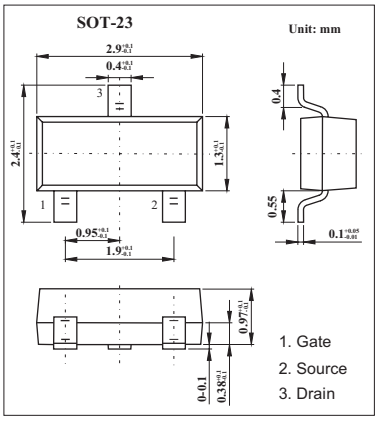
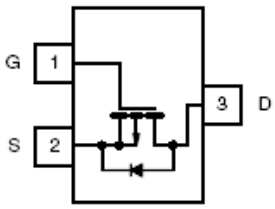
P-Channel 12-V (D-S) MOSFET

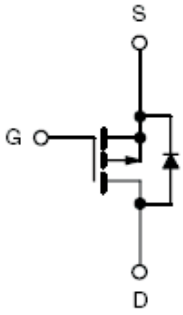
KI2337DS



■ Features

●TrenchFET Power MOSFET





■ Absolute Maximum Ratings Ta = 25℃

Parameter	Symbol	5 sec	Unit
Drain-Source Voltage	V_{DS}	-80	V
Gate-Source Voltage	V_{GS}	±20	V
Continuous Drain Current(T_J=150℃) T_C=25℃ T_C=70℃	I_D	-2.2 -1.75	A
Continuous Drain Current(T_J=150℃) *1,2 T_A=25℃ T_A=70℃	I_D	-1.2 -0.96	A
Pulsed Drain Current	I_{DM}	-7	A
Continuous Source Drain Diode Current T_C=25℃	I_S	-2.1	
Continuous Source Drain Diode Current *1,2 T_A=25℃		-0.63	
Avalanche Current L = 0 1 mH	I_{AS}	11	
Single-Pulse Avalanche Energy L = 0 1 mH	E_{AS}	6.0	mJ
Power Dissipation T_C=25℃ T_C=70℃	P_D	2.5 1.6	W
Power Dissipation *1,2 T_A=25℃ T_A=70℃	P_D	0.76 0.48	W
Jumction Temperature	T_j	150	℃
Storage Temperature	T_{stg}	-55 to +150	℃
Soldering Recommendations (Peak Temperature)*3		260	℃

*1Surface mounted on 1" x 1" FR4 Board.

*2 t = 10 sec

*3 Maximum under steady state conditions is 166 ℃/W.

KI2337DS

■ Electrical Characteristics Ta = 25℃

Parameter	Symbol	Testconditons	Min	Typ	Max	Unit
Drain-Source Breakdown Voltage	V_{DS}	V_{GS} = 0 V, I_D =-250μA	-80			V
VDS Temperature Coefficient	$\triangle V_{DS}/T_J$	I_D = -250 μA		-35.8		mV/℃
VGS(th) Temperature Coefficient	$\triangle V_{GS(th)}/T_J$			5.45		
Gate Threshold Voltage	$V_{GS(th)}$	V_{DS} = V_{GS}, I_D = -250μA	-2		-4	V
Gate-Body Leakage	I_{GSS}	V_{DS} = 0 V, V_{GS} = ±20 V			±100	nA
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS} =-80V, V_{GS} = 0 V			-1	μA
		V_{DS} = -80 V, V_{GS} = 0 V, T_J = 55 ℃			-10	
On-State Drain Current	$I_{D(on)}$	V_{DS} ≥ -5V, V_{GS} = -10V	-7			A
Drain-Source On-State Resistance *	$r_{DS(on)}$	V_{GS} =-10V, I_D = -1.2A		0.216	0.270	Ω
		V_{GS} = -6V, I_D = -1.1 A		0.242	0.303	
Forward Transconductance *	g_{fs}	V_{DS} =-15 V, I_D =-1.2A		4.3		S
Input Capacitance	C_{iss}	V_{DS} = -40 V, V_{GS} = 0, f = 1 MHz		500		pF
Output Capacitance	C_{oss}			40		
Reverse Transfer Capacitance	C_{rss}			25		
Total Gate Charge	Q_g	V_{DS} = -40 V, V_{GS} = -10 V, I_D = -1.2 A		11	17.0	
Total Gate Charge	Q_g	V_{DS} = -40V ,V_{GS} = -6 V , I_D= -1.2A		7	11.0	nC
Gate-Source Charge	Q_{gs}			2.1		
Gate-Drain Charge	Q_{gd}			3.2		
Gate Resistance	R_g	f = 1 MHz		4.8		Ω
Turn-On Delay Time	$t_{d(on)}$	V_{DD} = -40V , R_L =42Ω , I_D = -0.96A , V_{GEN} =-10V , R_G = 1Ω		10	15	ns
Rise Time	t_r			15	23	
Turn-Off Delay Time	$t_{d(off)}$			20	30	
Fall Time	t_f			15	23	
Turn-On Delay Time	$t_{d(on)}$	V_{DD} = -40V , R_L =42Ω , I_D = -0.96A , V_{GEN} =-6V , R_G = 1Ω		15	23	ns
Rise Time	t_r			18	27	
Turn-Off Delay Time	$t_{d(off)}$			20	30	
Fall Time	t_f			12	18	
Continuous Source-Drain Diode Current	I_S	T_C = 25℃			-2.1	A
Pulse Diode Forward Current*	I_{SM}				-7	
Body Diode Voltage	V_{SD}	I_S = 0.63 A		-0.8	-1.2	V
Body Diode Reverse Recovery Time	t_{rr}	I_F = 0.63 A, di/dt = 100 A/μs, T_J = 25℃		30	45	ns
Body Diode Reverse Recovery Charge	Q_{rr}			45	70	nC
Reverse Recovery Fall Time	t_a			25		ns
Reverse Recovery Rise Time	t_b			5		

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

■ Marking

Marking	E7