

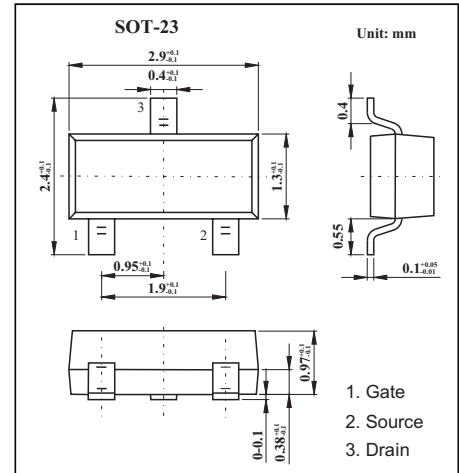
## SOT-23 Plastic-Encapsulate MOSFETS

### Features

- VDS (V) = -20V
- ID = -3 A
- RDS(ON) < 97mΩ (VGS = -4.5V)
- RDS(ON) < 130mΩ (VGS = -2.5V)
- RDS(ON) < 190mΩ (VGS = -1.8V)
- P-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	Rating	Unit
Drain-Source Voltage	V <sub>DS</sub>	-20	V
Gate-Source Voltage	V <sub>GS</sub>	±8	V
Continuous Drain Current *1	I <sub>D</sub>	T <sub>A</sub> =25°C	-3
		T <sub>A</sub> =70°C	-2.4
Pulsed Drain Current *2	I <sub>DM</sub>	-15	A
Power Dissipation *1	P <sub>D</sub>	T <sub>A</sub> =25°C	1.4
		T <sub>A</sub> =70°C	0.9
Thermal Resistance.Junction-to-Ambient *1	R <sub>θJA</sub>	125	°C/W
Junction and Storage Temperature Range	T <sub>J</sub> , T <sub>STG</sub>	-55 to 150	°C

\*1The value of R<sub>θJA</sub> is measured with the device mounted on 1in<sup>2</sup> FR-4 board with 2oz.

Copper, in a still air environment with T<sub>A</sub> =25°C

\*2 Repetitive rating, pulse width limited by junction temperature.

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

Parameter	Symbol	Testconditons	Min	Typ	Max	Unit
Drain-Source Breakdown Voltage	$V_{DS}$	$I_D=-250\text{ }\mu\text{A}, V_{GS}=0\text{V}$	-20			V
Zero Gate Voltage Drain Current	$I_{DSS}$	$V_{DS}=-16\text{V}, V_{GS}=0\text{V}$			-1	$\mu\text{A}$
		$V_{DS}=-16\text{V}, V_{GS}=0\text{V}, T_J=55^{\circ}\text{C}$			-5	
Gate-Body leakage current	$I_{GSS}$	$V_{DS}=0\text{V}, V_{GS}=\pm 8\text{V}$			$\pm 100$	$\mu\text{A}$
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS}=V_{GS}, I_D=-250\text{ }\mu\text{A}$	-0.3	-0.55	-1	V
Static Drain-Source On-Resistance	$R_{DS(on)}$	$V_{GS}=-4.5\text{V}, I_D=-3\text{A}$		81	97	m $\Omega$
		$V_{GS}=-4.5\text{V}, I_D=-3\text{A}, T_J=125^{\circ}\text{C}$		111	135	
		$V_{GS}=-2.5\text{V}, I_D=-2.6\text{A}$		108	130	
		$V_{GS}=-1.8\text{V}, I_D=-1\text{A}$		146	190	
On state drain current	$I_{D(on)}$	$V_{GS}=-4.5\text{V}, V_{DS}=-5\text{V}$	-15			A
Forward Transconductance	$g_{FS}$	$V_{DS}=-5\text{V}, I_D=-3\text{A}$	4	7		S
Input Capacitance	$C_{iss}$	$V_{GS}=0\text{V}, V_{DS}=-10\text{V}, f=1\text{MHz}$		540		pF
Output Capacitance	$C_{oss}$			72		pF
Reverse Transfer Capacitance	$C_{rss}$			49		pF
Gate resistance	$R_g$	$V_{GS}=0\text{V}, V_{DS}=0\text{V}, f=1\text{MHz}$		12		$\Omega$
Total Gate Charge	$Q_g$	$V_{GS}=-4.5\text{V}, V_{DS}=-10\text{V}, I_D=-3\text{A}$		6.1		nC
Gate Source Charge	$Q_{gs}$			0.6		nC
Gate Drain Charge	$Q_{gd}$			1.6		nC
Turn-On DelayTime	$t_{D(on)}$			10		ns
Turn-On Rise Time	$t_r$	$V_{GS}=-4.5\text{V}, V_{DS}=-10\text{V}, R_L=3.3\text{ }\Omega, R_{GEN}=3\text{ }\Omega$		12		ns
Turn-Off DelayTime	$t_{D(off)}$			44		ns
Turn-Off Fall Time	$t_f$			22		ns
Body Diode Reverse Recovery Time	$t_{rr}$	$I_F=-3\text{A}, di/dt=100\text{A}/\mu\text{s}$		21		ns
Body Diode Reverse Recovery Charge	$Q_{rr}$	$I_F=-3\text{A}, di/dt=100\text{A}/\mu\text{s}$		7.5		nC
Maximum Body-Diode Continuous Current	$I_S$				-2	A
Diode Forward Voltage	$V_{SD}$	$I_S=-1\text{A}, V_{GS}=0\text{V}$		-0.78	-1	V