

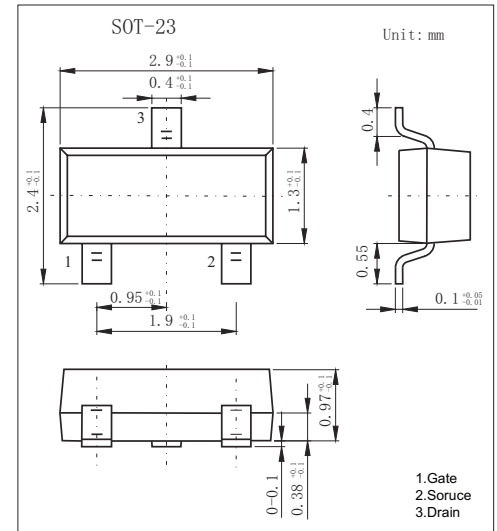
SOT-23 Plastic-Encapsulate MOSFETS

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	$V_{GS}$	$\pm 20$	
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	$^{\circ}C/W$
Junction Temperature	$T_J$	150	$^{\circ}C$
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
<b>Static</b>						
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	$I_{GSS}$	$V_{DS} = 0V, V_{GS} = \pm 20V$			$\pm 100$	nA
Zero Gate Voltage Drain Current	$I_{DSS}$	$V_{DS} = -30V, V_{GS} = 0V$			-1	$\mu A$
Drain-Source On-State Resistance <sup>a</sup>	$R_{DS(on)}$	$V_{GS} = -10V, I_D = -1.9A$		0.075	0.190	$\Omega$
		$V_{GS} = -4.5V, I_D = -1.4A$		0.115	0.330	
Forward Transconductance <sup>a</sup>	$g_{fs}$	$V_{DS} = -5V, I_D = -1.9A$	1			S
<b>Dynamic<sup>b</sup></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	$Q_{gs}$	$V_{DS} = -15V, V_{GS} = -4.5V, I_D = -1.9A$		0.6		
Gate-Drain Charge	$Q_{gd}$	$V_{DS} = -15V, V_{GS} = -4.5V, I_D = -1.9A$		1		
Gate Resistance	$R_g$	$f = 1MHz$	1.7	8.5	17	$\Omega$
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	
<b>Drain-source Body diode characteristics</b>						
Continuous Source-Drain Diode Current	$I_S$	$T_C = 25^\circ C$			-1.75	A
Pulse Diode Forward Current <sup>a</sup>	$I_{SM}$				-10	
Body Diode Voltage	$V_{SD}$	$I_S = -1.5A$		-0.8	-1.2	V

### Notes :

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



# RATINGS AND CHARACTERISTIC CURVES

## Typical Characteristics

