

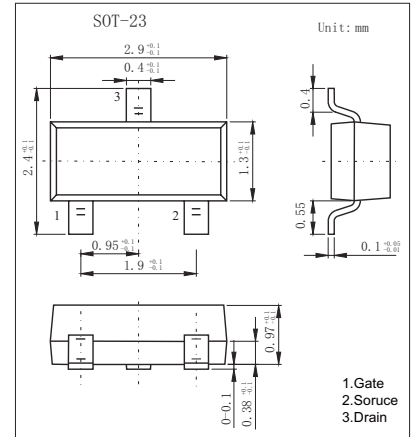
## SOT-23 Plastic-Encapsulate MOSFETS

### FEATURE

- High dense cell design for extremely low RDS(ON)
- Exceptional on-resistance and maximum DC current capability
- N-Channel Enhancement Mode Field Effect Transistor

### 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	$V_{GS}$	$\pm 12$	V
Continuous Drain Current	$I_D$	5.8	A
Drain Current-Pulsed (note 1)	$I_{DM}$	30	A
Power Dissipation	$P_D$	350	mW
Thermal Resistance from Junction to Ambient (note 2)	$R_{\theta JA}$	357	°C/W
Junction Temperature	$T_J$	150	°C
Storage Temperature	$T_{STG}$	-55~+150	°C

$V_{(BR)DSS}$	$R_{DS(on)MAX}$	$I_D$
30V	35mΩ@10V	5.8A
	40mΩ@4.5V	
	52mΩ@2.5V	

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

Parameter	Symbol	Test Condition	Min	Typ	Max	Unit
<b>Off Characteristics</b>						
Drain-source breakdown voltage	$V_{(BR)DSS}$	$V_{GS} = 0V, I_D = 250\mu A$	30			V
Zero gate voltage drain current	$I_{DSS}$	$V_{DS} = 24V, V_{GS} = 0V$			1	$\mu A$
Gate-source leakage current	$I_{GSS}$	$V_{GS} = \pm 12V, V_{DS} = 0V$			$\pm 100$	nA
<b>On characteristics</b>						
Drain-source on-resistance (note 3)	$R_{DS(on)}$	$V_{GS} = 10V, I_D = 5.8A$			35	mΩ
		$V_{GS} = 4.5V, I_D = 5A$			40	mΩ
		$V_{GS} = 2.5V, I_D = 4A$			52	mΩ
Forward transconductance	$g_{FS}$	$V_{DS} = 5V, I_D = 5A$	8			S
Gate threshold voltage	$V_{GS(th)}$	$V_{DS} = V_{GS}, I_D = 250\mu A$	0.7		1.4	V
<b>Dynamic Characteristics (note 4,5)</b>						
Input capacitance	$C_{iss}$	$V_{DS} = 15V, V_{GS} = 0V, f = 1MHz$			1050	pF
Output capacitance	$C_{oss}$				99	pF
Reverse transfer capacitance	$C_{rss}$				77	pF
Gate resistance	$R_g$	$V_{DS} = 0V, V_{GS} = 0V, f = 1MHz$			3.6	Ω
<b>Switching Characteristics (note 4,5)</b>						
Turn-on delay time	$t_{d(on)}$	$V_{GS} = 10V, V_{DS} = 15V, R_L = 2.7\Omega, R_{GEN} = 3\Omega$			5	ns
Turn-on rise time	$t_r$				7	ns
Turn-off delay time	$t_{d(off)}$				40	ns
Turn-off fall time	$t_f$				6	ns
<b>Drain-source diode characteristics and maximum ratings</b>						
Diode forward voltage (note 3)	$V_{SD}$	$I_S = 1A, V_{GS} = 0V$			1	V

#### Note :

1. Repetitive Rating : Pulse width limited by maximum junction temperature.
2. Surface Mounted on FR4 Board,  $t < 5$  sec.
3. Pulse Test : Pulse Widths 300 $\mu s$ , Duty Cycle  $\leq 2\%$ .
4. Guaranteed by design, not subject to production testing.

## Typical Characteristics

