

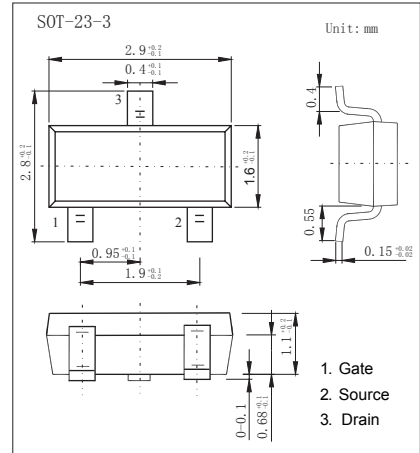
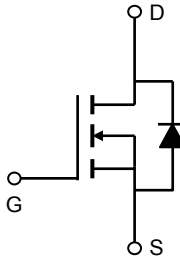


SOT-23 Plastic-Encapsulate MOSFETS

AO3422 N-Channel MOSFET

■ Features

- $V_{DS} (V) = 55V$
- $I_D = 2.1 A (V_{GS} = 4.5V)$
- $R_{DS(ON)} < 160m\Omega (V_{GS} = 4.5V)$
- $R_{DS(ON)} < 200m\Omega (V_{GS} = 2.5V)$



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

Parameter		Symbol	Rating	Unit
Drain-Source Voltage		V_{DS}	55	V
Gate-Source Voltage		V_{GS}	± 12	
Continuous Drain Current	$T_A=25^\circ C$	I_D	2.1	A
	$T_A=70^\circ C$		1.7	
Pulsed Drain Current		I_{DM}	10	
Power Dissipation	$T_A=25^\circ C$	P_D	1.25	W
	$T_A=70^\circ C$		0.8	
Thermal Resistance.Junction- to-Ambient	$t \leq 10s$	R_{thJA}	100	$^\circ C/W$
	Steady-State		150	
Thermal Resistance.Junction- to-Case		R_{thJC}	60	
Junction Temperature		T_J	150	$^\circ C$
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 _{DSS}	I _D =10 mA, V _{GS} =0V	55			V
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} =44V, V _{GS} =0V			1	μA
		V _{DS} =44V, V _{GS} =0V, T _J =55°C			5	
Gate-Body Leakage Current	I _{GSS}	V _{DS} =0V, V _{GS} =±12V			±100	nA
Gate Threshold Voltage	V _{GS(th)}	V _{DS} =V _{GS} , I _D =250 μA	0.6		2	V
Static Drain-Source On-Resistance	R _{DS(on)}	V _{GS} =4.5V, I _D =2.1A			160	mΩ
		V _{GS} =4.5V, I _D =2.1A T _J =125°C			210	
		V _{GS} =2.5V, I _D =1.5A			200	
On state drain current	I _{D(ON)}	V _{GS} =4.5V, V _{DS} =5V	10			A
Forward Transconductance	g _{FS}	V _{DS} =5V, I _D =2.1A		11		S
Input Capacitance	C _{iss}	V _{GS} =0V, V _{DS} =25V, f=1MHz		214	300	pF
Output Capacitance	C _{oss}			31		
Reverse Transfer Capacitance	C _{rss}			12.6		
Gate Resistance	R _g	V _{GS} =0V, V _{DS} =0V, f=1MHz		1.3	3	Ω
Total Gate Charge	Q _g	V _{GS} =4.5V, V _{DS} =27.5V, I _D =2.1A		2.6	3.3	nC
Gate Source Charge	Q _{gs}			0.6		
Gate Drain Charge	Q _{gd}			0.8		
Turn-On DelayTime	t _{d(on)}			2.3		
Turn-On Rise Time	t _r	V _{GS} =10V, V _{DS} =27.5V, R _L =12Ω, R _G =3Ω		2.4		ns
Turn-Off DelayTime	t _{d(off)}			16.5		
Turn-Off Fall Time	t _f			2		
Body Diode Reverse Recovery Time	t _{rr}	I _F = 2.1A, di/dt= 100A/us		20	30	ns
Body Diode Reverse Recovery Charge	Q _{rr}			17		
Maximum Body-Diode Continuous Current	I _S				1	A
Diode Forward Voltage	V _{SD}	I _S =1A, V _{GS} =0V			1	V

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

■ Marking

Marking	H GG
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■ Typical Characteristics

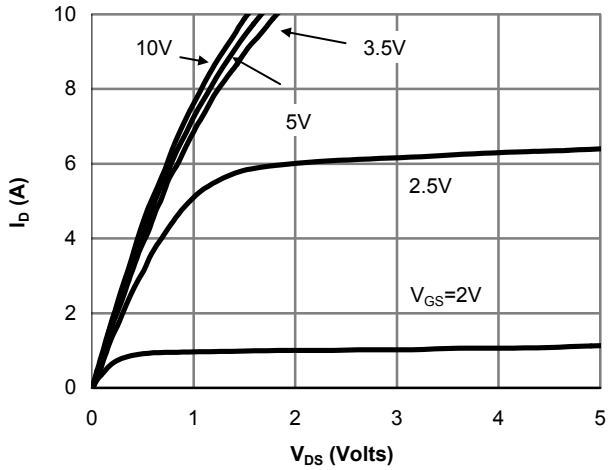


Fig 1: On-Region characteristics

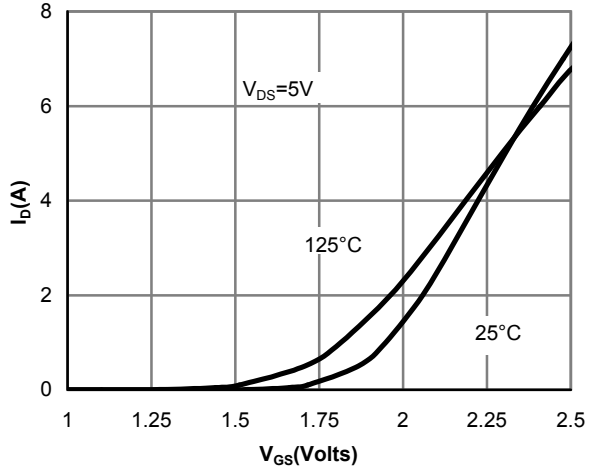


Figure 2: Transfer Characteristics

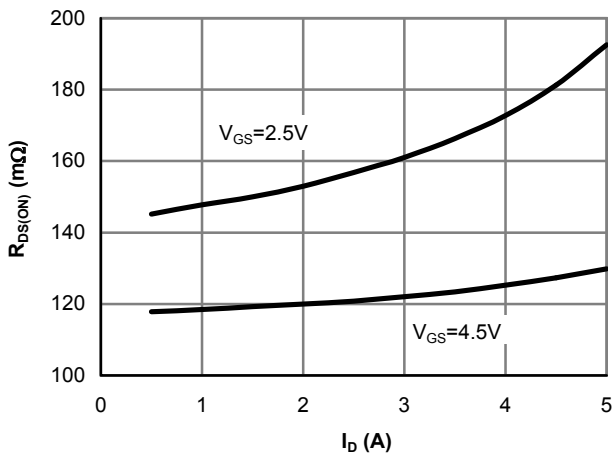


Figure 3: On-Resistance vs. Drain Current and Gate Voltage

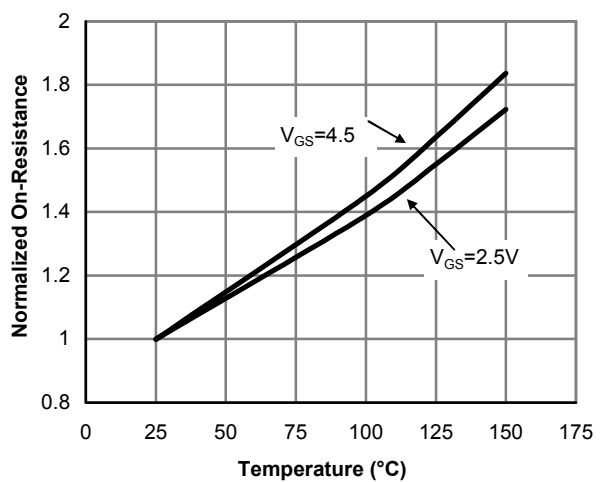


Figure 4: On-Resistance vs. Junction Temperature

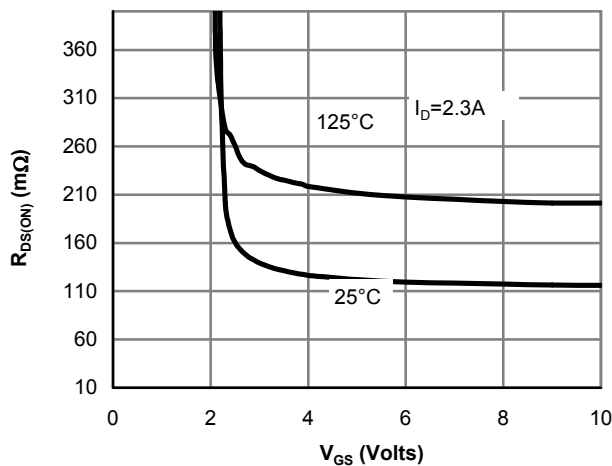


Figure 5: On-Resistance vs. Gate-Source Voltage

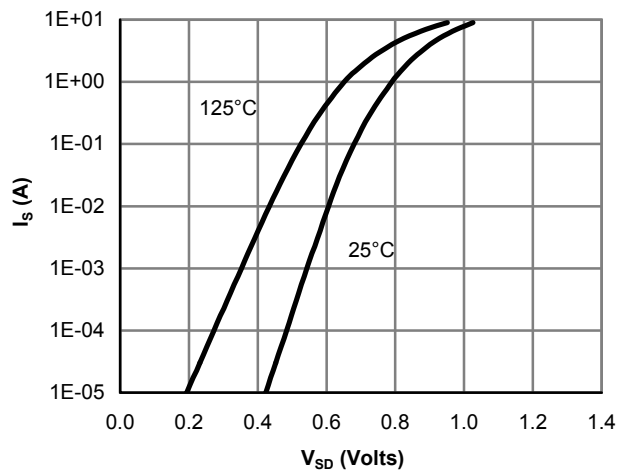


Figure 6: Body-Diode Characteristics

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Typical Characteristics

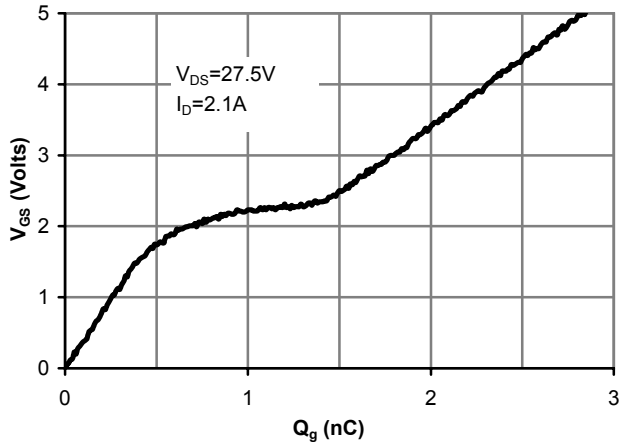


Figure 7: Gate-Charge Characteristics

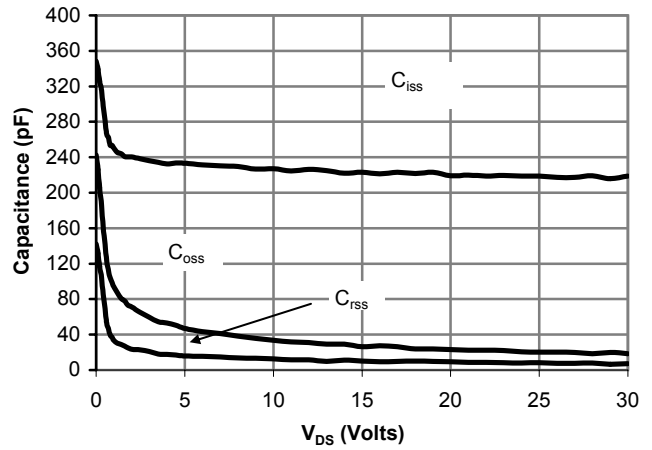


Figure 8: Capacitance Characteristics

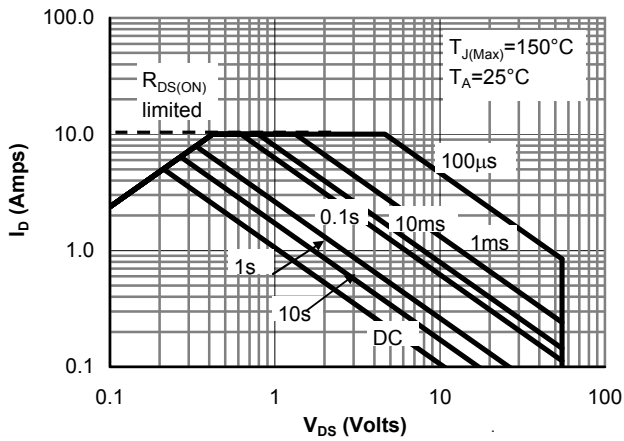


Figure 9: Maximum Forward Biased Safe Operating Area (Note E)

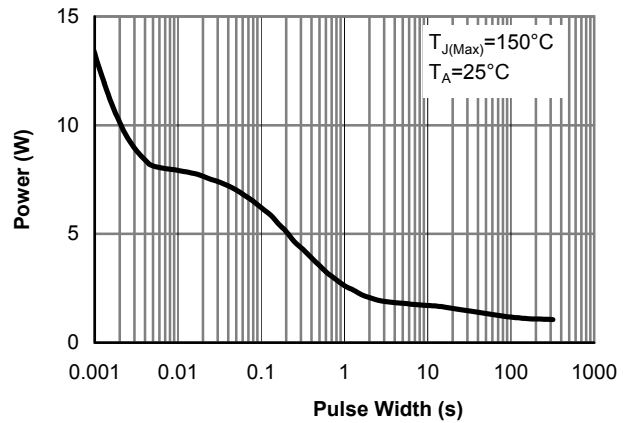


Figure 10: Single Pulse Power Rating Junction-to-Ambient (Note E)

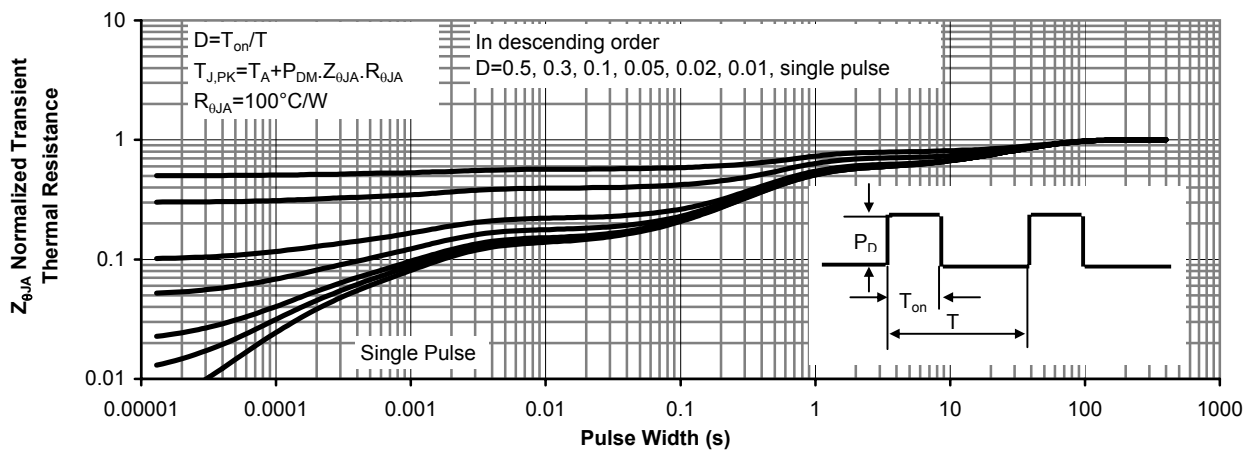


Figure 11: Normalized Maximum Transient Thermal Impedance