

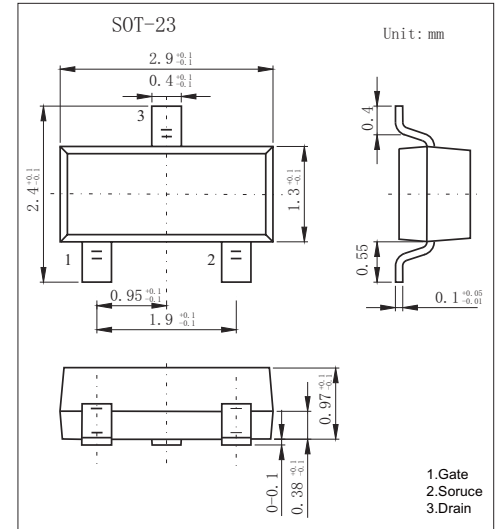
SOT-23 Plastic-Encapsulate MOSFETS

FEATURE

- TrenchFET Power MOSFET
- N-Channel 30-V (D-S) MOSFET

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_{DS}	30	V
Gate-Source Voltage	V_{GS}	± 20	
Continuous Drain Current (T _J = 150°C) *2 Ta = 25°C Ta=70°C	I_D	2.5	A
		2.0	
Pulsed Drain Current *1	I_{DM}	10	
Continuous Source Current (Diode Conduction)*2	I_S	1.25	W
Power Dissipation *2 Ta = 25°C Ta=70°C	P_D	1.25	
		0.80	
Operating Junction and Storage Temperature Range	T _J , T _{stg}	-55 to 150	°C
Maximum Junction-to-Ambient ^b	R_{thJA}	100	°C/W
Maximum Junction-to-Ambient ^c		166	

*1 Pulse width limited by maximum junction temperature.

*2 Surface Mounted on FR4 Board, t ≤ 5 sec.

*3 Surface Mounted on FR4 Board.



RATINGS AND CHARACTERISTIC CURVES

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

Parameter	Symbol	Testconditons	Min	Typ	Max	Unit
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	$V_{GS} = 0\text{ V}, I_D = 250\text{ }\mu\text{A}$	30			V
Gate-Threshold Voltage	$V_{GS(th)}$	$V_{DS} = V_{GS}, I_D = 250\text{ }\mu\text{A}$	1.5			
Gate-Body Leakage	I_{GSS}	$V_{DS} = 0\text{ V}, V_{GS} = \pm 20\text{ V}$			± 100	nA
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS} = 30\text{ V}, V_{GS} = 0\text{ V}$			0.5	μA
		$V_{DS} = 30\text{ V}, V_{GS} = 0\text{ V}, T_J = 55^{\circ}\text{C}$			10	
		$V_{DS} = 30\text{ V}, V_{GS} = 1.0\text{ V}, T_J = 25^{\circ}\text{C}$			1	
On-State Drain Current *	$I_{D(on)}$	$V_{DS} \geq 4.5\text{ V}, V_{GS} = 10\text{ V}$	6			A
		$V_{DS} \geq 4.5\text{ V}, V_{GS} = 4.5\text{ V}$	4			
Drain-Source On-Resistance *	$r_{DS(on)}$	$V_{GS} = 10\text{ V}, I_D = 2.5\text{ A}$		0.092	0.117	Ω
		$V_{GS} = 4.5\text{ V}, I_D = 2.0\text{ A}$		0.142	0.190	
Forward Transconductance *	g_{fs}	$V_{DS} = 4.5\text{ V}, I_D = 2.5\text{ A}$		4.6		S
Diode Forward Voltage	V_{SD}	$I_S = 1.25\text{ A}, V_{GS} = 0\text{ V}$		0.77	1.2	V
Gate Charge	Q_g	$V_{DS} = 15\text{ V}, V_{GS} = 5\text{ V}, I_D = 2.5\text{ A}$		2.4	4	nC
Total Gate Charge	Q_{gt}	$V_{DS}=15\text{V}, V_{GS}=10\text{V}, I_D=2.5\text{A}$		4.5	10	nC
Gate-Source Charge	Q_{gs}		0.8			
Gate-Drain Charge	Q_{gd}		1.0			
Input Capacitance	C_{iss}	$V_{DS}=15\text{V}, V_{GS}=0\text{V}, f=1\text{MHz}$		240		pF
Output Capacitance	C_{oss}		110			
Reverse Transfer Capacitance	C_{rss}		17			
Turn-On Delay Time	$t_{d(on)}$	$V_{DD}=15\text{V}, R_L=15\Omega, I_D=1\text{A}, V_{GEN}=10\text{V}, R_G=6\Omega$		8	20	ns
Rise Time	t_r		12	30		
Turn-Off Delay Time	$t_{d(off)}$		17	35		
Fall-Time	t_f		8	20		

*Pulse test: $PW \leq 300\text{ }\mu\text{s}$ duty cycle $\leq 2\%$..

■ Marking

Marking	A4
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