

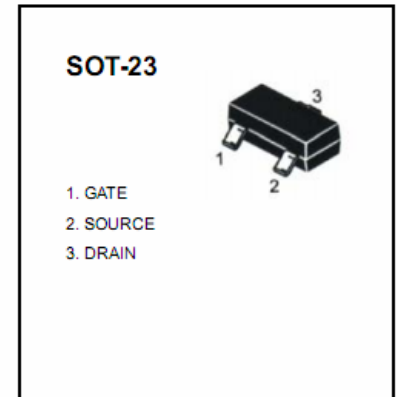
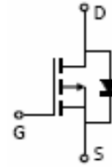
SOT-23 Plastic-Encapsulate Transistors

SI2301 MOSFET(P-Channel)

FEATURES

TrenchFET Power MOSFET

MARKING: A1SHB



MAXIMUM RATINGS (TA=25°C unless otherwise noted)

Symbol	Parameter	Value	Units
V _{DS}	Drain-Source voltage	-20	V
V _{GS}	Gate-Source voltage	±12	V
I _D	Drain current	-3	A
P _D	Power Dissipation	1	W
T _j	Junction Temperature	150	°C
T _{stg}	Storage Temperature	-55-150	°C

ELECTRICAL CHARACTERISTICS (T_{amb}=25°C 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} =± 12V			± 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} =-4. 5V, I _D =-3A		64	110	m Ω
		V _{GS} =-2. 5V, I _D =-2A		89	140	m Ω
Forward Trans conductance	g _{fs}	V _{DS} =-5V, I _D =-2.8A		9.5		s
Dynamic Characteristics						
Input Capacitance	C _{iss}	V _{DS} =-10V, V _{GS} =0V, f=1MHz		405		pF
Output Capacitance	C _{oss}			75		
Reverse Transfer Capacitance	C _{rss}			55		
Switching Capacitance						
Turn-on Delay Time	t _{d(on)}	V _{DD} =-10V, I _D =-1A, V _{GS} =-4. 5V R _{GEN} =10 Ω		11		nS
Turn-on Rise Time	t _r			35		nS
Turn-off Delay Time	t _{d(off)}			30		nS
Turn-off Fall Time	t _f			10		nS
Total Gate Charge	Q _g	V _{DS} =-10V, I _D =-3A, V _{GS} =-2. 5V,		3.3	12	nC
Gate-Source Charge	Q _{gs}			0.7		nC
Gate-Drain Charge	Q _{gd}			1.3		nC
Drain-Source Diode Characteristics						
Diode Forward Voltage	V _{SD}	V _{GS} =0V, I _D =-1. 3A			-1.2	V
Diode Forward Current	I _S				-1.3	A

Typical Characteristics

SI2301

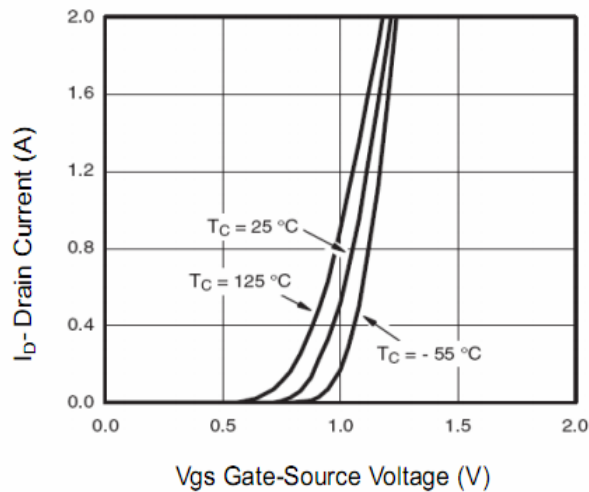


Figure 7 Transfer Characteristics

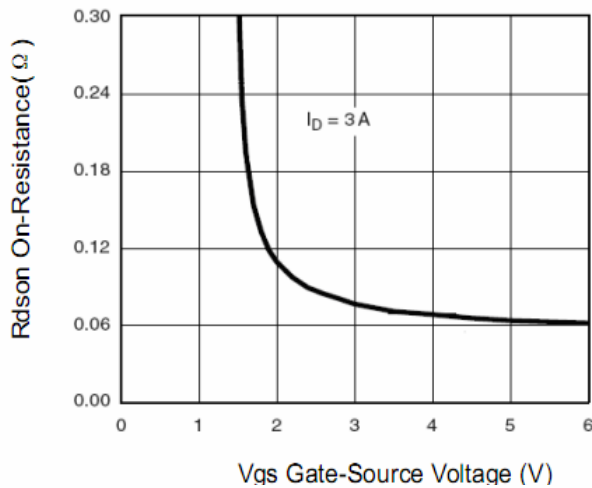


Figure 9 Rdson vs Vgs

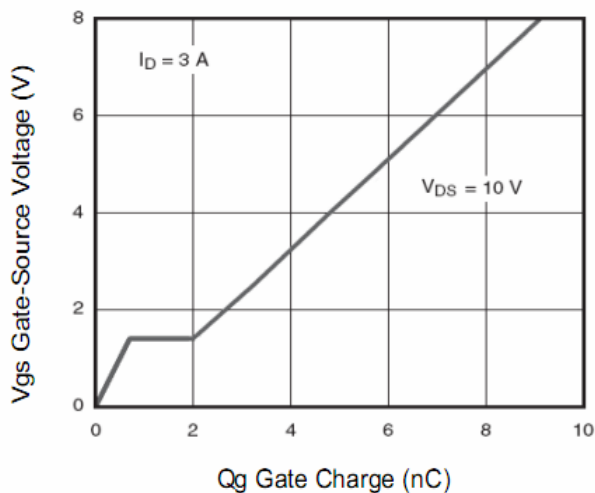


Figure 11 Gate Charge

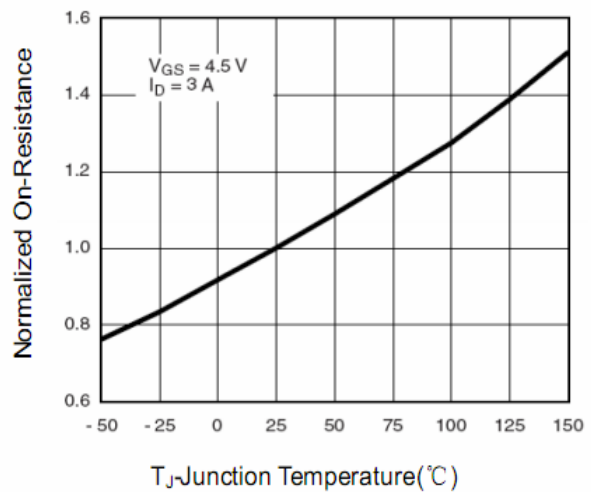


Figure 8 Drain-Source On-Resistance

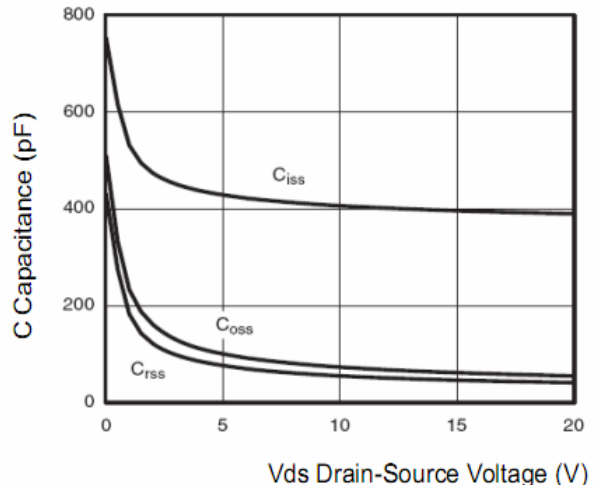


Figure 10 Capacitance vs Vds

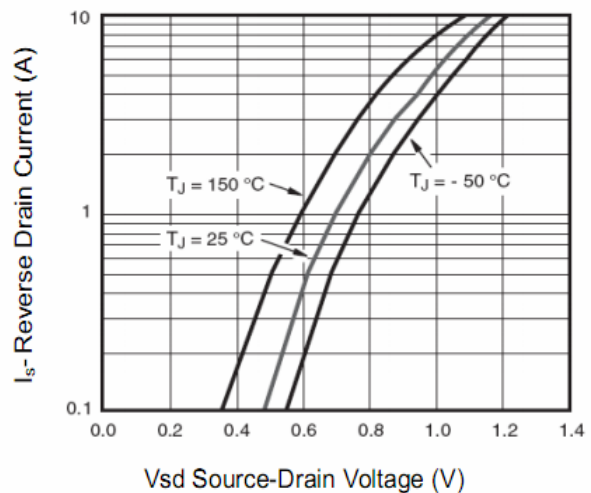


Figure 12 Source-Drain Diode Forward