

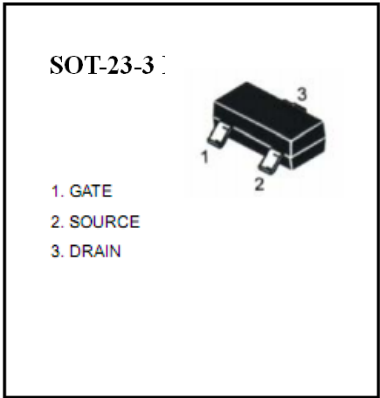
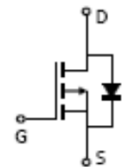
SOT-23 -3Plastic-Encapsulate Transistors

SI2301 MOSFET(P-Channel)

FEATURES

TrenchFET Power MOSFET

MARKING: A1SHB



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

Symbol	Parameter	Value	Units
Vds	Drain-Source voltage	-20	V
Vgs	Gate-Source voltage	± 12	V
Id	Drain current	-3	A
Pd	Power Dissipation	1	W
Tj	Junction Temperature	150	°C
Tstg	Storage Temperature	-55-150	°C

ELECTRICAL CHARACTERISTICS (Tamb=25°C unless otherwise specified)

Parameter	Symbol	Test conditions	MIN	TYP	MAX	UNIT
Drain-Source Breakdown Voltage	V(BR)DSS	VGS=0V, ID=-250uA	-20			V
Gate-Threshold Voltage	Vth(GS)	VDS= VGS, ID=-250 uA	-0.4	-0.7	-1	V
Gate-body Leakage	IGSS	VDS=0V, VGS=± 12V			±100	nA
Zero Gate Voltage Drain Current	IDSS	VDS=-20V, VGS=0V			-1	uA
Drain-Source On-Resistance	rDS(ON)	VGS=-4. 5V, ID=-3A		64	110	m Ω
		VGS=-2. 5V, ID=-2A		89	140	m Ω
Forward Trans conductance	gfs	VDS=-5V, ID=-2.8A		9.5		s
Dynamic Characteristics						
Input Capacitance	Ciss	VDS=-10V, VGS=0V, f=1MHz		405		pF
Output Capacitance	Coss			75		
Reverse Transfer Capacitance	Crss			55		
Switching Capacitance						
Turn-on Delay Time	td(on)	VDD=-10V, ID=-1A, VGS=-4. 5V RGEN=10 Ω		11		nS
Turn-on Rise Time	tr			35		nS
Turn-off Delay Time	td(off)			30		nS
Turn-off Fall Time	tr			10		nS
Total Gate Charge	Qg	VDS=-10V, ID=-3A, VGS=-2. 5V,		3.3	12	nC
Gate-Source Charge	Qgs			0.7		nC
Gate-Drain Charge	Qgd			1.3		nC
Drain-Source Diode Characteristics						
Diode Forward Voltage	VSD	VGS=0V, ID=-1. 3A			-1.2	V
Diode Forward Current	Is				-1.3	A

Typical Characteristics

SI2301

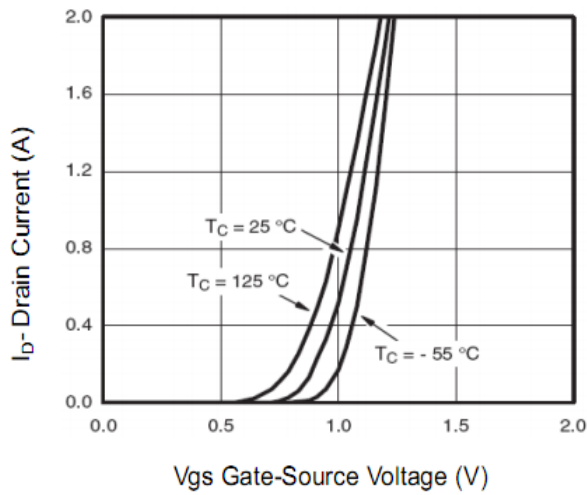


Figure 7 Transfer Characteristics

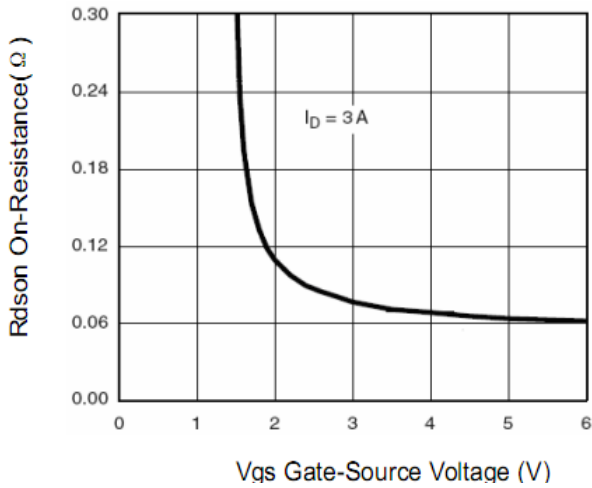


Figure 9 $R_{DS(on)}$ vs V_{GS}

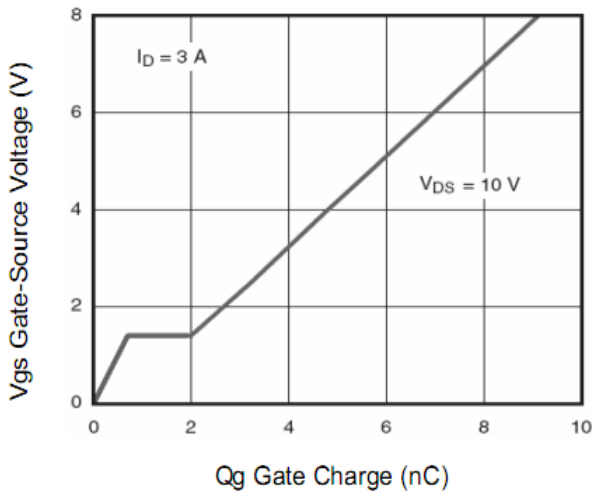


Figure 11 Gate Charge

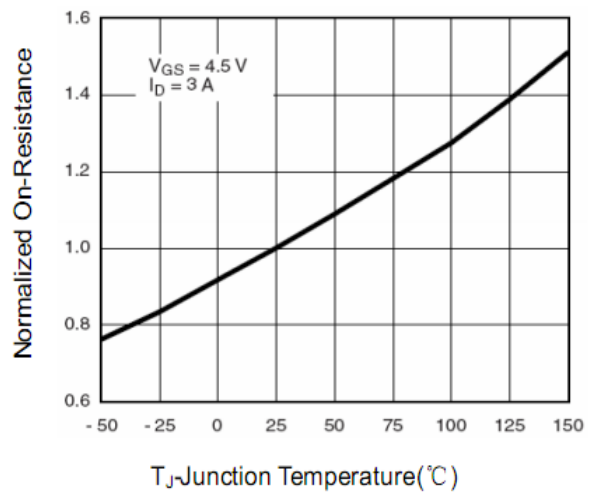


Figure 8 Drain-Source On-Resistance

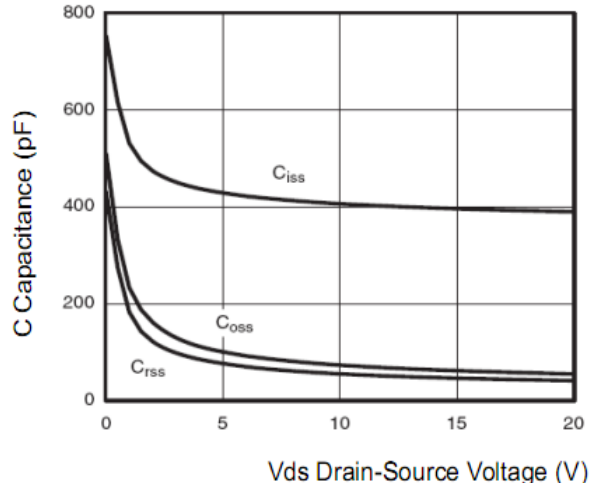


Figure 10 Capacitance vs V_{DS}

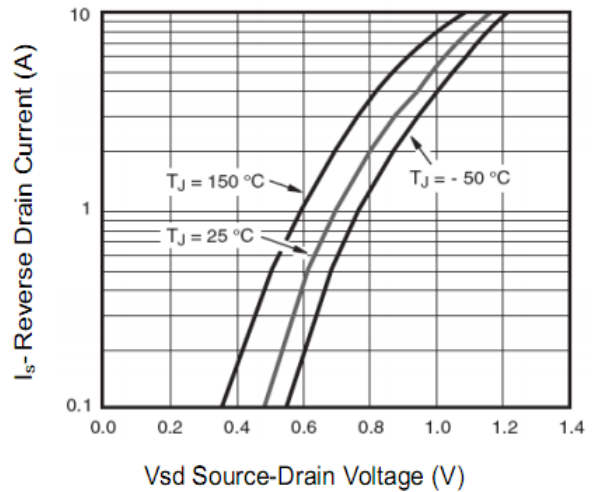


Figure 12 Source-Drain Diode Forward