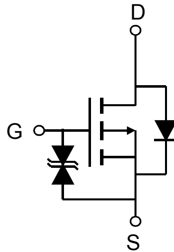
SHENZHEN HAOCHANG SEMICONDUCTOR CO.,LTD.

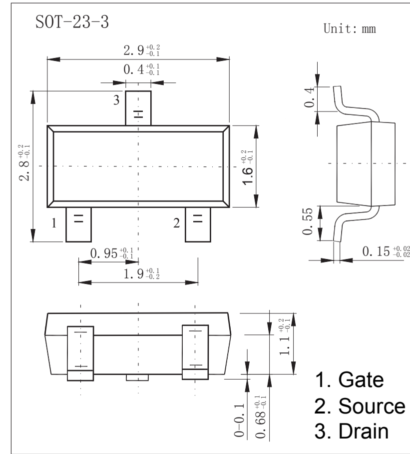
SOT-23-3 Plastic-Encapsulate MOSFETS

AO3423 P-Channel Enhancement MOSFET

■ Features

- V_{DS} (V) =-20V
- I_D =-2.0 A (V_{GS} =-10V)
- $R_{DS(ON)}$ < 92mΩ (V_{GS} =-10V)
- $R_{DS(ON)}$ < 118mΩ (V_{GS} =-4.5V)
- $R_{DS(ON)}$ < 166mΩ (V_{GS} =-2.5V)





■ Absolute Maximum Ratings Ta = 25℃

Parameter		Symbol	Rating	Unit
Drain-Source Voltage		V_{DS}	-20	V
Gate-Source Voltage		V_{GS}	±12	
Continuous Drain Current	Ta = 25℃	I_D	-2	A
	Ta = 70℃		-2	
Pulsed Drain Current (Note.1)		I_{DM}	-17	
Power Dissipation (Note.2)	Ta = 25℃	P_D	1.4	W
	Ta = 70℃		0.9	
Thermal Resistance.Junction- to-Ambient	t≤10 s	R_{thJA}	90	℃/W
	Steady State		125	
Thermal Resistance.Junction- to-Lead		R_{thJL}	60	
Junction Temperature		T_J	150	℃
Junction and Storage Temperature Range		T_{stg}	-55 to 150	

Note.1:Repetitive rating, pulse width limited by junction temperature $T_{J(MAX)}$=150°C. Ratings are based on low frequency and duty cycles to keep initialT_J=25°C.

Note.2: The power dissipation PD is based on $T_{J(MAX)}$=150°C, using ≤ 10s junction-to-ambient thermal resistance.

■ Electrical Characteristics Ta = 25℃

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Drain-Source Breakdown Voltage	V_{DSS}	I_D=-250μA, V_{GS}=0V	-20			V
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS}=-20V, V_{GS}=0V			-1	μA
		V_{DS}=-20V, V_{GS}=0V, T_J=55℃			-5	
Gate-Body leakage current	I_{GSS}	V_{DS}=0V, V_{GS}=±12V			±10	uA
Gate Threshold Voltage	$V_{GS(th)}$	V_{DS}=V_{GS} I_D=-250μA	-0.5	-0.85	-1.2	V
Static Drain-Source On-Resistance	$R_{DS(On)}$	V_{GS}=-10V, I_D=-2A		76	92	mΩ
		V_{GS}=-10V, I_D=-2A T_J=125℃		99	119	
		V_{GS}=-4.5V, I_D=-2A		94	118	
		V_{GS}=-2.5V, I_D=-1A		128	166	
On state drain current	$I_{D(on)}$	V_{GS}=-4.5V, V_{DS}=-5V	-17			A
Forward Transconductance	g_{FS}	V_{DS}=-5V, I_D=-2A		6.8		S
Input Capacitance	C_{iss}	V_{GS}=0V, V_{DS}=-10V, f=1MHz	250	325	400	pF
Output Capacitance	C_{oss}		40	63	85	
Reverse Transfer Capacitance	C_{rss}		22	37	52	
Gate resistance	R_g	V_{GS}=0V, V_{DS}=0V, f=1MHz		11.2	17	Ω
Total Gate Charge	Q_g	V_{GS}=-4.5V, V_{DS}=-10V, I_D=-2A		3.2	4.5	nC
Gate Source Charge	Q_{gs}			0.6		
Gate Drain Charge	Q_{gd}			0.9		
Turn-On DelayTime	$t_{d(on)}$	V_{GS}=-10V, V_{DS}=-10V, R_L=5Ω,R_{GEN}=3Ω		11		ns
Turn-On Rise Time	t_r			5.5		
Turn-Off DelayTime	$t_{d(off)}$			22		
Turn-Off Fall Time	t_f			8		
Body Diode Reverse Recovery Time	t_{rr}	I_F=-2A, d_I/d_t=100A/μs		6.1		
Body Diode Reverse Recovery Charge	Q_{rr}			1.4		nC
Maximum Body-Diode Continuous Current	I_S				-1.5	A
Diode Forward Voltage	V_{SD}	I_S=-1.0A,V_{GS}=0V		-0.76	-1	V

■ Marking

Marking	AS*

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■ Typical Characterisitics

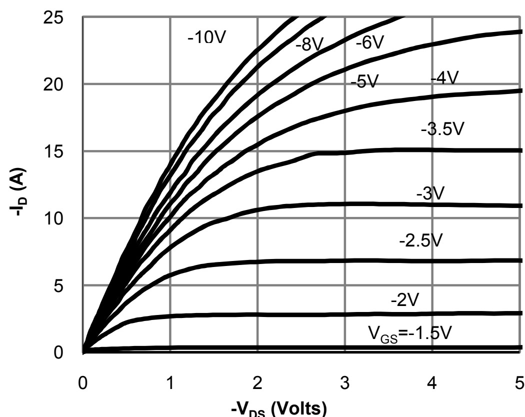

Fig 1: On-Region Characteristics

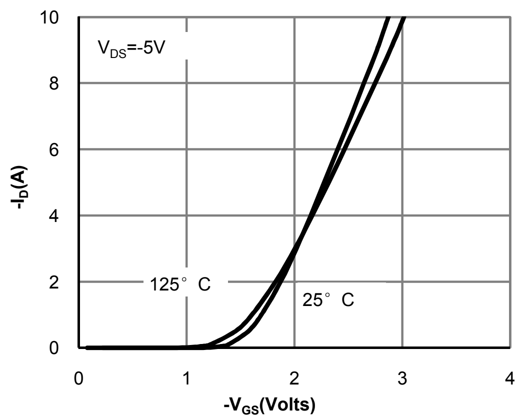

Figure 2: Transfer Characteristics

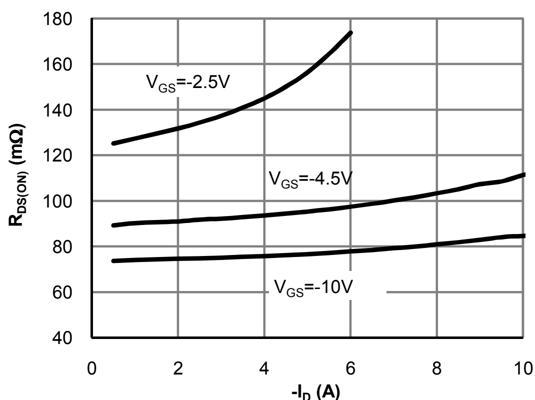

Figure 3: On-Resistance vs. Drain Current and Gate Voltage

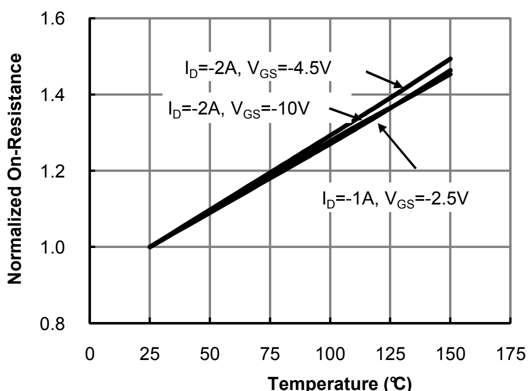

Figure 4: On-Resistance vs. Junction Temperature

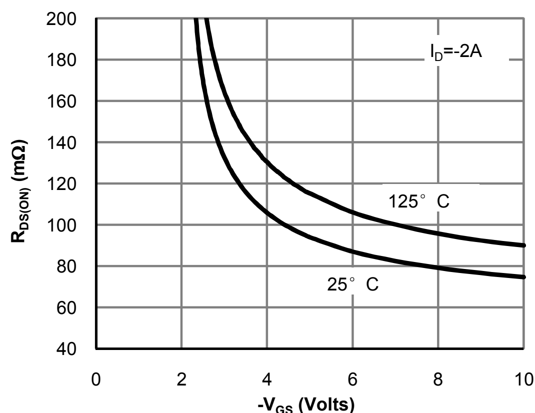

Figure 5: On-Resistance vs. Gate-Source Voltage

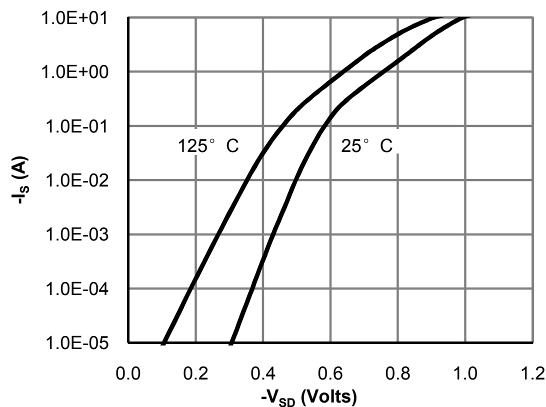

Figure 6: Body-Diode Characteristics