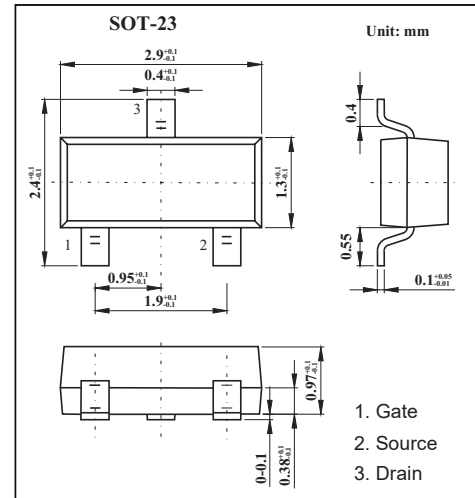


**SOT-23 Plastic-Encapsulate MOSFETS**
**FEATURES**

- VDS (V) = 30V
- ID = 4 A
- RDS(ON) < 5.5mΩ (VGS = 10V)
- RDS(ON) < 7.0mΩ (VGS = 4.5V)
- RDS(ON) < 1.10mΩ (VGS = 2.5V)
- N-Channel Enhancement Mode Field Effect Transistor

**MECHANICAL DATA**

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


**MAXIMUM RATINGS AND CHARACTERISTICS**

@ 25°C Ambient Temperature (unless otherwise noted)

Parameter	Symbol	Rating	Unit
Drain-Source Voltage	V <sub>DS</sub>	30	V
Gate-Source Voltage	V <sub>GS</sub>	±12	V
Continuous Drain Current	I <sub>D</sub>	TA=25°C	A
		TA=70°C	
Pulsed Drain Current	I <sub>DM</sub>	15	
Power Dissipation	P <sub>D</sub>	TA=25°C	W
		TA=70°C	
Thermal Resistance.Junction-to-Ambient	R <sub>θJA</sub>	125	°C/W
Thermal Resistance.Junction-to-Case	R <sub>θJC</sub>	80	°C/W
Junction and Storage Temperature Range	T <sub>J</sub> , T <sub>STG</sub>	-55 to 150	°C

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

Parameter	Symbol	Test Condition	Min	Typ	Max	Unit
Drain-Source Breakdown Voltage	$V_{DS}$	$I_D=250\text{ }\mu\text{A}$ , $V_{GS}=0\text{V}$	30			V
Zero Gate Voltage Drain Current	$I_{DSS}$	$V_{DS}=24\text{V}$ , $V_{GS}=0\text{V}$			1	$\mu\text{A}$
		$V_{DS}=24\text{V}$ , $V_{GS}=0\text{V}$ , $T_J=55\text{ }^{\circ}\text{C}$			5	
Gate-Body leakage current	$I_{GSS}$	$V_{DS}=0\text{V}$ , $V_{GS}=\pm 12\text{V}$			$\pm 100$	nA
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS}=V_{GS}$ , $I_D=250\text{ }\mu\text{A}$	0.6	1	1.4	V
Static Drain-Source On-Resistance	$R_{DS(on)}$	$V_{GS}=10\text{V}$ , $I_D=4\text{A}$		45	55	m $\Omega$
		$V_{GS}=10\text{V}$ , $I_D=4\text{A}$ , $T_J=125\text{ }^{\circ}\text{C}$		66	80	
		$V_{GS}=4.5\text{V}$ , $I_D=3\text{A}$		55	70	m $\Omega$
		$V_{GS}=2.5\text{V}$ , $I_D=2\text{A}$		83	110	m $\Omega$
On state drain current	$I_{D(on)}$	$V_{GS}=4.5\text{V}$ , $V_{DS}=5\text{V}$	10			A
Forward Transconductance	$g_{FS}$	$V_{DS}=5\text{V}$ , $I_D=4\text{A}$		8		S
Input Capacitance	$C_{iss}$	$V_{GS}=0\text{V}$ , $V_{DS}=15\text{V}$ , $f=1\text{MHz}$		390		pF
Output Capacitance	$C_{oss}$			54.5		pF
Reverse Transfer Capacitance	$C_{rss}$			41		pF
Gate resistance	$R_g$	$V_{GS}=0\text{V}$ , $V_{DS}=0\text{V}$ , $f=1\text{MHz}$		3		$\Omega$
Total Gate Charge	$Q_g$	$V_{GS}=4.5\text{V}$ , $V_{DS}=15\text{V}$ , $I_D=-4\text{A}$		4.34		nC
Gate Source Charge	$Q_{gs}$			0.6		nC
Gate Drain Charge	$Q_{gd}$			1.38		nC
Turn-On DelayTime	$t_{D(on)}$	$V_{GS}=10\text{V}$ , $V_{DS}=15\text{V}$ , $R_L=3.75\text{ }\Omega$ , $R_{GEN}=6\text{ }\Omega$		3.3		ns
Turn-On Rise Time	$t_r$			1		ns
Turn-Off DelayTime	$t_{D(off)}$			21.7		ns
Turn-Off Fall Time	$t_f$			2.1		ns
Body Diode Reverse Recovery Time	$t_{rr}$	$I_F=4\text{A}$ , $di/dt=100\text{A}/\mu\text{s}$		12		ns
Body Diode Reverse Recovery Charge	$Q_{rr}$	$I_F=4\text{A}$ , $di/dt=100\text{A}/\mu\text{s}$		6.3		nC
Maximum Body-Diode Continuous Current	$I_S$				2.5	A
Diode Forward Voltage	$V_{SD}$	$I_S=1\text{A}$ , $V_{GS}=0\text{V}$		0.8	1	V