

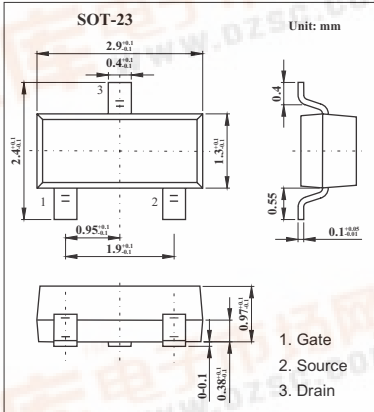
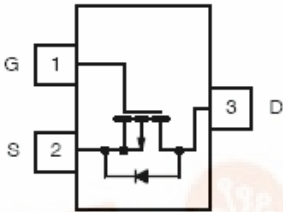
SMD Type

Transistors

P-Channel 30-V (D-S) MOSFET
KI2307BDS

■ Features

- TrenchFET Power MOSFET
- RoHS Compliant



■ Absolute Maximum Ratings $T_a = 25^{\circ}\text{C}$

Parameter	Symbol	5 sec	Steady State	Unit
Drain-Source Voltage	V_{DS}	-30		V
Gate-Source Voltage	V_{GS}	± 20		V
Continuous Drain Current ($T_J=150^{\circ}\text{C}$) * $T_A=25^{\circ}\text{C}$ $T_A=70^{\circ}\text{C}$	I_D	-3.2 -2.6	-2.5 -2.0	A
Pulsed Drain Current *	I_{DM}	-12		A
Continuous Source Current (diode conduction) *2	I_S	-1.25	-0.75	A
Power Dissipation * $T_A=25^{\circ}\text{C}$ $T_A=70^{\circ}\text{C}$	P_D	1.25 0.8	0.75 0.48	W
Junction Temperature	T_J	150		$^{\circ}\text{C}$
Storage Temperature	T_{stg}	-55 to +150		$^{\circ}\text{C}$

* Surface Mounted on FR4 Board.

■ Thermal Resistance Ratings $T_a = 25^{\circ}\text{C}$

Parameter	Symbol	Typical	Maximum	Unit
Maximum Junction-to-Ambient *1	R_{thJA}	80	100	$^{\circ}\text{C/W}$
Maximum Junction-to-Ambient *2 Steady State		130	166	

* 1. Surface Mounted on FR4 Board, $t \leq 5$ sec.

* 2. Surface Mounted on FR4 Board.

KI2307BDS

■ Electrical Characteristics Ta = 25 °C

Parameter	Symbol	Testconditions	Min	Typ	Max	Unit
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	$V_{GS} = 0\text{ V}, I_D = -10\text{ }\mu\text{A}$	-30			V
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS} = V_{GS}, I_D = -250\text{ }\mu\text{A}$	-1.0		-3.0	
Gate-Body Leakage	I_{GSS}	$V_{DS} = 0\text{ V}, V_{GS} = \pm 20\text{ V}$			± 100	nA
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS} = -30\text{ V}, V_{GS} = 0\text{ V}$			-1	μA
		$V_{DS} = -30\text{ V}, V_{GS} = 0\text{ V}, T_J = 55\text{ }^\circ\text{C}$			-10	
On-State Drain Current	$I_{D(on)}$	$V_{DS} \leq -10\text{ V}, V_{GS} = -10\text{ V}$	-6			A
Drain-Source On-State Resistance *	$r_{DS(on)}$	$V_{GS} = -10\text{ V}, I_D = -3.2\text{ A}$		0.063	0.078	Ω
		$V_{GS} = -4.5\text{ V}, I_D = -2.5\text{ A}$		0.105	0.130	
Forward Transconductance *	g_{fs}	$V_{DS} = -10\text{ V}, I_D = -3.2\text{ A}$		5.0		S
Diode Forward Voltage *	V_{SD}	$I_S = -0.75\text{ A}, V_{GS} = 0\text{ V}$		-0.85	-1.2	V
Total Gate Charge	Q_g	$V_{DS} = -15\text{ V}, V_{GS} = -10\text{ V}, I_D = -1.7\text{ A}$		9.0	15	nC
Gate-Source Charge	Q_{gs}			1.4		
Gate-Drain Charge	Q_{gd}			2.4		
Gate Resistance	R_g	$f = 1.0\text{ MHz}$		8		Ω
Input Capacitance	C_{iss}	$V_{DS} = -15\text{ V}, V_{GS} = 0, f = 1\text{ MHz}$		380		pF
Output Capacitance	C_{oss}			100		
Reverse Transfer Capacitance	C_{rss}			75		
Turn-On Time	$t_{d(on)}$	$V_{DD} = -15\text{ V}, R_L = 15\text{ }\Omega, I_D = -1\text{ A}, V_{GEN} = -4.5\text{ V}, R_G = 6\text{ }\Omega$		9	20	ns
	t_r			12	20	
Turn-Off Time	$t_{d(off)}$			25	40	
	t_f			14	21	

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

■ Marking

Marking	L7
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