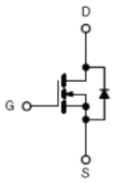
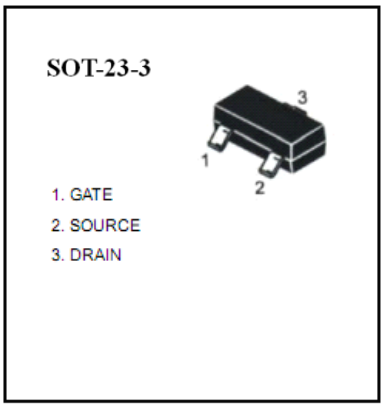
SOT-23-3 Plastic-Encapsulate Transistors

2302 MOSFET(N-Channel)

FEATURES

TrenchFET Power MOSFET





MARKING: A2SHB

MAXIMUM RATINGS (TA=25℃ unless otherwise noted)

Symbol	Parameter	Value	Units
V_{DS}	Drain-Source voltage	20	V
V_{GS}	Gate-Source voltage	±10	V
I_D	Drain current	-2.9	A
P_D	Power Dissipation	1	W
Tj	Junction Temperature	150	℃
Tstg	Storage Temperature	-55-150	℃

ELECTRICAL CHARACTERISTICS (Tamb=25℃unless otherwise specified)

Parameter	Symbol	Test conditions	MIN	TYP	MAX	UNIT
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	V_{GS}=0V,I_D=250uA	20			V
Gate-Threshold Voltage	$V_{th(GS)}$	V_{DS}= V_{GS}, I_D=250 uA	0.4	0.7	1	V
Gate-body Leakage	I_{GSS}	V_{DS}=0V, V_{GS}=±10V			±100	nA
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS}=20V, V_{GS}=0V			1	uA
Drain-Source On-Resistance	$r_{DS(ON)}$	V_{GS}=2.5V, I_D=2.5A		64	110	mΩ
		V_{GS}=4.5V, I_D=2.9A		89	140	mΩ
Forward Trans conductance	gfs	V_{DS}=5V, I_D=2.9A		9.5		s
Dynamic Characteristics						
Input Capacitance	Ciss	V_{DS}=10V, V_{GS}=0V, f=1MHz		300		pF
Output Capacitance	Coss			120		
Reverse Transfer Capacitance	Crss			80		
Switching Capacitance						
Turn-on Delay Time	td(on)	V_{DD}=10V, I_D=1A, V_{GS}=4.5V R_{GEN}=10Ω		10	15	nS
Turn-on Rise Time	t_r			50	85	nS
Turn-off Delay Time	td(off)			17	45	nS
Turn-off Fall Time	t_f			10	20	nS
Total Gate Charge	Q_g	V_{DS}=10V, I_D=3A, V_{GS}=2.5V,		4.0	10	nC
Gate-Source Charge	Q_{gs}			0.65		nC
Gate-Drain Charge	Q_{gd}			1.2		nC
Drain-Source Diode Characteristics						
Diode Forward Voltage	V_{SD}	V_{GS}=0V, I_D=1.3A		0.75	1.2	V
Diode Forward Current	Is				2.9	A

Typical Characteristics 2302

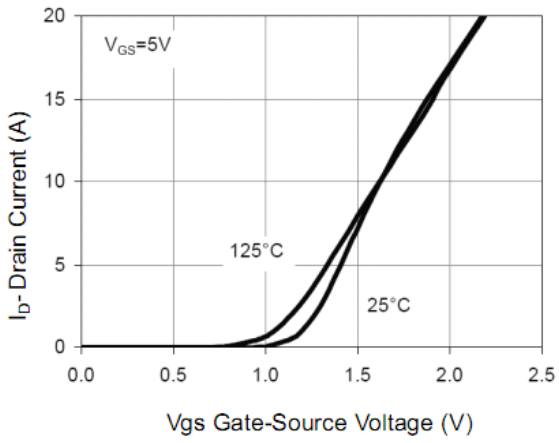


Figure 7 Transfer Characteristics

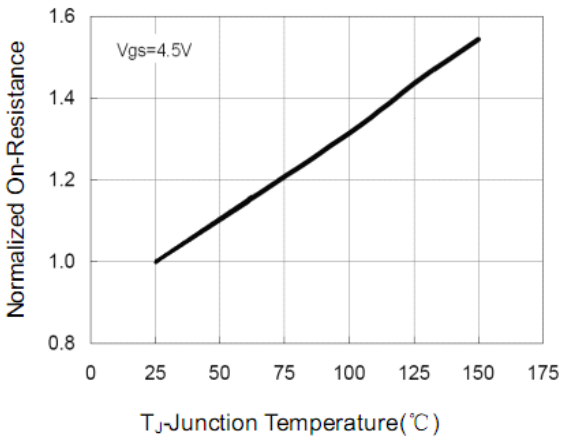


Figure 8 Drain-Source On-Resistance

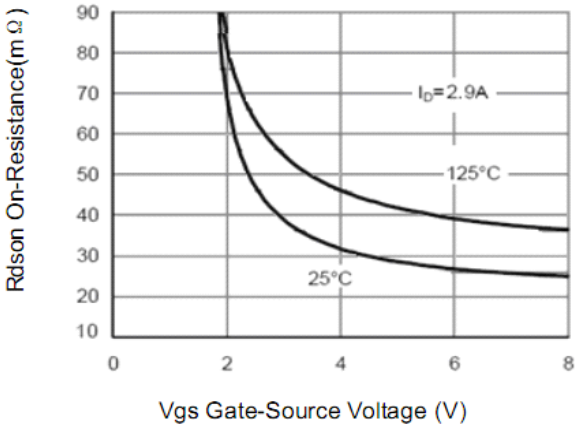


Figure 9 Rdson vs Vgs

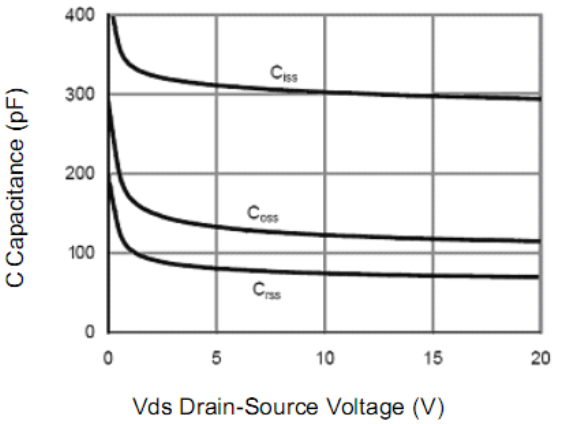


Figure 10 Capacitance vs Vds

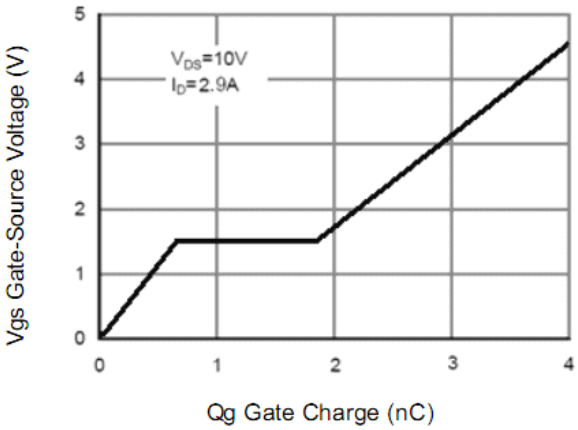


Figure 11 Gate Charge

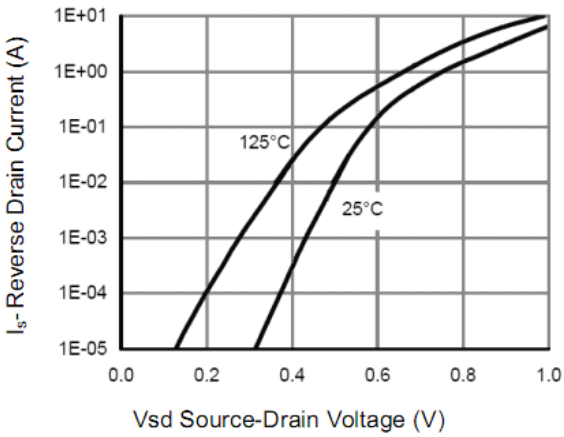


Figure 12 Source- Drain Diode Forward