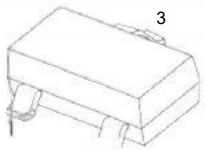
AO3404A

N-Channel Enhancement MOSFET

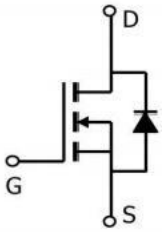
SOT-23

Features

- VDS(V)=30V
- Ib=5.8A VGs=(10V)
- RDS(ON)<25mΩ(VGs=10V)
- RDS(ON)<36mΩ(VGs=4.5V)



1.GATE
2.SOURCE
3.DRAIN



Absolute Maximum Ratings Ta=25℃

Parameter		Symbol	Rating	Unit
Drain-Source Voltage		VDs	30	V
Gate-Source Voltage		VGs	±20	
Continuous Drain Current	Ta=25℃	ID	5.8	A
	Ta=100℃		4.9	
Pulsed Drain Current		IDM	20	
Power Dissipation	Ta=25℃	PD	1.4	W
	Ta=70℃		1	
Thermal Resistance.Junction-to-Ambient	t≤5sec	RthJA	90	℃W
	Steady State		125	
Thermal Resistance.Junction-to-Lead		RthJL	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	VDss	ID=250μA,VGs=0V	30			V
Zero Gate Voltage Drain Current	IDSs	VDs=24V,VGs=0V			1	μA
		VDs=24V,VGs=0V,TJ=55℃			5	
Gate-Body leakage current	IGss	VDs=0V,VGs=±20V			100	nA
Gate Threshold Voltage	VGS(th)	VDs=VGs D=250μA	1	1.9	3	V
On state drain current	ID(ON)	VGs=4.5V,VDs=5V	20			A
Static Drain-Source On-Resistance	RDS(ON)	VGs=10V,ID=5.8A			25	mΩ
		VGs=4.5VID=5.0A			36	mΩ
Forward Transconductance	gFS	VDs=5V,ID=5.8A	10			S
Diode Forward Voltage	VSD	Is=1A		0.76	1	V
Maximum Body-Diode Continuous Current	Is				2.5	A
Reverse Transfer Capacitance	Ciss	VGs=0V,VDs=15V,f=1MHz		680	820	pF
Gate resistance	Coss			102		pF
Input Capacitance	Crss			77		pF
Output Capacitance	Rg	VGs=0V,VDs=0V,f=1MHz		3	3.6	2
Total Gate Charge (10V)	Qg	VGs=10V,VDs=15V,ID=5.8A		13.88	17	nC
Total Gate Charge(4.5V)	Qg			6.78	8.1	nC
Gate Source Charge	Qgs			1.8		nC
Gate Drain Charge	Qgd			3.12		nC
Turn-On Rise Time	tD(on)	VGs=10V,VDs=15V,RL=2.7Q,RGEN=32		4.6	6.5	ns
Turn-Off DelayTime	tr			3.8	5.7	ns
Turn-Off Fall Time	tD(off)			20.9	30	ns
Turn-On DeayTime	tf			5	7.5	ns
Body Diode Reverse Recovery Time	trr	IF=5.8A,di/dt=100Aμs		16.1	21	ns
Body Diode Reverse Recovery Charge	Qr	IF=5.8A,di/dt=100A/μs		7.4	10	nC

Typical Characterisitics

AO3404A

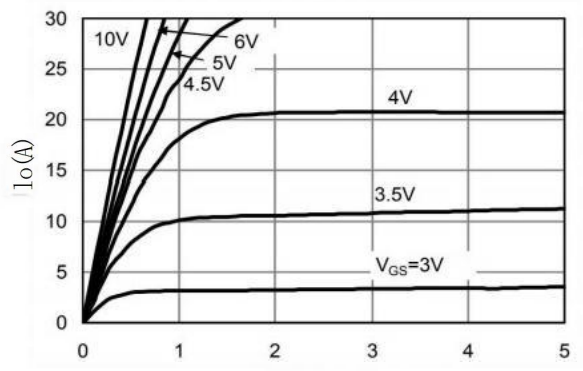


Fig 1:On-Region Characteristics

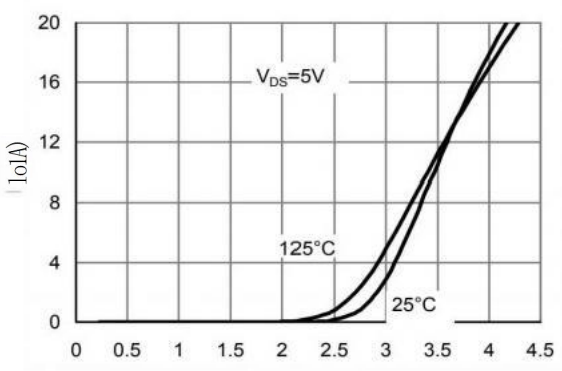


Figure 2:Transfer Characteristics

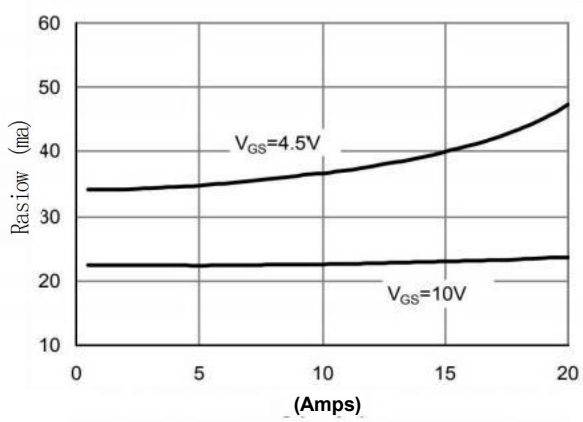


Figure 3:On-Resistance vs.Drain Current and Gate Voltage

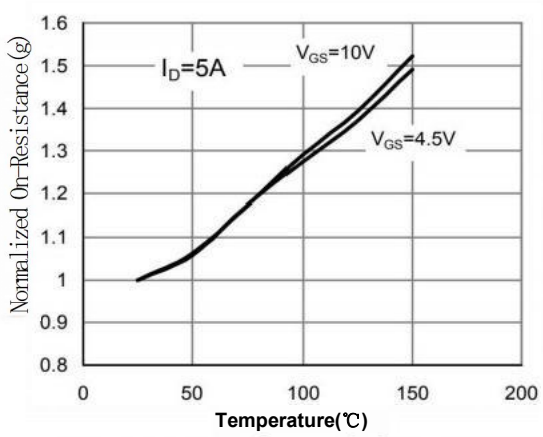


Figure 4:On-Resistance vs.Junction Temperature

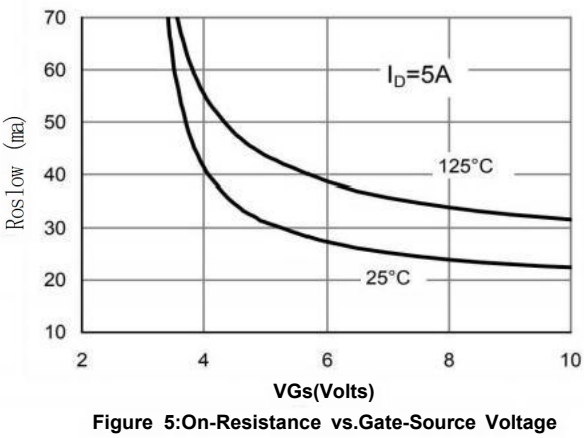


Figure 5:On-Resistance vs.Gate-Source Voltage

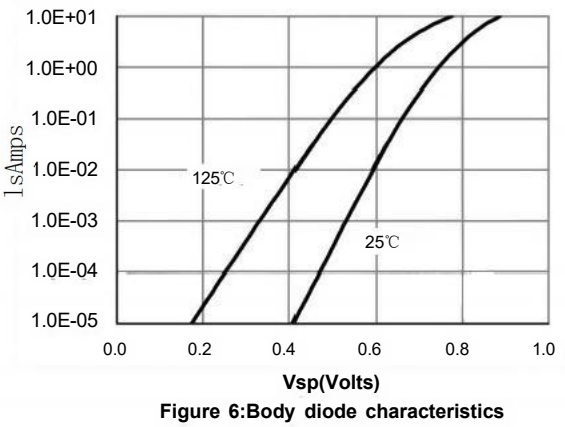


Figure 6:Body diode characteristics

Typical Characterisitics

AO3404A

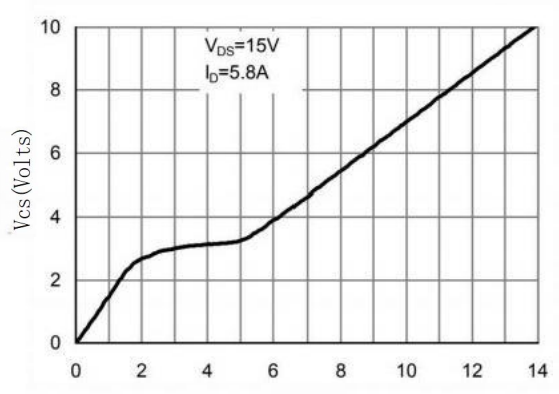


Figure 7:Gate-Charge characteristics

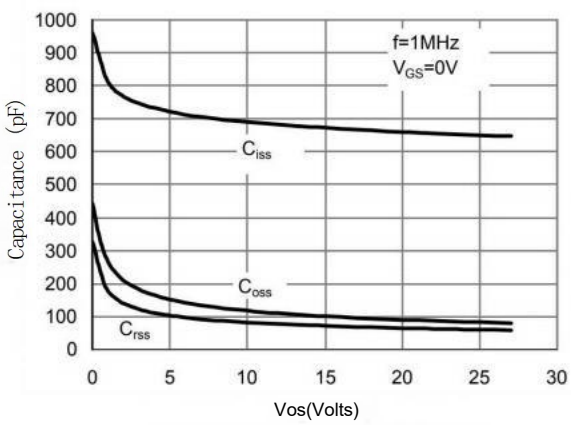


Figure 8:Capacitance Characteristics

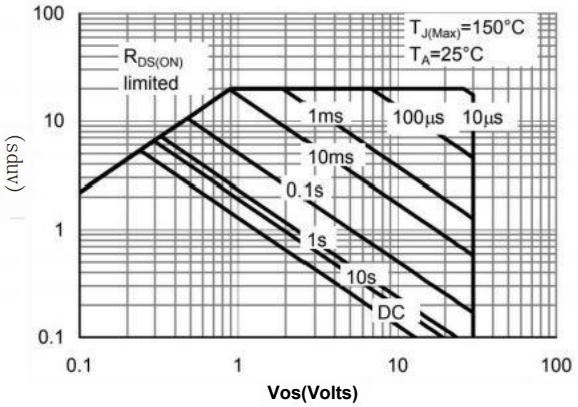


Figure 9:Maximum Forward Biased Safe Operating Area(Note E)

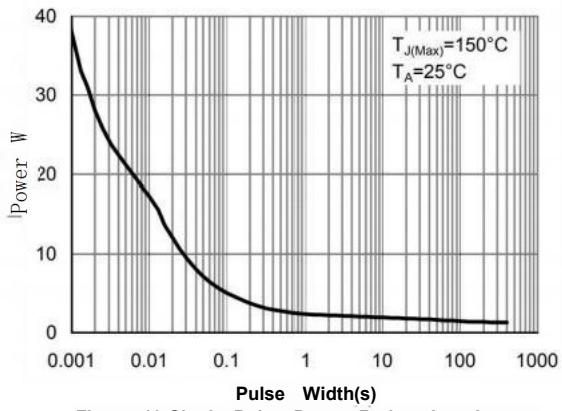


Figure 10:Single Pulse Power Rating Junction-to-Ambient(Note E)

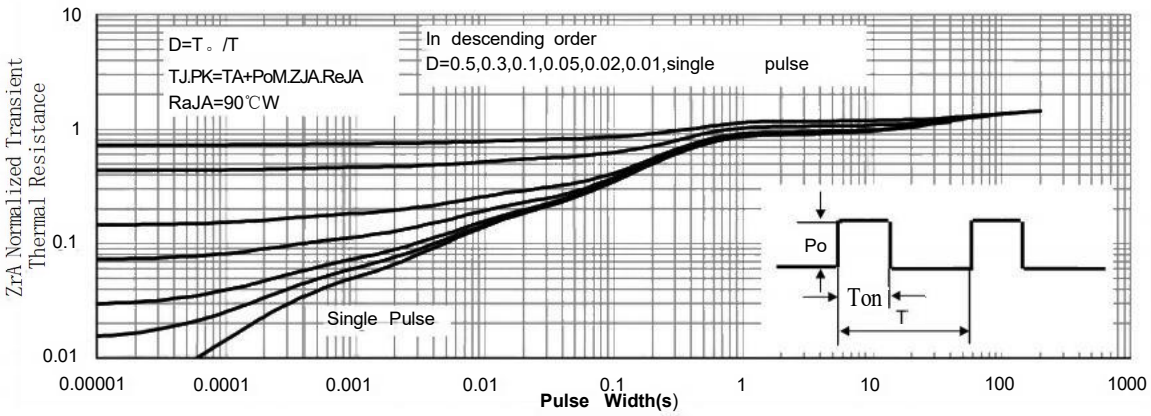
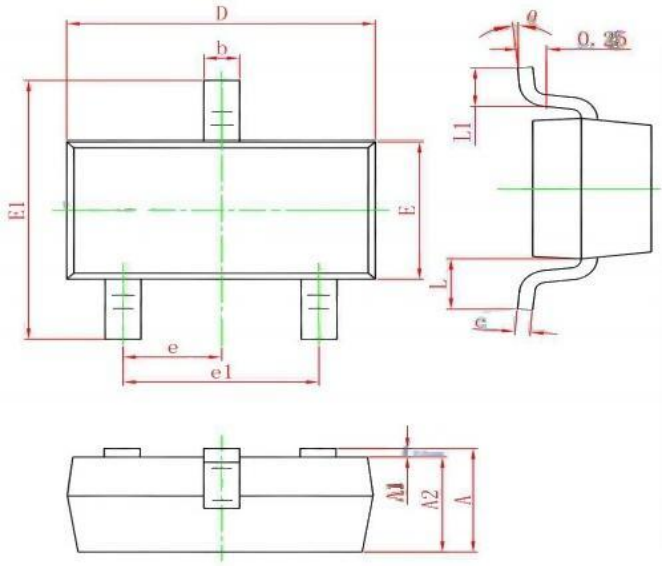


Figure 11:Normalized Maximum Transient Thermal Impedance

SOT 23 PACKAGE OUTLINE DIMENSIONS



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	0.900	1.150	0.035	0.045
A1	0.000	0.100	0.000	0.004
A2	0.900	1.050	0.035	0.041
b	0.300	0.500	0.012	0.020
C	0.080	0.150	0.003	0.006
D	2.800	3.000	0.110	0.118
E	1.200	1.400	0.047	0.055
E1	2.250	2.550	0.089	0.100
e	0.950 TYP.		0.037 TYP.	
e1	1.800	2.000	0.071	0.079
L	0.550 REF.		0.022 REF.	
L1	0.300	0.500	0.012	0.020
θ	0°	8°	0°	8°