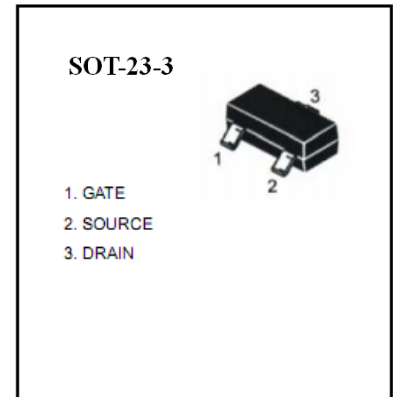
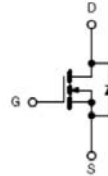


# SOT-23-3 Plastic-Encapsulate Transistors

## SI2300 MOSFET(N-Channel)

### FEATURES

TrenchFET Power MOSFET



MARKING: 00A8C

### 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 <sub>(BR)DSS</sub>	V <sub>GS</sub> =0V, I <sub>D</sub> =250uA	20			V
Gate-Threshold Voltage	V <sub>th(GS)</sub>	V <sub>DS</sub> = V <sub>GS</sub> , I <sub>D</sub> =250 uA	0.5	0.75	1.2	V
Gate-body Leakage	I <sub>GSS</sub>	V <sub>DS</sub> =0V, V <sub>GS</sub> =± 10V			± 100	nA
Zero Gate Voltage Drain Current	I <sub>DSS</sub>	V <sub>DS</sub> =20V, V <sub>GS</sub> =0V			1	uA
Drain-Source On-Resistance	r <sub>DS(ON)</sub>	V <sub>GS</sub> =2. 5V, I <sub>D</sub> =2.5A		37	59	m Ω
		V <sub>GS</sub> =4. 5V, I <sub>D</sub> =2.9A		30	45	m Ω
Forward Trans conductance	g <sub>fs</sub>	V <sub>DS</sub> =5V, I <sub>D</sub> =2.9A		9.5		s
Dynamic Characteristics						
Input Capacitance	C <sub>iss</sub>	V <sub>DS</sub> =10V, V <sub>GS</sub> =0V, f=1MHz		300		pF
Output Capacitance	C <sub>oss</sub>			120		
Reverse Transfer Capacitance	C <sub>rss</sub>			80		
Switching Capacitance						
Turn-on Delay Time	t <sub>d(on)</sub>	V <sub>DD</sub> =10V, I <sub>D</sub> =2. 9A, V <sub>GS</sub> =4. 5V R <sub>GEN</sub> =6 Ω		10	15	nS
Turn-on Rise Time	t <sub>r</sub>			50	85	nS
Turn-off Delay Time	t <sub>d(off)</sub>			17	45	nS
Turn-off Fall Time	t <sub>f</sub>			10	20	nS
Total Gate Charge	Q <sub>g</sub>	V <sub>DS</sub> =10V, I <sub>D</sub> =2. 9A, V <sub>GS</sub> =4. 5V,		4.0	10	nC
Gate-Source Charge	Q <sub>gs</sub>			0.65		nC
Gate-Drain Charge	Q <sub>gd</sub>			1.2		nC
Drain-Source Diode Characteristics						
Diode Forward Voltage	V <sub>SD</sub>	V <sub>GS</sub> =0V, I <sub>S</sub> =2. 9A		0.75	1.2	V
Diode Forward Current	I <sub>S</sub>				2.9	A

## Typical Characteristics

SI2300

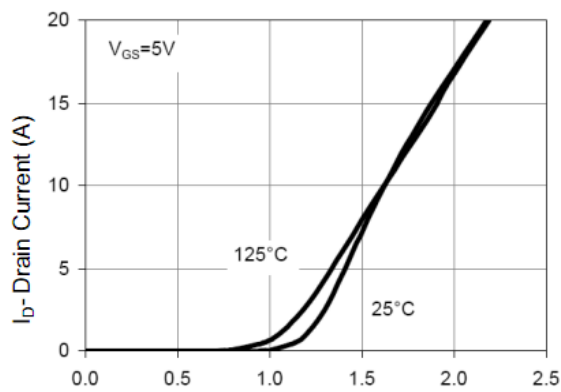


Figure 7 Transfer Characteristics

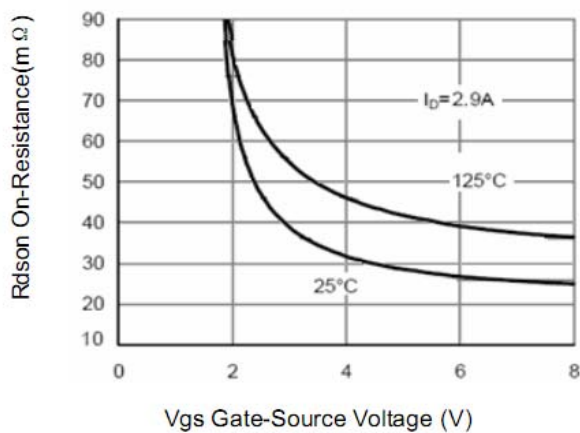


Figure 9 Rdson vs Vgs

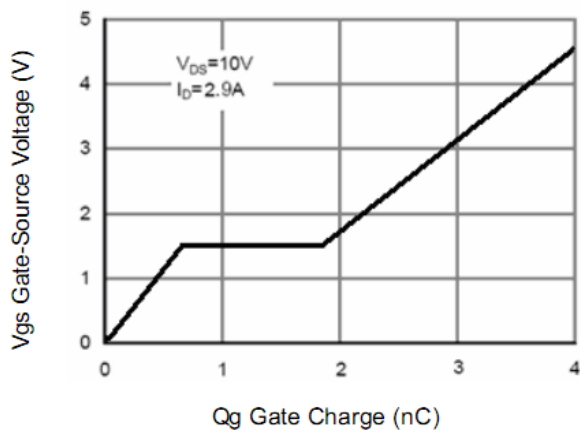


Figure 11 Gate Charge

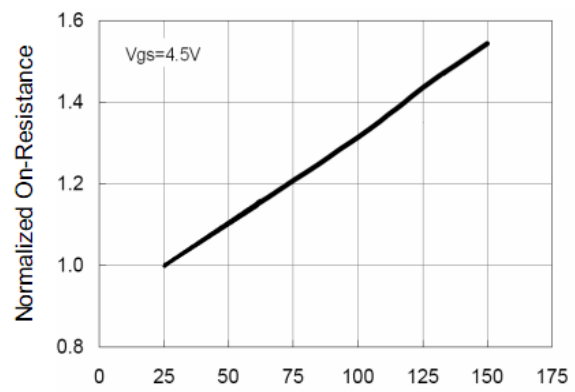


Figure 8 Drain-Source On-Resistance

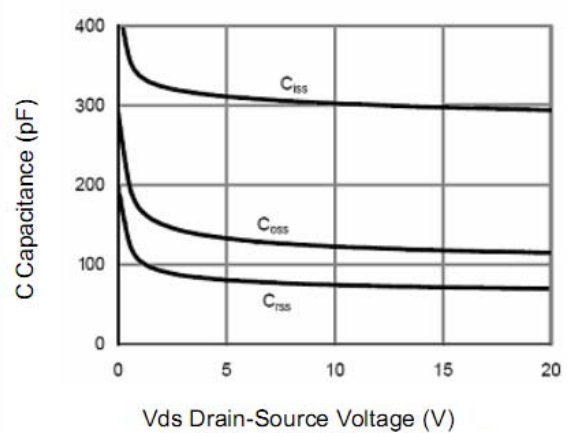


Figure 10 Capacitance vs Vds

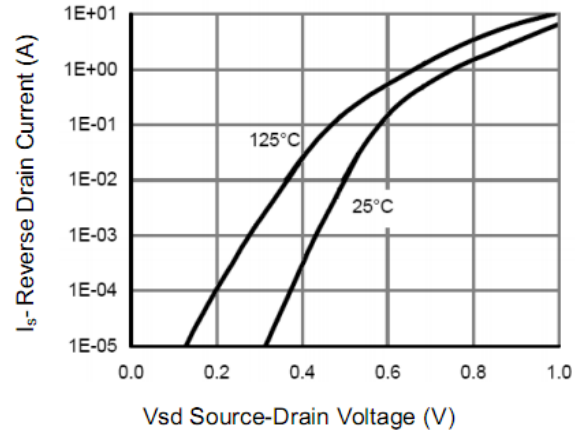


Figure 12 Source- Drain Diode Forward