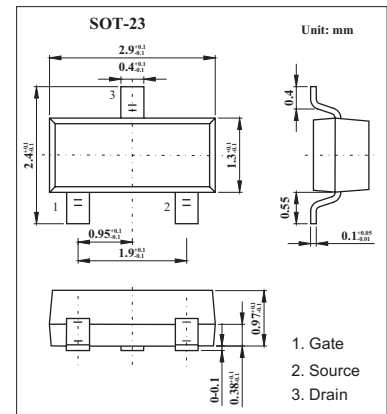
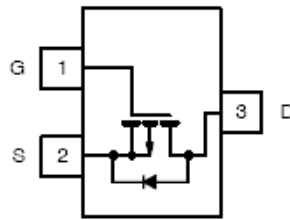


## P-Channel 1.8-V (G-S) MOSFET

## KI2315BDS

## ■ Features

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

Parameter	Symbol	5 sec	Steady State	Unit
Drain-Source Voltage	$V_{DS}$	-12		V
Gate-Source Voltage	$V_{GS}$	$\pm 8$		V
Continuous Drain Current ( $T_J=150^\circ\text{C}$ ) * $T_A=25^\circ\text{C}$ $T_A=70^\circ\text{C}$	$I_D$	-3.85 -3.0	-3.0 -2.45	A
Pulsed Drain Current *	$I_{DM}$	-12		A
Continuous Source Current (diode conduction) *2	$I_S$	-1.0	-0.62	A
Power Dissipation * $T_A=25^\circ\text{C}$ $T_A=70^\circ\text{C}$	$P_D$	1.19 0.76	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	$R_{thJA}$	85	105	$^\circ\text{C}/\text{W}$
Maximum Junction-to-Ambient *2 Steady State		130	166	
Maximum Junction-to-Foot (Drain) Steady State	$R_{thJF}$	60	75	

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

\* 2. Surface Mounted on FR4 Board.

## KI2315BDS

## ■ Electrical Characteristics Ta = 25 °C

Parameter	Symbol	Testconditions	Min	Typ	Max	Unit
Drain-Source Breakdown Voltage	V(BR)DSS	V <sub>GS</sub> = 0 V, I <sub>D</sub> = -10 μA	-12			V
Gate Threshold Voltage	V <sub>GS(th)</sub>	V <sub>DS</sub> = V <sub>GS</sub> , I <sub>D</sub> = -250 μA	-0.45		-0.9	
Gate-Body Leakage	I <sub>GSS</sub>	V <sub>DS</sub> = 0 V, V <sub>GS</sub> = ±8 V			±100	nA
Zero Gate Voltage Drain Current	I <sub>DSS</sub>	V <sub>DS</sub> = -12 V, V <sub>GS</sub> = 0 V			-1	μA
		V <sub>DS</sub> = -12 V, V <sub>GS</sub> = 0 V, T <sub>J</sub> = 55 °C			-10	
On-State Drain Current	I <sub>D(on)</sub>	V <sub>DS</sub> ≤ -5 V, V <sub>GS</sub> = -4.5 V	-6			A
		V <sub>DS</sub> ≤ -5 V, V <sub>GS</sub> = -2.5 V	-3			
Drain-Source On-State Resistance *	r <sub>DS(on)</sub>	V <sub>GS</sub> = -4.5 V, I <sub>D</sub> = -3.85 A		0.040	0.050	Ω
		V <sub>GS</sub> = -2.5 V, I <sub>D</sub> = -3.4 A		0.05	0.065	
		V <sub>GS</sub> = -1.8V, I <sub>D</sub> = -2.7 A		0.071	0.100	
Forward Transconductance *	g <sub>fs</sub>	V <sub>DS</sub> = -5 V, I <sub>D</sub> = -3.85 A		7		S
Diode Forward Voltage *	V <sub>SD</sub>	I <sub>S</sub> = -1.6 A, V <sub>GS</sub> = 0 V			-1.2	V
Total Gate Charge	Q <sub>g</sub>	V <sub>DS</sub> = -6V, V <sub>GS</sub> = -4.5 V, I <sub>D</sub> = -3.85 A		8	15	nC
Gate-Source Charge	Q <sub>gs</sub>			1.1		
Gate-Drain Charge	Q <sub>gd</sub>			2.3		
Input Capacitance	C <sub>iss</sub>	V <sub>DS</sub> = -6V, V <sub>GS</sub> = 0, f = 1 MHz		715		pF
Output Capacitance	C <sub>oss</sub>			275		
Reverse Transfer Capacitance	C <sub>rss</sub>			200		
Turn-On Time	t <sub>d(on)</sub>	V <sub>DD</sub> = -6V, R <sub>L</sub> = 6Ω, I <sub>D</sub> = -1A, V <sub>GEN</sub> = -4.5V, R <sub>G</sub> = 6Ω		15	20	ns
	t <sub>r</sub>			35	50	
Turn-Off Time	t <sub>d(off)</sub>			50	70	
	t <sub>f</sub>			50	75	

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

## ■ Marking

Marking	M5
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