

SOT-23 Plastic-Encapsulate Transistors

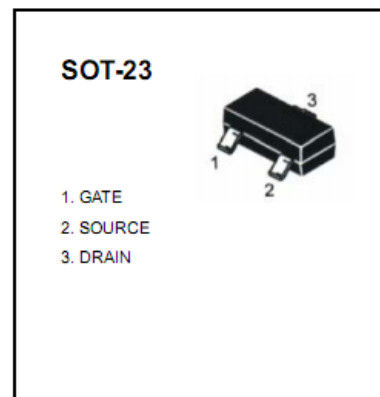
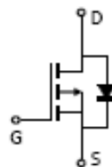
2301 MOSFET(P-Channel)

FEATURES

PWM applications

Load switch

Power management



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

Symbol	Parameter	Value	Units
V _{DS}	Drain-Source voltage	-12	V
V _{GS}	Gate-Source voltage	±12	V
I _D	Drain current	-2.6	A
P _D	Power Dissipation	0.9	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	VGS=0V, ID=-250uA	-12			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	IBSS	VDS=-12V, VGS=0V			-1	uA
Drain-Source On-Resistance	rDS(ON)	VGS=-4. 5V, ID=-2A		50	75	m Ω
		VGS=-2. 5V, ID=-1.8A		72	110	m Ω
Forward Trans conductance	gfs	VDS=-5V, ID=-1.0A	6			s
Dynamic Characteristics						
Input Capacitance	Ciss	VDS=-6V, VGS=0V, f=1MHz		325		pF
Output Capacitance	Coss			63		
Reverse Transfer Capacitance	Crss			37		
Switching Capacitance						
Turn-on Delay Time	td(on)	VDD=-6V, RL=5Ω , VGS=-4. 5V RGEN=3 Ω		11		nS
Turn-on Rise Time	tr			5.5		nS
Turn-off Delay Time	td(off)			22		nS
Turn-off Fall Time	tr			8		nS
Total Gate Charge	Qg	VDS=-6V, ID=-2A, VGS=-4. 5V,		3.2		nC
Gate-Source Charge	Qgs			0.6		nC
Gate-Drain Charge	Qgd			0.9		nC
Drain-Source Diode Characteristics						
Diode Forward Voltage	VSD	VGS=0V, ID=-2A			-1.2	V
Diode Forward Current	IS				-2.6	A

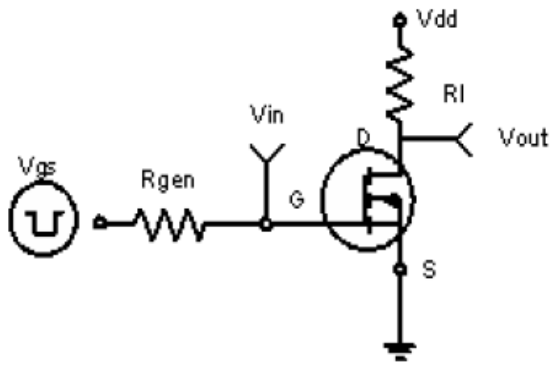


Figure 1: Switching Test Circuit

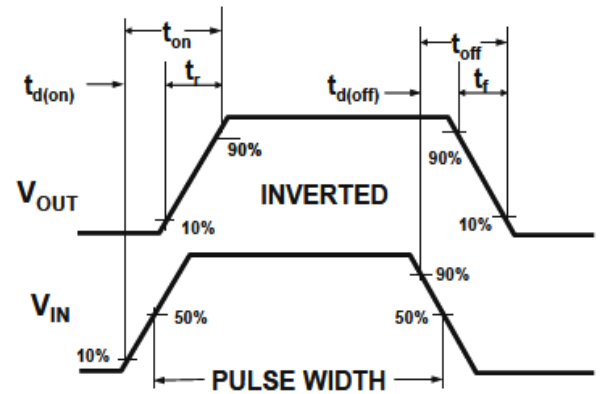


Figure 2: Switching Waveforms

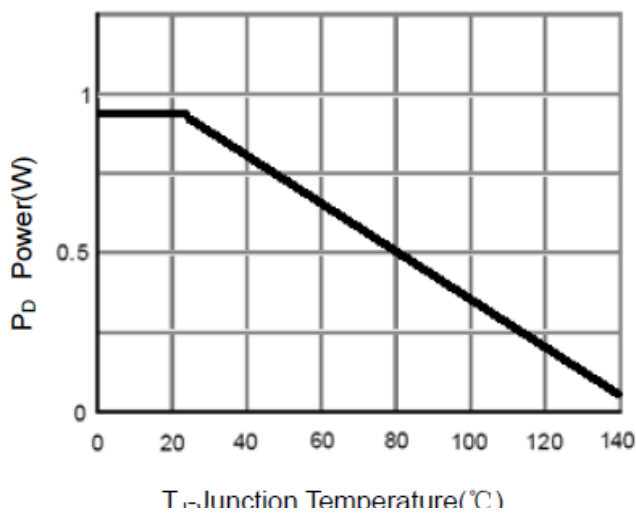


Figure 3 Power Dissipation

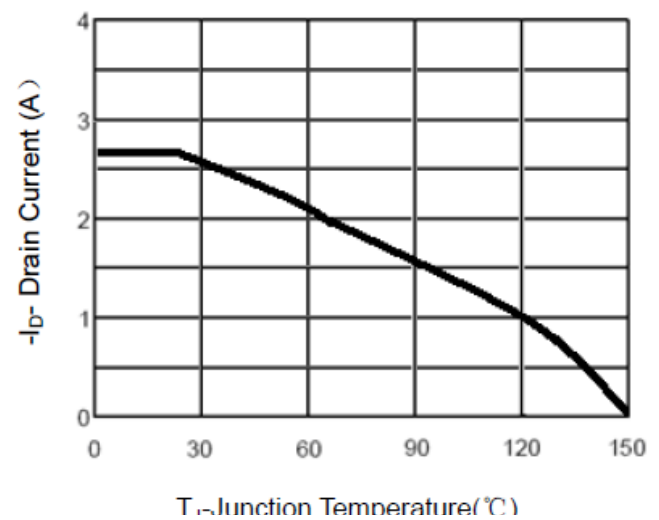


Figure 4 Drain Current

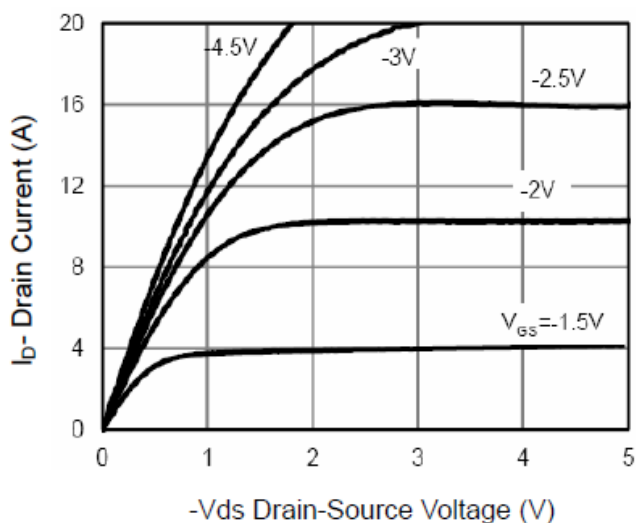


Figure 5 Output Characteristics

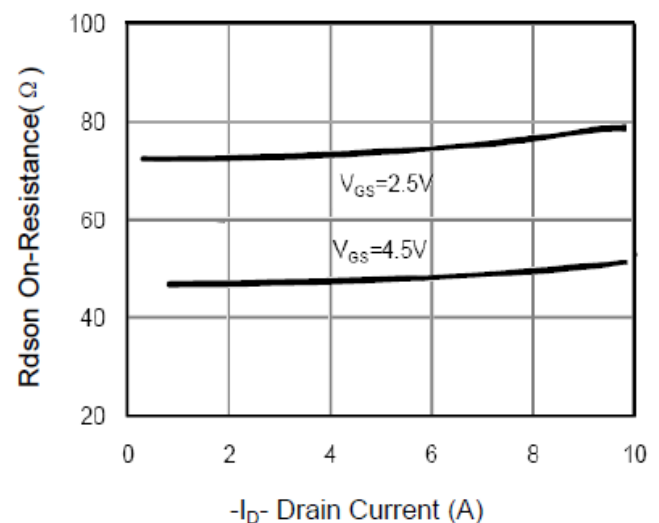


Figure 6 Drain-Source On-Resistance

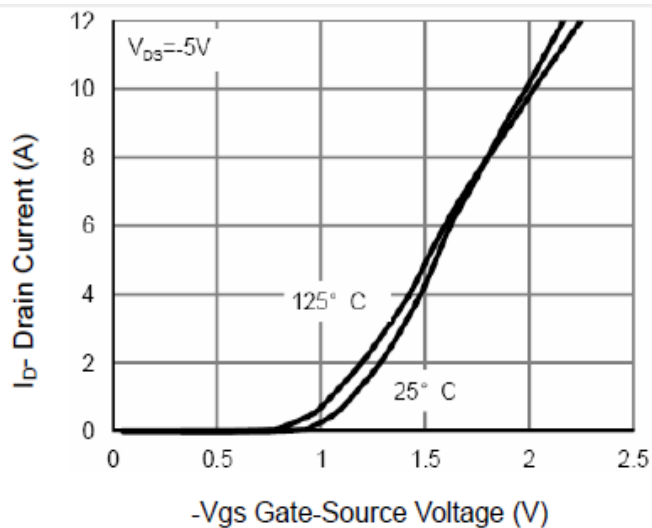


Figure 7 Transfer Characteristics

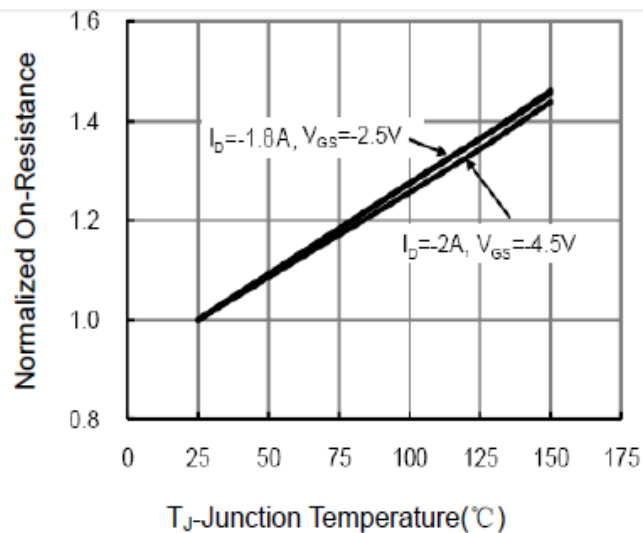


Figure 8 Drain-Source On-Resistance

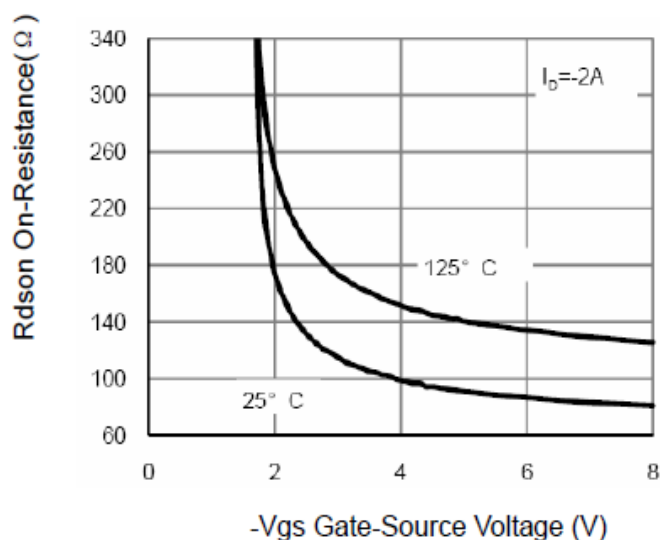


Figure 9 Rdson vs Vgs

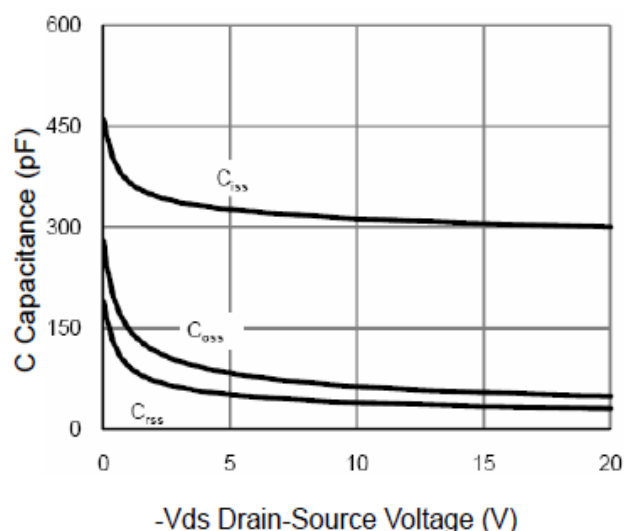


Figure 10 Capacitance vs Vds

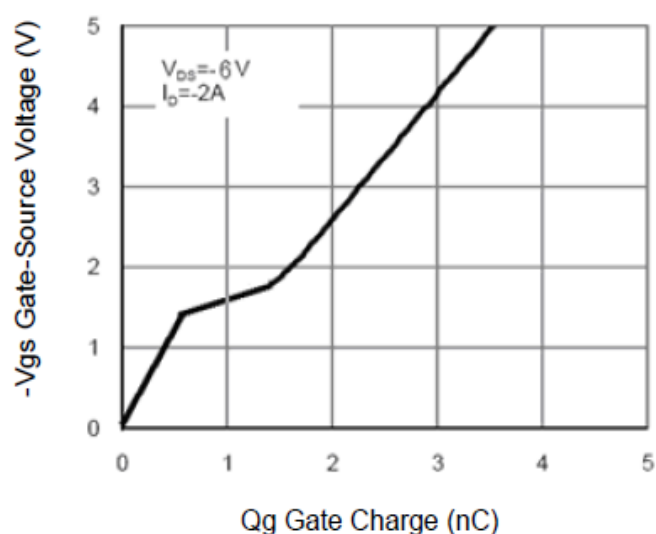


Figure 11 Gate Charge

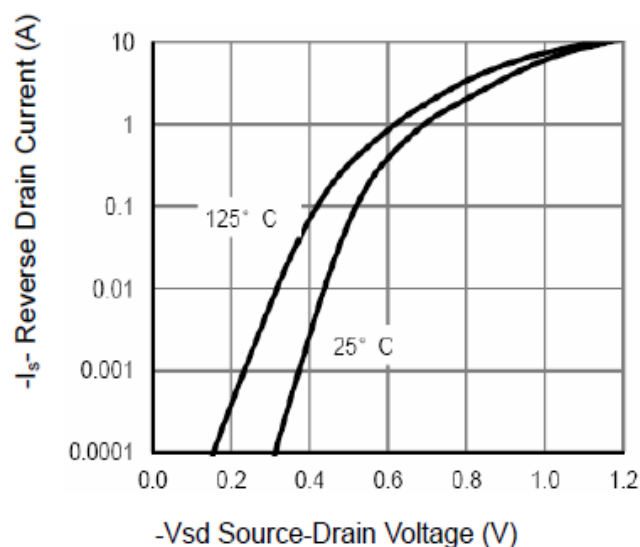


Figure 12 Source- Drain Diode Forward