HFZT

LJ2309

SOT-23 Plastic-Encapsulate MOSFETS

Features

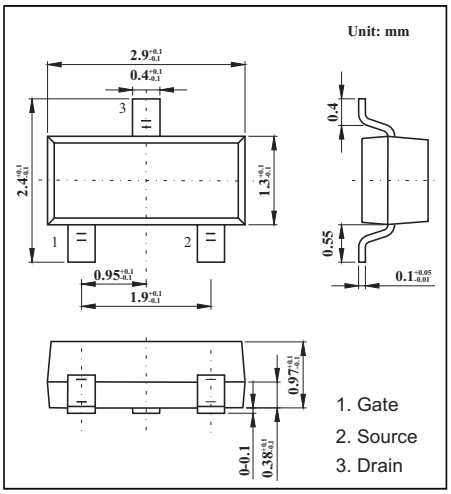
●P-Channel -60V (D-S) MOSFE

T ●TrenchFET Power MOSFET

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_{DS}	-60	V
Gate-source voltage	V_{GS}	±20	V
Continuous drain current (T_J = 150℃)*1 , 2 T_A=25 ℃ T_A=100℃	I_D	-1.25 -0.85	A
Pulsed drain current	I_{DM}	-8	A
Avalanche Current L = 0.1 mH	I_{AS}	-5	A
Maximum Power dissipation *1,2 T_A=25 ℃ T_A=70 ℃	P_D	1.25 0.8	W
Operating junction and storage temperature range	T_j,T_{stg}	-55 to +150	℃

*1 Surface Mounted on FR4 Board.

*2 t≤5 sec

Thermal Resistance Ratings Ta = 25 ℃

Parameter		Symbol	Typical	Maximum	Unit
Maximum Junction to Ambient*	t≤5 sec	R_{thJA}		100	℃/W
	Steady State		130	166	
Maximum Junction-to-Lead*	Steady State	R_{thJL}	45	60	

* Surface Mounted on FR4 Board.

Parameter	Symbol	Testconditons	Min	Typ	Max	Unit
Drain-source breakdown voltage	$V_{(BR)DSS}$	V_{GS} = 0 V , I_D = -250 μA	-60			V
Gate threshold voltage	$V_{GS(th)}$	V_{DS} = V_{GS}, I_D = -250 μA	-1			
Gate-body leakage	I_{GSS}	V_{DS} = 0 V , V_{GS} = ± 20 V			±100	nA
Zero gate voltage drain current	I_{DSS}	V_{DS} = -48 V , V_{GS} = 0 V			-1	μA
		V_{DS} =-48V, V_{GS} = 0 V , T_J = 125 ℃			-50	
On-state drain current	$I_{D(on)}$	V_{DS} ≥ -4.5 V , V_{GS} = -10 V	-6			A
Drain-source on-state resistance	$r_{DS(on)}$	V_{GS} = -10 V , I_D = -1.25 A		0.275	0.340	Ω
		V_{GS} = -4.5 V, I_D =-1 A		0.406	0.550	
Forward transconductance	g_{fs}	V_{DS} = -4.5 V, I_D = -1 A		1.9		S
Total gate charge *	Q_g	V_{DS} = -30 V , V_{GS} = -10 V , I_D= -1.25 A		5.4	12	nC
Gate-source charge *	Q_{gs}			1.15		
Gate-drain charge *	Q_{gd}			0.92		
Turn-On Delay Time	$t_{d(on)}$	V_{DD} = -30 V , R_L = 30 Ω I_D =- 1A , V_{GEN} =-4.5V , R_G = 6 Ω		10.5	20	ns
Rise Time	t_r			11.5	20	
Turn-Off Delay Time	$t_{d(off)}$			15.5	30	
Fall Time	t_f			7.5	15	
Continuous Current	I_S				-1.25	A
Pulsed Current	I_{SM}				-8	A
Diode Forward Voltage*	V_{SD}	I_S = -1.25 A, V_{GS} = 0 V		-0.82	-1.2	V
Source-Drain Reverse Recovery Time	t_{rr}	I_F = -1.25 A, di/dt = 100 A / s μ		30	55	ns

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