

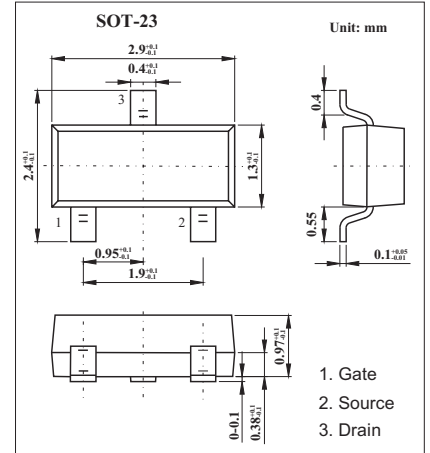
SOT-23 Plastic-Encapsulate MOSFETS

Features

- TrenchFET
- PowerMOSFET ESD Protected: 3000 V
- 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	5secs	Steady State	Unit	
Drain-Source Voltage	V _{DS}	20		V	
Gate-Source Voltage	V _{GS}	±12			
Continuous Drain Current (T _J = 150°C)*1	I _D	TA = 25 °C	4.9	3.77	A
		TA = 70 °C	3.9	3	
Pulsed Drain Current	I _{DM}	15			
Avalanche Current*2	I _{AS}	15			
Single Avalanche Energy	E _{AS}	11.25		W	
Continuous Source Current (Diode Conduction)*1	I _S	1			
Power Dissipation *1	P _D	TA = 25	1.25	0.75	
		TA = 70	0.8	0.48	
Operating Junction and Storage Temperature Range	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 *	R _{thJA}	t ≤ 5 sec	75	100	°C/W
		Steady-State	120	166	
Maximum Junction-to-Foot (Drain)	R _{thJF}	40	50		

* Surface Mounted on 1"X 1" FR4 Board.

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			V
Gate-Body Leakage	I _{GSS}	V _{DS} = 0 V, V _{GS} = ±4.5 V			±1.5	μA
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} = 16V, V _{GS} = 0 V			1	μA
		V _{DS} = 16V, V _{GS} = 0 V, T _J = 70°C			75	
On-State Drain Current*	I _{D(on)}	V _{DS} ≥ 10 V, 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} = 2.5V, I _D = 4.5A		0.033	0.040	
		V _{GS} = 1.8V, I _D = 4.0A		0.042	0.051	
Forward Transconductance	g _{fs}	V _{DS} = 15V, I _D = 5.0 A		40		S
Schottky 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} = 10 V, V _{GS} = 4.5V, I _D = 5.0 A		11.0	14.0	nC
Gate-Source Charge	Q _{gs}		1.5			
Gate-Drain Charge	Q _{gd}		2.1			
Turn-On Delay Time	t _{d(on)}	V _{DD} = 10V, R _L = 10 Ω, I _D = 1.0A, V _{GEN} = 4.5V, R _G = 6 Ω *		0.53	0.8	ns
Rise Time	t _r		1.4	2.2		
Turn-Off Delay Time	t _{d(off)}		13.5	20		
Fall Time	t _f		5.9	9		
Source-Drain Reverse Recovery Time	t _{rr}		I _F = 1.0 A, di/dt = 100 A/μs	13	25	

* Pulse test :Pulse width ≤ 300 μs, duty cycle ≤ 2%

Marking	C4
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