

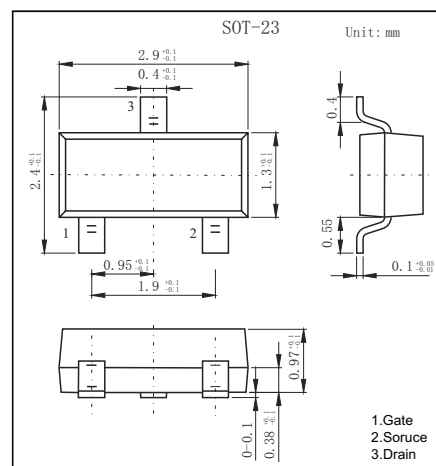
## SOT-23 Plastic-Encapsulate MOSFETS

### FEATURE

- High power and current handing capability
- Lead free product is acquired
- Surface mount package
- N-Channel MOSFET

### MECHANICAL DATA

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



### MAXIMUM RATINGS AND CHARACTERISTICS

@ 25°C Ambient Temperature (unless otherwise noted)

Parameter	Symbol	Value	Unit
Drain-Source Voltage	$V_{DS}$	60	V
Gate-Source Voltage	$V_{GS}$	$\pm 20$	V
Continuous Drain Current	$I_D$	3	A
Pulsed Drain Current (note 1)	$I_{DM}$	10	A
Power Dissipation	$P_D$	0.35	W
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

$V_{(BR)DSS}$	RDS(on) MAX	$I_D$
60 V	105mΩ@10V	3 A
	125mΩ@4.5V	

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

Parameter	Symbol	Test Condition	Min	Typ	Max	Unit	
<b>STATIC CHARACTERISTICS</b>							
Drain-source breakdown voltage	$V_{(BR)DSS}$	$V_{GS} = 0V, I_D = 250\mu A$	60			V	
Zero gate voltage drain current	$I_{DSS}$	$V_{DS} = 60V, V_{GS} = 0V$			1	$\mu A$	
Gate-body leakage current	$I_{GSS}$	$V_{GS} = \pm 20V, V_{DS} = 0V$			$\pm 100$	nA	
Gate threshold voltage (note 3)	$V_{GS(th)}$	$V_{DS} = V_{GS}, I_D = 250\mu A$			2	V	
Drain-source on-resistance (note 3)	$R_{DS(on)}$	$V_{GS} = 10V, I_D = 3A$			105	mΩ	
		$V_{GS} = 4.5V, I_D = 3A$			125	mΩ	
Forward transconductance (note 3)	$f_{sg}$	$V_{DS} = 15V, I_D = 2A$	1.4			S	
Diode forward voltage (note 3)	$V_{SD}$	$I_S = 3A, V_{GS} = 0V$			1.2	V	
<b>DYNAMIC CHARACTERISTICS (note 4)</b>							
Input Capacitance	$C_{iss}$	$V_{DS} = 30V, V_{GS} = 0V, f = 1MHz$		247		pF	
Output Capacitance	$C_{oss}$			34		pF	
Reverse Transfer Capacitance	$C_{rss}$			19.5		pF	
<b>SWITCHING CHARACTERISTICS (note 4)</b>							
Turn-on delay time	$t_{d(on)}$	$V_{GS} = 10V, V_{DD} = 30V, I_D = 1.5A, R_{GEN} = 1\Omega$		6		ns	
Turn-on rise time	$t_r$			15		ns	
Turn-off delay time	$t_{d(off)}$			15		ns	
Turn-off fall time	$t_f$			10		ns	
Total Gate Charge	$Q_g$				6		nC
Gate-Source Charge	$Q_{gs}$				1		nC
Gate-Drain Charge	$Q_{gd}$			1.3		nC	

#### Notes :

1. Repetitive rating : Pulse width limited by junction temperature.
2. Surface mounted on FR4 board ,  $t_s \leq 10s$ .
3. Pulse Test : Pulse Width  $\leq 300\mu s$ , Duty Cycles  $\leq 0.5\%$ .
4. Guaranteed by design, not subject to producing.

## RATINGS AND CHARACTERISTIC CURVES

### Typical Characteristics

