2303

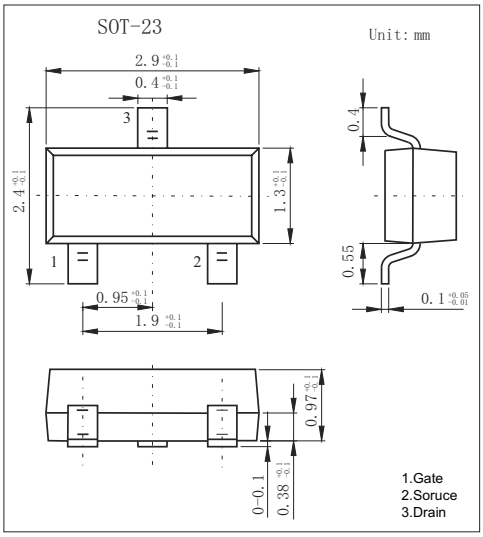
SOT-23 Plastic-Encapsulate MOSFETS

FEATURE

- TrenchFET Power MOSFET
- P-Channel 30-V(D-S) MOSFET

MECHANICAL DATA

- Case style:SOT-23molded plastic
- Mounting position:any



MAXIMUM RATINGS AND CHARACTERISTICS

@ 25°C Ambient Temperature (unless otherwise noted)

Parameter	Symbol	Value	Unit
Drain-Source Voltage	V_{DS}	-30	V
Gate-Source Voltage	V_{GS}	±20	
Continuous Drain Current	I_D	-1.9	A
Continuous Source-Drain Diode Current	I_S	-0.83	
Maximum Power Dissipation	P_D	0.35	W
Thermal Resistance from Junction to Ambient(t≤5s)	$R_{\theta JA}$	357	℃/W
Junction Temperature	T_J	150	℃
Storage Temperature	T_{STG}	-50 ~+150	

RATINGS AND CHARACTERISTIC CURVES

MOSFET ELECTRICAL CHARACTERISTICS Ta=25℃ unless otherwise specified

Parameter	Symbol	Test Condition	Min	Typ	Max	Units
Static						
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	V_{GS} = 0V, I_D =-250μA	-30			V
Gate-Source Threshold Voltage	$V_{GS(th)}$	V_{DS} =V_{GS}, I_D =-250μA	-1	-1.6	-3	
Gate-Source Leakage	I_{GSS}	V_{DS} =0V, V_{GS} =±20V			±100	nA
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS} =-30V, V_{GS} =0V			-1	μA
Drain-Source On-State Resistance[a]	$R_{DS(on)}$	V_{GS} =-10V, I_D =-1.9A		0.075	0.190	Ω
		V_{GS} =-4.5V, I_D =-1.4A		0.115	0.330	
Forward Transconductance[a]	g_{fs}	V_{DS} =-5V, I_D =-1.9A	1			S
Dynamic[b]						
Input Capacitance	C_{iss}	V_{DS} =-15V,V_{GS} =0V,f =1MHz		155		pF
Output Capacitance	C_{oss}			35		
Reverse Transfer Capacitance	C_{rss}			25		
Total Gate Charge	Q_g	V_{DS} =-15V,V_{GS} =-10V,I_D =-1.9A		4	8	nC
		V_{DS} =-15V,V_{GS} =-4.5V,I_D=-1.9A		2	4	
Gate-Source Charge	Q_{gs}			0.6		
Gate-Drain Charge	Q_{gd}			1		
Gate Resistance	R_g	f =1MHz	1.7	8.5	17	Ω
Turn-On Delay Time	$t_{d(on)}$	V_{DD}=-15V, R_L=10Ω, I_D =-1.5A, V_{GEN}=-10V,Rg=1Ω		4	8	ns
Rise Time	t_r			11	18	
Turn-Off Delay Time	$t_{d(off)}$			11	18	
Fall Time	t_f			8	16	
Turn-On Delay Time	$t_{d(on)}$	V_{DD}=-15V, R_L=10Ω, I_D =-1.5A, V_{GEN}=-4.5V,Rg=1Ω		36	44	
Rise Time	t_r			37	45	
Turn-Off Delay Time	$t_{d(off)}$			12	18	
Fall Time	t_f			9	14	
Drain-source Body diode characteristics						
Continuous Source-Drain Diode Current	I_S	T_C=25℃			-1.75	A
Pulse Diode Forward Current[a]	I_{SM}				-10	
Body Diode Voltage	V_{SD}	I_S=-1.5A		-0.8	-1.2	V

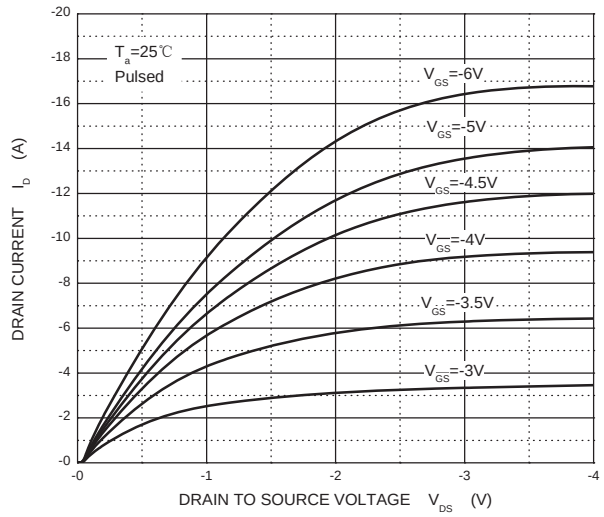
Notes :

a. Pulse Test : Pulse Width ≤300μs, Duty Cycle ≤2%.

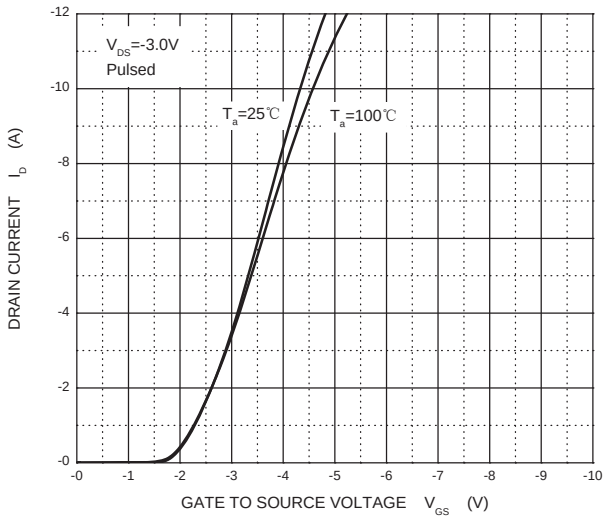
b. Guaranteed by design, not subject to production testing.

Typical Characteristics

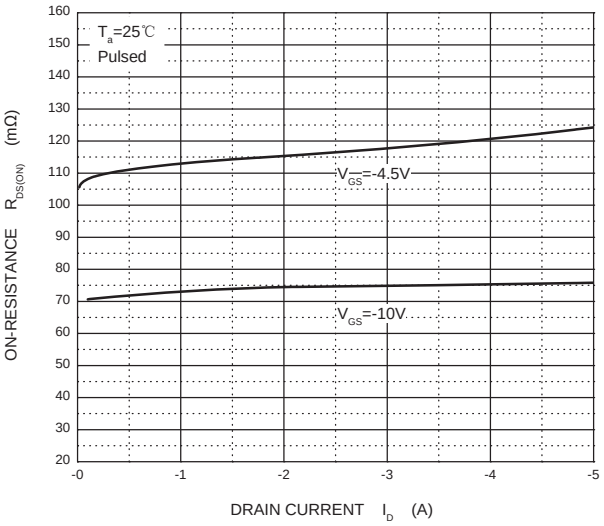
Output Characteristics



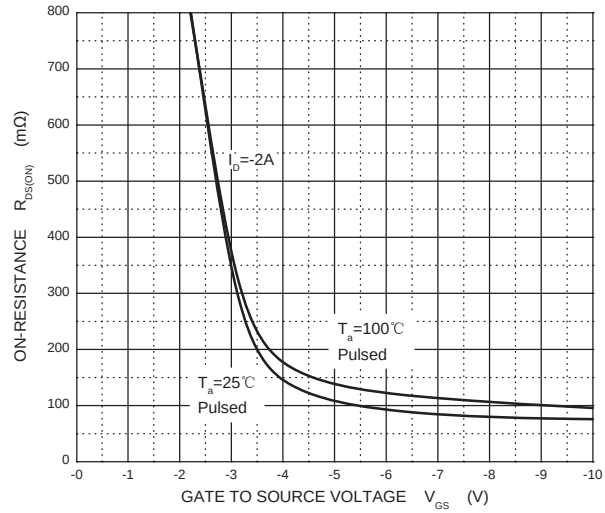
Transfer Characteristics



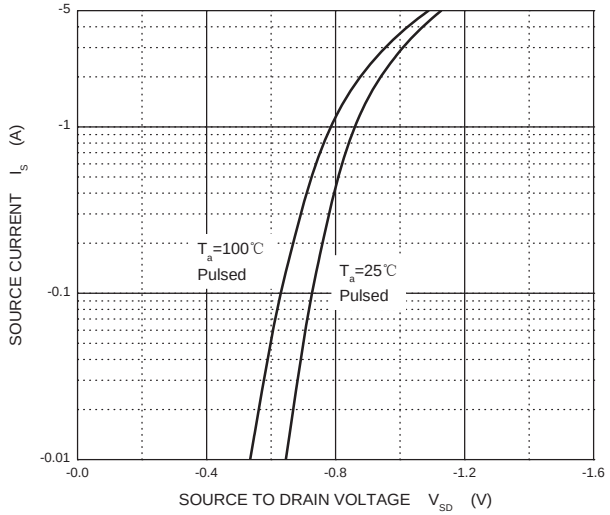
$R_{DS(ON)}$ — I_D



$R_{DS(ON)}$ — V_{GS}



I_S — V_{SD}



Threshold Voltage