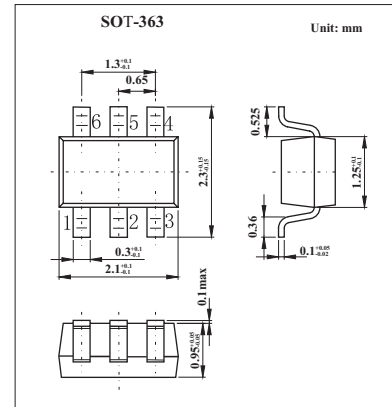
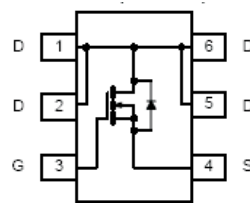


N-Channel 20-V (D-S) MOSFET

KI1400DL

■ Features

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

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

KI1400DL

■ Electrical Characteristics Ta = 25°C

Parameter	Symbol	Testconditions	Min	Typ	Max	Unit		
Gate threshold voltage	V _{GS(th)}	V _{DS} = V _{GS} , I _D = -250 μA	0.6			V		
Gate-body leakage	I _{GSS}	V _{DS} = 0 V, V _{GS} = ±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 °C			5			
On-state drain current	I _{D(on)}	V _{DS} ≥ 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 Ω, I _D = 1A, V _{GEN} = 4.5V, R _G = 6 Ω		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/μs		30		50	

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

■ Marking

Marking	ND
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