

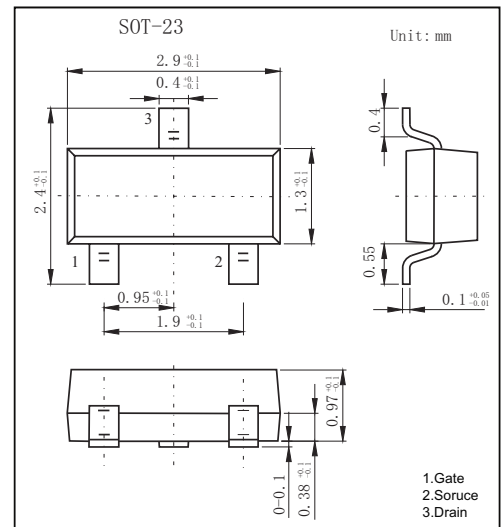
SOT-23 Plastic-Encapsulate MOSFETS

FEATURE

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

MECHANICAL DATA

- Case style: SOT-23 molded 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($t \leq 5s$)	$R_{\theta JA}$	357	°C/W
Junction Temperature	T_J	150	°C
Storage Temperature	T_{STG}	-50 ~ +150	

RATINGS AND CHARACTERISTIC CURVES

MOSFET ELECTRICAL CHARACTERISTICS $T_a=25\text{ }^\circ\text{C}$ unless otherwise specified

Parameter	Symbol	Test Condition	Min	Typ	Max	Units
Static						
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	$V_{GS} = 0V, I_D = -250\mu A$	-30			V
Gate-Source Threshold Voltage	$V_{GS(th)}$	$V_{DS} = V_{GS}, I_D = -250\mu A$	-1	-1.6	-3	
Gate-Source Leakage	I_{GSS}	$V_{DS} = 0V, V_{GS} = \pm 20V$			± 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	
Q_{gs}			0.6			
Q_{gd}			1			
Gate Resistance	R_g	$f = 1MHz$	1.7	8.5	17	Ω
Turn-On Delay Time	$t_{d(on)}$	$V_{DD} = -15V,$ $R_L = 10\Omega, I_D = -1.5A,$ $V_{GEN} = -10V, R_g = 1\Omega$		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	$t_{d(on)}$	$V_{DD} = -15V,$ $R_L = 10\Omega, I_D = -1.5A,$ $V_{GEN} = -4.5V, R_g = 1\Omega$		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	$T_C = 25^\circ C$			-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

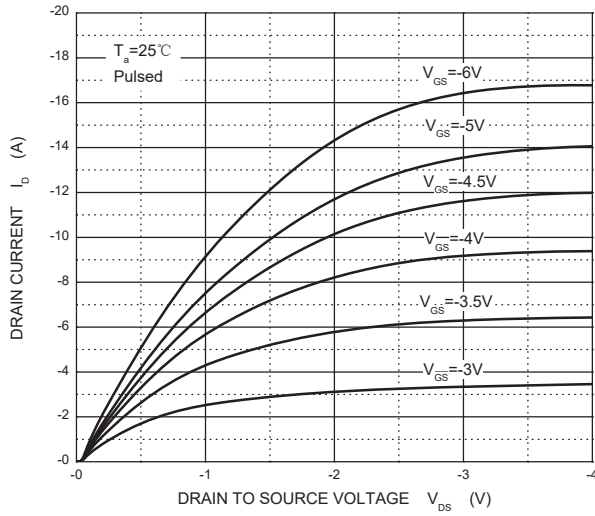
Notes :

- a. Pulse Test : Pulse Width $\leq 300\mu s$, Duty Cycle $\leq 2\%$.
b. Guaranteed by design, not subject to production testing.

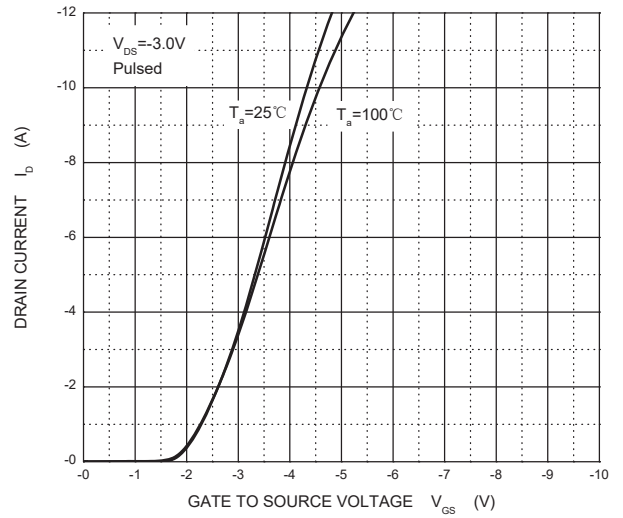
RATINGS AND CHARACTERISTIC CURVES

Typical Characteristics

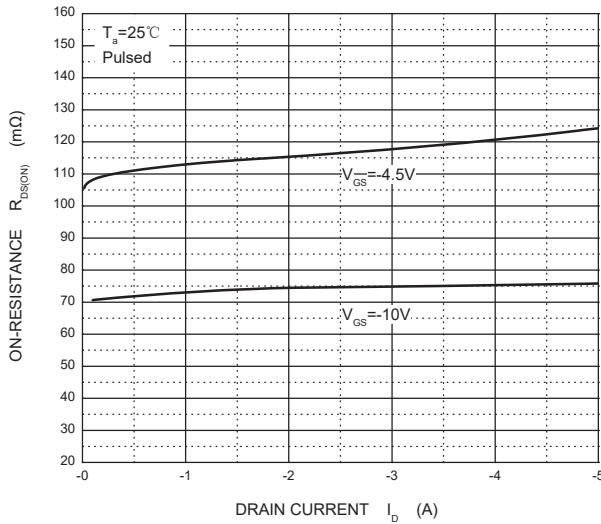
Output Characteristics



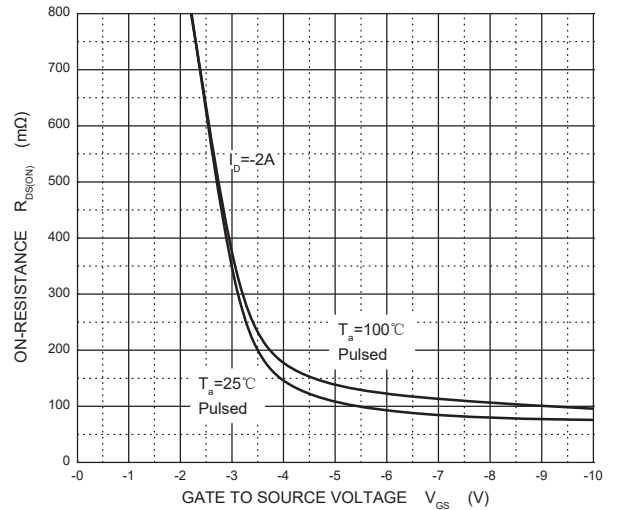
Transfer Characteristics



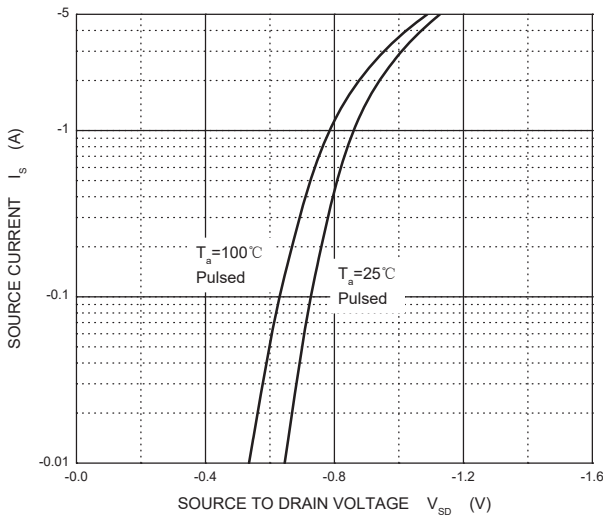
$R_{DS(ON)}$ — I_D



$R_{DS(ON)}$ — V_{GS}



I_S — V_{SD}



Threshold Voltage

