

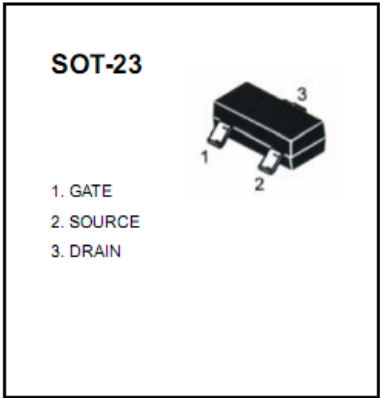
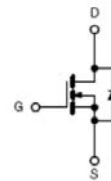
# SOT-23 Plastic-Encapsulate Transistors

## SI2300 MOSFET(N-Channel)

### FEATURES

TrenchFET Power MOSFET

MARKING: C009T



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

Symbol	Parameter	Value	Units
V <sub>DS</sub>	Drain-Source voltage	20	V
V <sub>GS</sub>	Gate-Source voltage	±10	V
I <sub>D</sub>	Drain current	2.9	A
P <sub>D</sub>	Power Dissipation	1	W
T <sub>j</sub>	Junction Temperature	150	°C
T <sub>stg</sub>	Storage Temperature	-55-150	°C

### ELECTRICAL CHARACTERISTICS (T<sub>amb</sub>=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	0.5	0.75	1.2	V
Gate-body Leakage	IGSS	VDS=0V, VGS=±10V			±100	nA
Zero Gate Voltage Drain Current	IDSS	VDS=20V, VGS=0V			1	uA
Drain-Source On-Resistance	rDS(ON)	VGS=2.5V, ID=2.5A		37	59	mΩ
		VGS=4.5V, ID=2.9A		30	45	mΩ
Forward Trans conductance	gfs	VDS=5V, ID=2.9A		9.5		s
Dynamic Characteristics						
Input Capacitance	Ciss	VDS=10V, VGS=0V, f=1MHz		300		pF
Output Capacitance	Coss			120		
Reverse Transfer Capacitance	Crss			80		
Switching Capacitance						
Turn-on Delay Time	td(on)	VDD=10V, ID=2.9A, VGS=4.5V RGEN=6Ω		10	15	nS
Turn-on Rise Time	tr			50	85	nS
Turn-off Delay Time	td(off)			17	45	nS
Turn-off Fall Time	tf			10	20	nS
Total Gate Charge	Qg	VDS=10V, ID=2.9A, VGS=4.5V,		4.0	10	nC
Gate-Source Charge	Qgs			0.65		nC
Gate-Drain Charge	Qgd			1.2		nC
Drain-Source Diode Characteristics						
Diode Forward Voltage	VSD	VGS=0V, IS=2.9A		0.75	1.2	V
Diode Forward Current	IS				2.9	A

# Typical Characteristics

SI2300

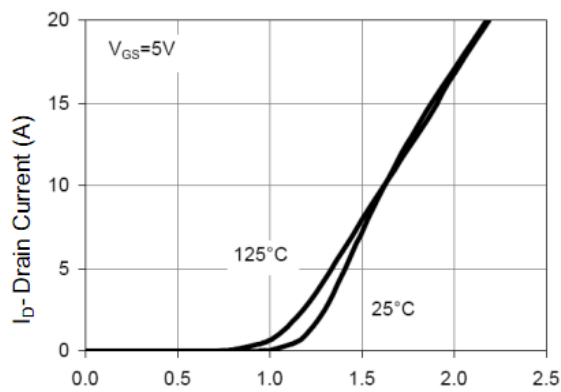


Figure 7 Transfer Characteristics

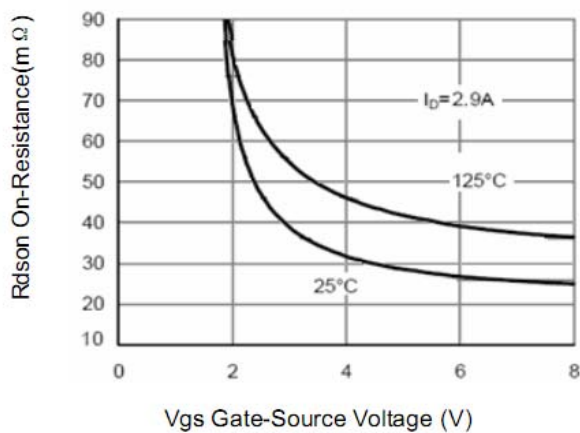


Figure 9 Rdson vs Vgs

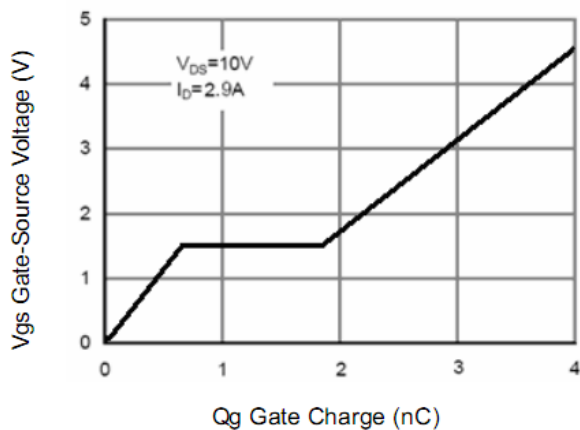


Figure 11 Gate Charge

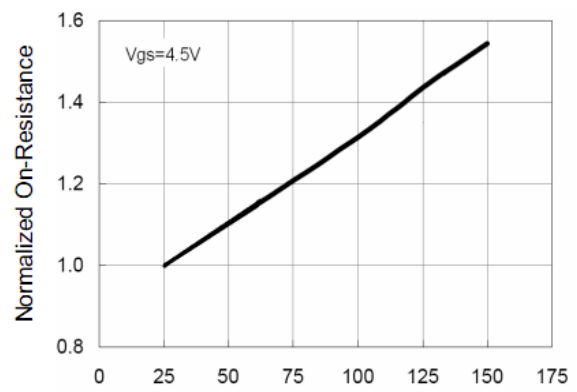


Figure 8 Drain-Source On-Resistance

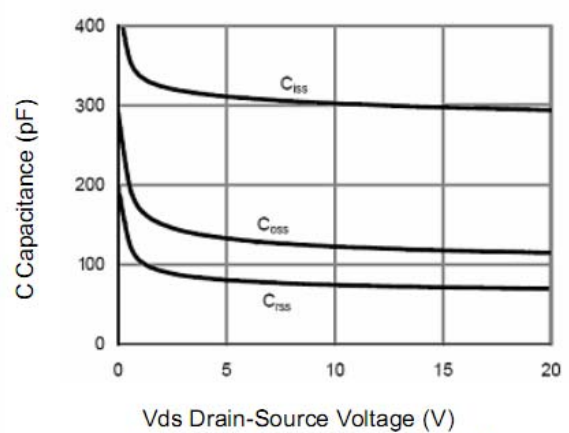


Figure 10 Capacitance vs Vds

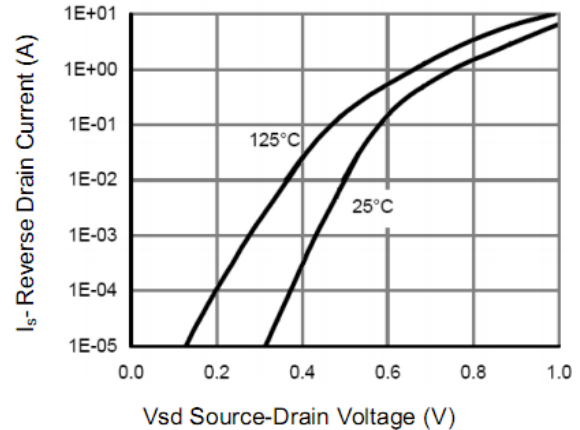


Figure 12 Source- Drain Diode Forward