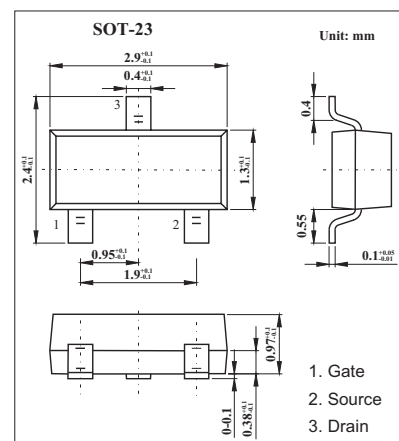


SOT-23 Plastic-Encapsulate MOSFETS
Features

- 1.8-V Rated
- RoHS Compliant
- N-Channel 20 -V (D-S) MOSFET

MECHANICAL DATA

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


MAXIMUM RATINGS AND CHARACTERISTICS

@ 25°C Ambient Temperature (unless otherwise noted)

Parameter	Symbol	5 sec	Steady State	Unit
Drain-Source Voltage	V _{DS}	20		V
Gate-Source Voltage	V _{GS}	±8		V
Continuous Drain Current (T _J =150°C) *2 T _A =25°C T _A =70°C	I _D	4.9 3.9	3.77 3.0	A
Pulsed Drain Current *2	I _{DM}	15		A
Avalanche Current*2 L = 0.1 mH	I _{AS}	15		A
Single Avalanche Energy L = 0.1 mH	E _{AS}	11.25		mJ
Continuous Source Current (diode conduction) *2	I _S	1.0		A
Power Dissipation *2 T _A =25°C T _A =70°C	P _D	1.25 0.8	0.75 0.48	W
Junction Temperature and Storage Temperature	T _j , T _{stg}	-55 to 150		°C

*1 Surface Mounted on 1□x 1□FR4 Board.

*2 Pulse width limited by maximum junction temperature

Thermal Resistance Ratings

Parameter	Symbol	Typical	Maximum	Unit
Maximum Junction-to-Ambient * t ≤ 5 s e c	R _{thJA}	75	100	°C/W
Maximum Junction-to-Ambient * Steady State		120	166	
Maximum Junction-to-Foot Steady State	R _{thJF}	40	50	

* Surface Mounted on 1□x 1□FR4 Board.

RATINGS AND CHARACTERISTIC CURVES
MOSFET ELECTRICAL CHARACTERISTICS Ta=25 °C unless otherwise specified

Parameter	Symbol	Testconditions	Min	Typ	Max	Unit
Drain-Source Breakdown Voltage	V _{(BR)DSS}	V _{GS} = 0 V, I _D = 250 μA	20			V
Gate Threshold Voltage	V _{GS(th)}	V _{DS} = V _{GS} , I _D = 250 μA	0.45	0.65	0.85	
Gate-Body Leakage	I _{GSS}	V _{DS} = 0 V, V _{GS} = ±8 V			±100	nA
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} = 20 V, V _{GS} = 0 V			1	μA
		V _{DS} = 20 V, V _{GS} = 0 V, T _J = 70 °C			75	
On-State Drain Current	I _{D(on)}	V _{DS} ≥ 10V, V _{GS} = 4.5 V	15			A
Drain-Source On-State Resistance *	r _{DS(on)}	V _{GS} = 4.5 V, I _D = 5.0A		0.027	0.033	Ω
		V _{GS} = 2.5 V, I _D = 4.5A		0.033	0.040	
		V _{DS} = 1.8V, I _D = 4.0 A		0.042	0.051	
Forward Transconductance *	g _{fs}	V _{DS} = 15V, I _D = 5.0 A		40		S
Diode Forward Voltage *	V _{SD}	I _S = 1.0 A, V _{GS} = 0 V		0.8	1.2	V
Total Gate Charge	Q _g	V _{DS} = 10V, V _{GS} = 4.5 V, I _D = 5.0 A		11.2	14	nC
Gate-Source Charge	Q _{gs}			1.4		
Gate-Drain Charge	Q _{gd}			2.2		
Turn-On Delay Time	t _{d(on)}	V _{DD} = 10V, R _L = 10Ω, I _D = 1A, V _{GEN} = -4.5V, R _G = 6Ω		15	25	ns
Rise Time	t _r			40	60	
Turn-Off Delay Time	t _{d(off)}			48	70	
Fall-Time	t _f			31	45	
Source-Drain Reverse Recovery Time	t _{rr}		I _F = 1.0A, di/dt = 100A/μs		13	

*Pulse test: PW ≤ 300μs duty cycle ≤ 2%.