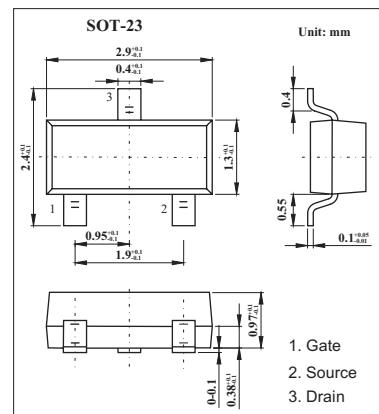
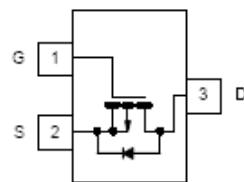


P-Channel 20-V (D-S) MOSFET

KI2323DS

■ Features

- TrenchFET Power MOSFET



■ Absolute Maximum Ratings Ta = 25°C

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) *1,2 TA=25°C TA=70°C	I _D	-4.7 -3.8	-3.7 -2.9	A
Pulsed Drain Current	I _{DM}	-	-20	A
Continuous Source Current (diode conduction) *1,2	I _S	-1.0	-0.6	A
Power Dissipation *1 ,2 TA=25°C TA=70°C	P _D	1.25 0.8	0.75 0.48	W
Junction Temperature	T _j	-	150	°C
Storage Temperature	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 Ta = 25°C

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

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

KI2323DS■ Electrical Characteristics $T_a = 25^\circ\text{C}$

Parameter	Symbol	Testconditons	Min	Typ	Max	Unit
Drain-Source Breakdown Voltage	$V_{(\text{BR})\text{DSS}}$	$V_{\text{GS}} = 0 \text{ V}, I_D = -250 \mu\text{A}$	-20			V
Gate Threshold Voltage	$V_{\text{GS}(\text{th})}$	$V_{\text{DS}} = V_{\text{GS}}, I_D = -250 \mu\text{A}$	-0.40		-1.0	
Gate-Body Leakage	I_{GSS}	$V_{\text{DS}} = 0 \text{ V}, V_{\text{GS}} = \pm 8 \text{ V}$			± 100	nA
Zero Gate Voltage Drain Current	I_{DSS}	$V_{\text{DS}} = -16 \text{ V}, V_{\text{GS}} = 0 \text{ V}$			-1	μA
		$V_{\text{DS}} = -16 \text{ V}, V_{\text{GS}} = 0 \text{ V}, T_J = 55^\circ\text{C}$			-10	
On-State Drain Current	$I_{\text{D(on)}}$	$V_{\text{DS}} \leq -5 \text{ V}, V_{\text{GS}} = -4.5 \text{ V}$	-20			A
Drain-Source On-State Resistance *	$r_{\text{DS(on)}}$	$V_{\text{GS}} = -4.5 \text{ V}, I_D = -4.7 \text{ A}$		0.031	0.039	Ω
		$V_{\text{GS}} = -2.5 \text{ V}, I_D = -4.1 \text{ A}$		0.041	0.052	
		$V_{\text{GS}} = -1.8 \text{ V}, I_D = -2.0 \text{ A}$		0.054	0.068	
Forward Transconductance *	g_{fs}	$V_{\text{DS}} = -5 \text{ V}, I_D = -4.7 \text{ A}$		16		S
Diode Forward Voltage *	V_{SD}	$I_S = -1.0 \text{ A}, V_{\text{GS}} = 0 \text{ V}$		0.7	-1.2	V
Total Gate Charge	Q_g	$V_{\text{DS}} = -10 \text{ V}, V_{\text{GS}} = -4.5 \text{ V}, I_D = -4.7 \text{ A}$		12.5	19	nC
Gate-Source Charge	Q_{gs}			1.7		
Gate-Drain Charge	Q_{gd}			3.3		
Input Capacitance	C_{iss}	$V_{\text{DS}} = -10 \text{ V}, V_{\text{GS}} = 0, f = 1 \text{ MHz}$		1020		pF
Output Capacitance	C_{oss}			191		
Reverse Transfer Capacitance	C_{rss}			140		
Turn-On Time	$t_{\text{d(on)}}$	$V_{\text{DD}} = -10 \text{ V}, R_L = 10 \Omega, I_D = -1 \text{ A}, V_{\text{GEN}} = -4.5 \text{ V}, R_G = 6 \Omega$		25	40	ns
	t_r			43	65	
Turn-Off Time	$t_{\text{d(off)}}$			71	110	
	t_f			48	75	

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

■ Marking

Marking	D3
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