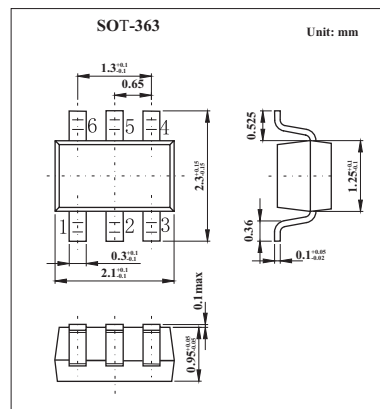
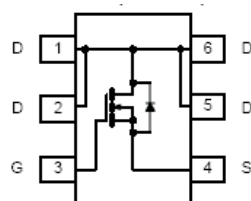


N-Channel 20-V (D-S) MOSFET

KI1400DL

■ Features

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

Parameter	Symbol	5 secs	Steady State	Unit
Drain-source voltage	V_{DS}	20		V
Gate-source voltage	V_{GS}	± 12		V
Continuous drain current ($T_J = 150^\circ\text{C}$)* $T_A = 25^\circ\text{C}$ $T_A = 85^\circ\text{C}$	I_D	1.7 1.2	1.6 1.0	A
Pulsed drain current	I_{DM}	5		A
Continuous source current (diode conduction) *	I_S	0.8	0.8	A
Power dissipation * $T_A = 25^\circ\text{C}$ $T_A = 85^\circ\text{C}$	P_D	0.625 0.400	0.568 0.295	W
Operating junction and storage temperature range	T_J, T_{stg}	-55 to +150		$^\circ\text{C}$

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

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

Parameter		Symbol	Typical	Maximum	Unit
Maximum Junction-to-Ambient*	$t \leq 5 \text{ sec}$	R_{thJA}	165	200	$^\circ\text{C/W}$
	Steady State		180	220	
Maximum Junction-to-Foot (Drain)	Steady State	R_{thJF}	105	130	

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

KI1400DL

■ Electrical Characteristics Ta = 25℃

Parameter	Symbol	Testconditions	Min	Typ	Max	Unit
Gate threshold voltage	$V_{GS(th)}$	$V_{DS} = V_{GS}$, $I_D = -250 \mu A$	0.6			V
Gate-body leakage	I_{GSS}	$V_{DS} = 0 V$, $V_{GS} = \pm 12 V$			± 100	nA
Zero gate voltage drain current	I_{DSS}	$V_{DS} = 16 V$, $V_{GS} = 0 V$			1	μA
		$V_{DS} = 16 V$, $V_{GS} = 0 V$, $T_J = 85 ^\circ C$			5	
On-state drain current	$I_{D(on)}$	$V_{DS} \geq 5 V$, $V_{GS} = 4.5 V$	2			A
Drain-source on-state resistance	$r_{DS(on)}$	$V_{GS} = 4.5 V$, $I_D = 1.7 A$		0.123	0.150	Ω
		$V_{GS} = 2.5V$, $I_D = 1.3A$		0.195	0.235	
Forward transconductance	g_{fs}	$V_{DS} = 10 V$, $I_D = 1.7 A$		5		S
Diode forward voltage	V_{SD}	$I_S = 0.8 A$, $V_{GS} = 0 V$		0.78	1.1	V
Total gate charge *	Q_g	$V_{DS} = 10V$, $V_{GS} = 4.5 V$, $I_D = 1.7A$		2.1	4.0	nC
Gate-source charge *	Q_{gs}			0.3		
Gate-drain charge *	Q_{gd}			0.4		
Turn-on time	$t_{d(on)}$	$V_{DD} = 10V$, $R_L = 20 \Omega$, $I_D = 1A$, $V_{GEN} = 4.5V$, $R_G = 6 \Omega$		10	17	ns
	t_r			30	50	
Turn-off time	$t_{d(off)}$			14	25	
	t_f			8	15	
Source-Drain Reverse Recovery Time	t_{rr}	$I_F = 0.8 A$, $dI/dt = 100 A/\mu s$		30	50	

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

■ Marking

Marking	ND
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