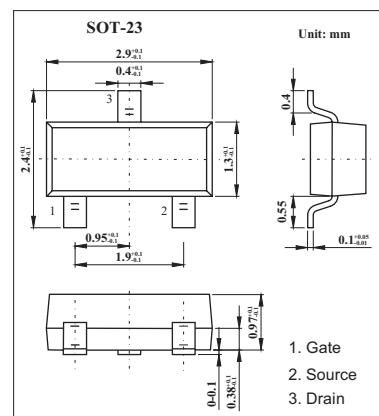
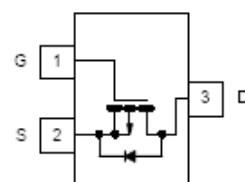


**P-Channel 20-V (D-S) MOSFET****KI2323DS****■ Features**

- TrenchFET Power MOSFET

**■ Absolute Maximum Ratings Ta = 25°C**

Parameter	Symbol	5 sec	Steady State	Unit
Drain-Source Voltage	V <sub>Ds</sub>	-	-20	V
Gate-Source Voltage	V <sub>Gs</sub>	-	±8	V
Continuous Drain Current(T <sub>J</sub> =150°C) *1,2 TA=25°C TA=70°C	I <sub>D</sub>	-4.7 -3.8	-3.7 -2.9	A
Pulsed Drain Current	I <sub>DM</sub>	-	-20	A
Continuous Source Current (diode conduction) *1,2	I <sub>S</sub>	-1.0	-0.6	A
Power Dissipation *1 ,2 TA=25°C TA=70°C	P <sub>D</sub>	1.25 0.8	0.75 0.48	W
Junction Temperature	T <sub>j</sub>	-	150	°C
Storage Temperature	T <sub>stg</sub>	-	-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 <sub>thJA</sub>	75	100	°C/W
Maximum Junction-to-Ambient Steady State		120	166	
Maximum Junction-to-Foot (Drain) Steady State	R <sub>thJF</sub>	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	$I_{\text{GSS}}$	$V_{\text{DS}} = 0 \text{ V}, V_{\text{GS}} = \pm 8 \text{ V}$			$\pm 100$	nA
Zero Gate Voltage Drain Current	$I_{\text{DSS}}$	$V_{\text{DS}} = -16 \text{ V}, V_{\text{GS}} = 0 \text{ V}$			-1	$\mu\text{A}$
		$V_{\text{DS}} = -16 \text{ V}, V_{\text{GS}} = 0 \text{ V}, T_J = 55^\circ\text{C}$			-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	$\Omega$
		$V_{\text{GS}} = -2.5 \text{ V}, I_D = -4.1 \text{ A}$		0.041	0.052	
		$V_{\text{GS}} = -1.8 \text{ V}, I_D = -2.0 \text{ A}$		0.054	0.068	
Forward Transconductance *	$g_{\text{fs}}$	$V_{\text{DS}} = -5 \text{ V}, I_D = -4.7 \text{ A}$		16		S
Diode Forward Voltage *	$V_{\text{SD}}$	$I_S = -1.0 \text{ A}, V_{\text{GS}} = 0 \text{ V}$		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	$Q_{\text{gs}}$			1.7		
Gate-Drain Charge	$Q_{\text{gd}}$			3.3		
Input Capacitance	$C_{\text{iss}}$	$V_{\text{DS}} = -10 \text{ V}, V_{\text{GS}} = 0, f = 1 \text{ MHz}$		1020		pF
Output Capacitance	$C_{\text{oss}}$			191		
Reverse Transfer Capacitance	$C_{\text{rss}}$			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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