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AO3404 N-Channel Enhancement MOSFET

SOT-23-3 Plastic-Encapsulate MOSFETS

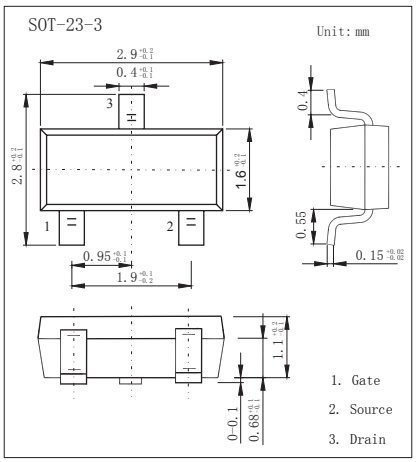
产品规格书

承认书

客户确认：				公司签章：
部门	工程部	品保部	采购部	
签名				
日期				

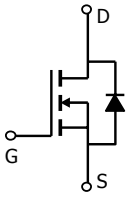
SOT-23-3 Plastic-Encapsulate MOSFETS

AO3404 N-Channel Enhancement MOSFET



■ Features

- V_{DS} (V) = 30V
- I_D =5.8 A (V_{GS}=10V)
- $R_{DS(ON)}$ < 28 mΩ (V_{GS} = 10V)
- $R_{DS(ON)}$ < 43 mΩ (V_{GS} = 4.5V)



■ Absolute Maximum Ratings Ta = 25℃

Parameter		Symbol	Rating	Unit
Drain-Source Voltage		V_{DS}	30	V
Gate-Source Voltage		V_{GS}	±20	
Continuous Drain Current	Ta=25℃	I_D	5.8	A
	Ta=100℃		4.9	
Pulsed Drain Current		I_{DM}	20	
Power Dissipation	Ta=25℃	P_D	1.4	W
	Ta=70℃		1	
Thermal Resistance.Junction- to-Ambient	t ≤ 5sec	R_{thJA}	90	℃/W
	Steady State		125	
Thermal Resistance.Junction- to-Lead		R_{thJL}	60	
Junction Temperature		TJ	150	℃
Storage Temperature Range		Tstg	-55 to 150	

■ Electrical Characteristics Ta = 25℃

Parameter	Symbol	Testconditions	Min	Typ	Max	Unit
Drain-Source Breakdown Voltage	V_{DSS}	I_D=250μA, V_{GS}=0V	30			V
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS}=24V, V_{GS}=0V			1	μA
		V_{DS}=24V, V_{GS}=0V ,TJ=55℃			5	
Gate-Body leakage current	I_{GSS}	V_{DS}=0V, V_{GS}=±20V			100	nA
Gate Threshold Voltage	$V_{GS(th)}$	V_{DS}=V_{GS} I_D=250μA	1	1.9	3	V
On state drain current	$I_{D(ON)}$	V_{GS}=4.5V, V_{DS}=5V	20			A
Static Drain-Source On-Resistance	$R_{DS(ON)}$	V_{GS}=10V, I_D=5.8A		22.5	28	mΩ
		V_{GS}=10V, I_D=5.8A T_J=125℃		31.3	38	
		V_{GS}=4.5V, I_D=5.0A		34.5	43	mΩ
Forward Transconductance	g_{FS}	V_{DS}=5V, I_D=5.8A	10	14.5		S
Diode Forward Voltage	V_{SD}	I_S=1A		0.76	1	V
Maximum Body-Diode Continuous Current	I_S				2.5	A
Reverse Transfer Capacitance	C_{iss}	V_{GS}=0V, V_{DS}=15V, f=1MHz		680	820	pF
Gate resistance	C_{oss}			102		pF
Input Capacitance	C_{rss}			77		pF
Output Capacitance	R_g	V_{GS}=0V, V_{DS}=0V, f=1MHz		3	3.6	Ω
Total Gate Charge (10V)	Q_g	V_{GS}=10V, V_{DS}=15V, I_D=5.8A		13.88	17	nC
Total Gate Charge (4.5V)	Q_g			6.78	8.1	nC
Gate Source Charge	Q_{gs}			1.8		nC
Gate Drain Charge	Q_{gd}			3.12		nC
Turn-On Rise Time	$t_{D(on)}$	V_{GS}=10V, V_{DS}=15V, R_L=2.7Ω ,R_{GEN}=3Ω		4.6	6.5	ns
Turn-Off DelayTime	t_r			3.8	5.7	ns
Turn-Off Fall Time	$t_{D(off)}$			20.9	30	ns
Turn-On DelayTime	t_f			5	7.5	ns
Body Diode Reverse Recovery Time	t_{rr}	I_F=5.8A, dI/dt=100A/μs		16.1	21	ns
Body Diode Reverse Recovery Charge	Q_{rr}	I_F=5.8A, dI/dt=100A/μs		7.4	10	nC

■ Marking

Marking	A4*

■ Typical Characterisitics

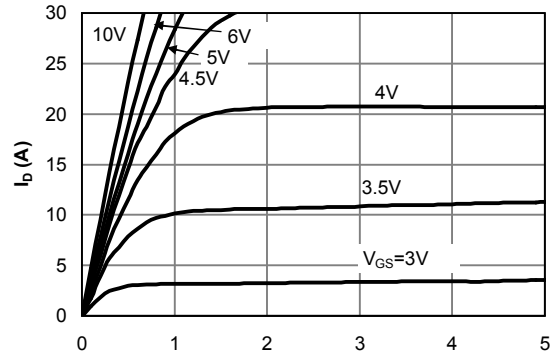


Fig 1: On-Region Characteristics

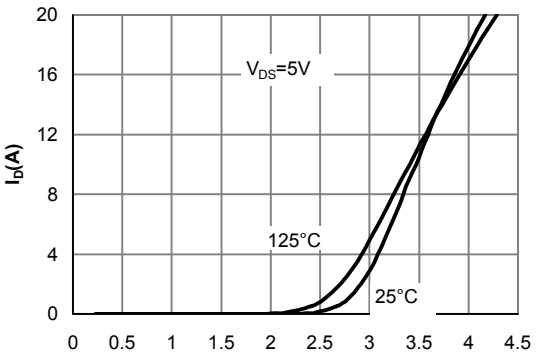


Figure 2: Transfer Characteristics

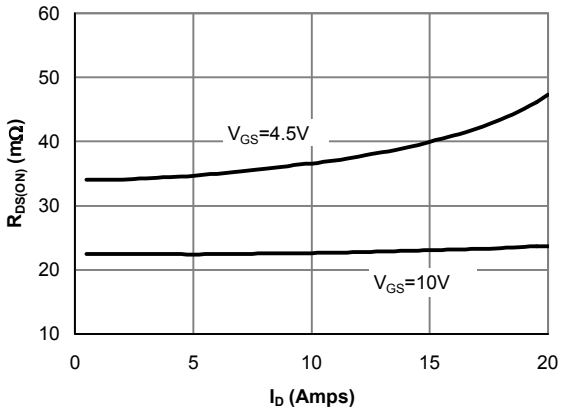


Figure 3: On-Resistance vs. Drain Current and Gate Voltage

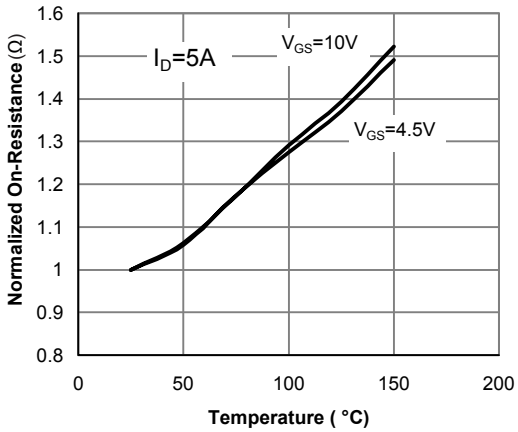


Figure 4: On-Resistance vs. Junction Temperature

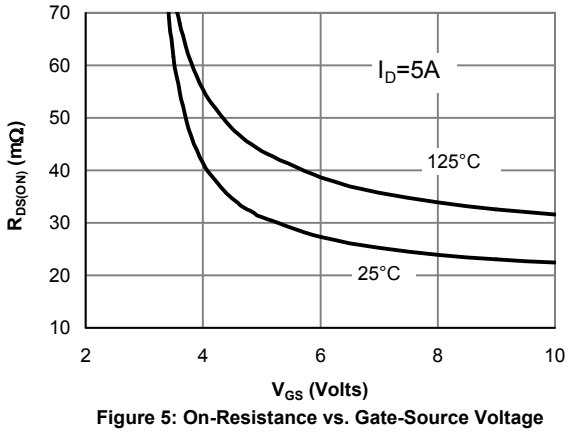


Figure 5: On-Resistance vs. Gate-Source Voltage

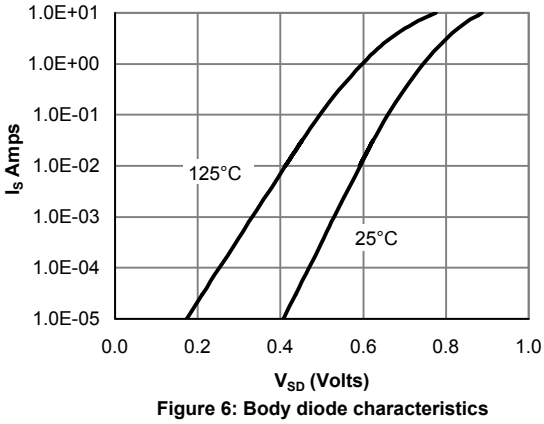


Figure 6: Body diode characteristics

■ Typical Characterisitics

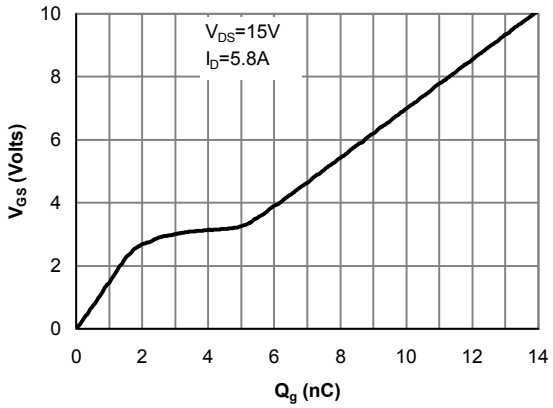


Figure 7: Gate-Charge characteristics

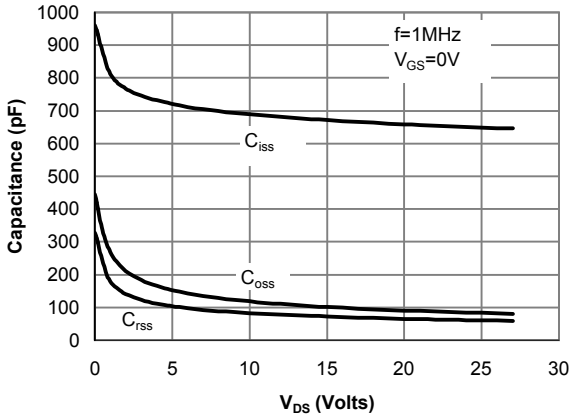


Figure 8: Capacitance Characteristics

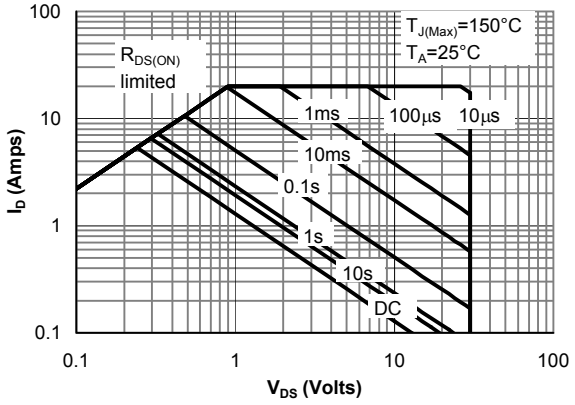


Figure 9: Maximum Forward Biased Safe Operating Area (Note E)

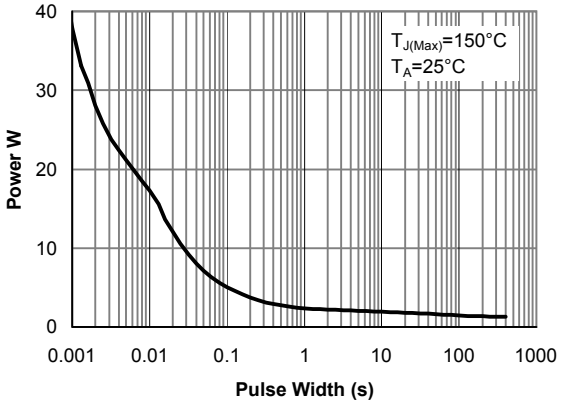


Figure 10: Single Pulse Power Rating Junction-to-Ambient (Note E)

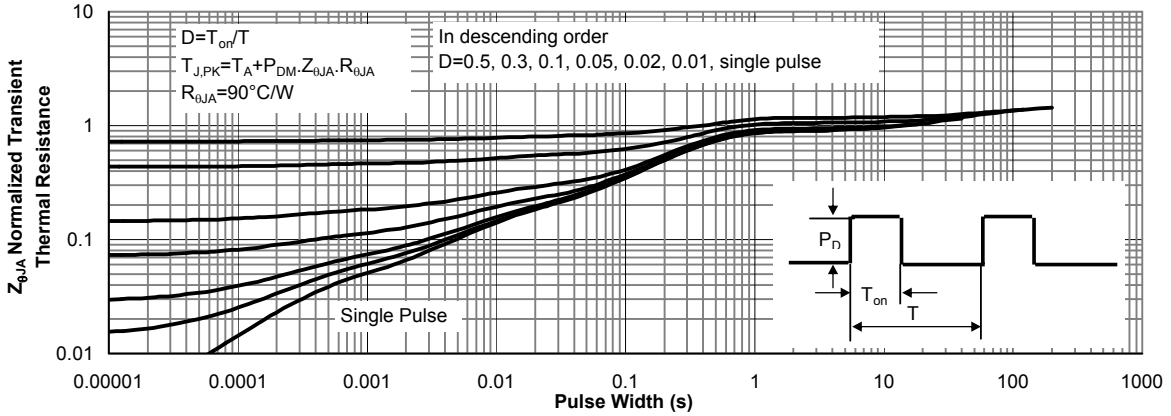


Figure 11: Normalized Maximum Transient Thermal Impedance