

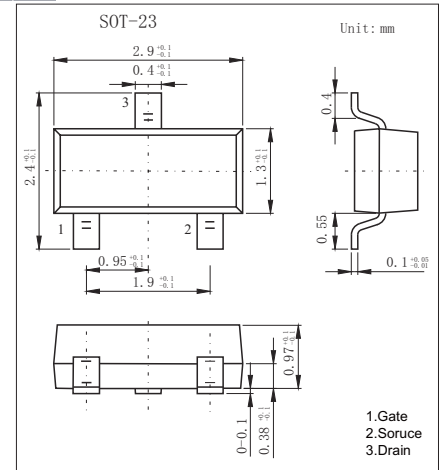
SOT-23 Plastic-Encapsulate MOSFETS

**FEATURE**

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

**MECHANICAL DATA**

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



**MAXIMUM RATINGS AND CHARACTERISTICS**

@ 25°C Ambient Temperature (unless otherwise noted)

Parameter	Symbol	Value	Unit
Drain-Source Voltage	$V_{DS}$	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	$^{\circ}C/W$
Junction Temperature	$T_J$	150	$^{\circ}C$
Storage Temperature	$T_{STG}$	-55~+150	$^{\circ}C$

$V_{(BR)DSS}$	$R_{DS(on)MAX}$	$I_D$
60V	105m $\Omega$ @10V	3A
	125m $\Omega$ @4.5V	

**MOSFET ELECTRICAL CHARACTERISTICS**  $T_a=25^{\circ}C$  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)	$V_{GS(th)}$	$V_{DS} = V_{GS}, I_D = 250\mu A$	0.5		2	V
Drain-source on-resistance (note 3)	$R_{DS(on)}$	$V_{GS} = 10V, I_D = 3A$			105	m $\Omega$
		$V_{GS} = 4.5V, I_D = 3A$			125	m $\Omega$
Forward tranconductance (note 3)	$g_{FS}$	$V_{DS} = 15V, I_D = 2A$	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	$Q_g$	$V_{DS} = 30V, V_{GS} = 4.5V, I_D = 3A$		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

