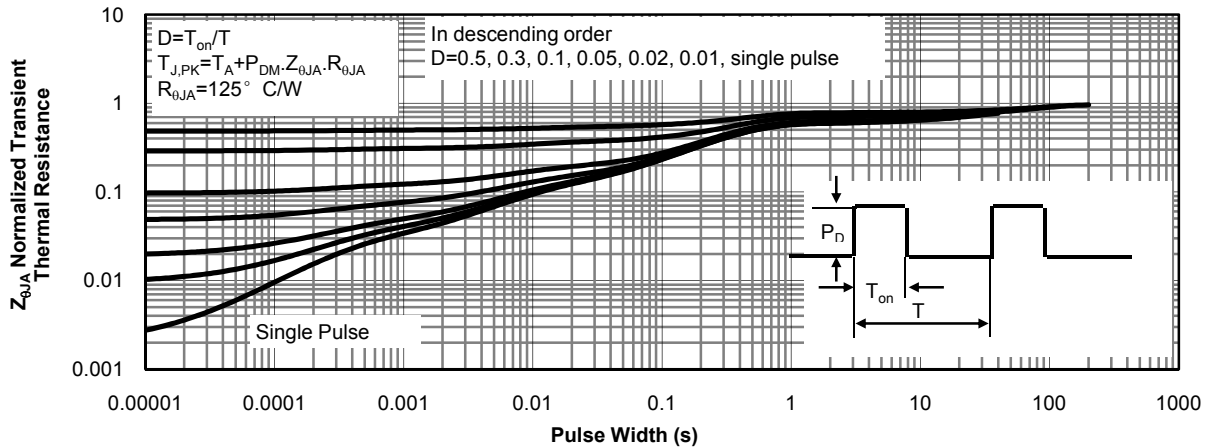


Figure 11: Normalized Maximum Transient Thermal Impedance (Note E)