

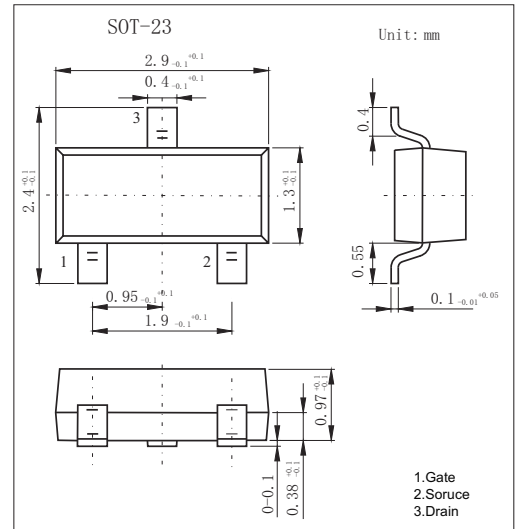
## SOT-23 Plastic-Encapsulate MOSFETS

### FEATURE

- TrenchFET Power MOSFET
- N-Channel 20-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	$V_{DS}$	20	V
Gate-Source Voltage	$V_{GS}$	$\pm 8$	
Continuous Drain Current	$I_D$	2.1	A
Continuous Source-Drain Current(Diode Conduction)	$I_S$	0.6	
Power Dissipation	$P_D$	0.4	W
Thermal Resistance from Junction to Ambient ( $t \leq 5s$ )	$R_{\theta JA}$	312.5	$^{\circ}C/W$
Operating Junction	$T_J$	150	$^{\circ}C$
Storage Temperature	$T_{STG}$	-55 ~ +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	$V_{(BR)DSS}$	$V_{GS} = 0V, I_D = 10\mu A$	20			V
Gate-threshold voltage	$V_{GS(th)}$	$V_{DS} = V_{GS}, I_D = 50\mu A$	0.65	0.95	1.2	
Gate-body leakage	$I_{GSS}$	$V_{DS} = 0V, V_{GS} = \pm 8V$			$\pm 100$	nA
Zero gate voltage drain current	$I_{DSS}$	$V_{DS} = 20V, V_{GS} = 0V$			1	$\mu A$
Drain-source on-resistance <sup>a</sup>	$r_{DS(on)}$	$V_{GS} = 4.5V, I_D = 3.6A$		0.035	0.060	$\Omega$
		$V_{GS} = 2.5V, I_D = 3.1A$		0.045	0.115	
Forward transconductance <sup>a</sup>	$g_{fs}$	$V_{DS} = 5V, I_D = 3.6A$		8		S
Diode forward voltage	$V_{SD}$	$I_S = 0.94A, V_{GS} = 0V$		0.76	1.2	V
<b>Dynamic</b>						
Total gate charge	$Q_g$	$V_{DS} = 10V, V_{GS} = 4.5V, I_D = 3.6A$		4.0	10	nC
Gate-source charge	$Q_{gs}$			0.65		
Gate-drain charge	$Q_{gd}$			1.5		
Input capacitance <sup>b</sup>	$C_{iss}$	$V_{DS} = 10V, V_{GS} = 0V, f = 1MHz$		300		pF
Output capacitance <sup>b</sup>	$C_{oss}$			120		
Reverse transfer capacitance <sup>b</sup>	$C_{rss}$			80		
<b>Switching<sup>b</sup></b>						
Turn-on delay time	$t_{d(on)}$	$V_{DD} = 10V,$ $R_L = 5.5\Omega, I_D \approx 3.6A,$ $V_{GEN} = 4.5V, R_g = 6\Omega$		7	15	ns
Rise time	$t_r$			55	80	
Turn-off delay time	$t_{d(off)}$			16	60	
Fall time	$t_f$			10	25	

**Notes :**

- a. Pulse Test : Pulse width  $\leq 300\mu s$ , duty cycle  $\leq 2\%$ .  
b. These parameters have no way to verify.

## RATINGS AND CHARACTERISTIC CURVES

### Typical Characteristics

