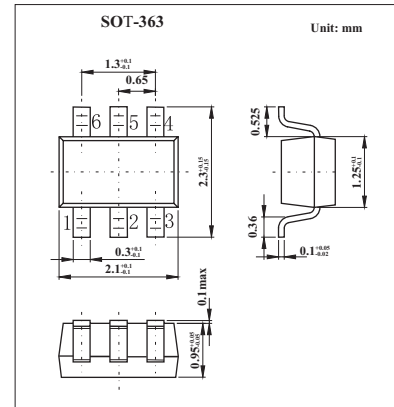
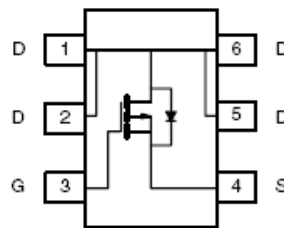


P-Channel 1.8-V (G-S) MOSFET

KI1407DL

■ Features

- TrenchFET Power MOSFETs
- 1.8 V Rated

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

Parameter	Symbol	5 secs	Steady State	Unit
Drain-source voltage	V_{DS}	-12		V
Gate-source voltage	V_{GS}	± 8		V
Continuous drain current ($T_J = 150^\circ\text{C}$)*	I_D	-1.8	-1.6	A
$T_A=25^\circ\text{C}$ $T_A=85^\circ\text{C}$		-1.4	-1.2	
Pulsed drain current	I_{DM}	-5		A
Continuous source current (diode conduction) *	I_S	-0.8	-0.8	A
Power dissipation *	P_D	0.625	0.568	W
$T_A=25^\circ\text{C}$ $T_A=85^\circ\text{C}$		0.400	0.295	
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.

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■ Electrical Characteristics Ta = 25°C

Parameter	Symbol	Testconditions	Min	Typ	Max	Unit
Gate threshold voltage	$V_{GS(th)}$	$V_{DS} = V_{GS}, I_D = -250 \mu A$	-0.45		-1	V
Gate-body leakage	I_{GSS}	$V_{DS} = 0 V, V_{GS} = \pm 8 V$			± 100	nA
Zero gate voltage drain current	I_{DSS}	$V_{DS} = -12 V, V_{GS} = 0 V$			-1	μA
		$V_{DS} = -20 V, V_{GS} = 0 V, T_J = 85 \text{ }^\circ C$			-5	
On-state drain current	$I_{D(on)}$	$V_{DS} = -5 V, V_{GS} = -4.5 V$	-2			A
Drain-source on-state resistance	$r_{DS(on)}$	$V_{GS} = -4.5 V, I_D = -1.8 A$		0.105	0.130	Ω
		$V_{GS} = -2.5 V, I_D = -1.5 A$		0.140	0.170	
		$V_{GS} = -1.8 V, I_D = -0.8 A$		0.185	0.225	
Forward transconductance	g_{fs}	$V_{DS} = -10 V, I_D = -1.8 A$		4.3		S
Diode forward voltage	V_{SD}	$I_S = -0.8 A, V_{GS} = 0 V$		-0.77	-1.1	V
Total gate charge *	Q_g	$V_{DS} = -6 V, V_{GS} = -4.5 V, I_D = -1.8 A$		5.5	7.0	nC
Gate-source charge *	Q_{gs}			0.95		
Gate-drain charge *	Q_{gd}			1.10		
Turn-on time	$t_{d(on)}$	$V_{DD} = -6 V, R_L = 10 \Omega, I_D = -1 A, V_{GEN} = -4.5 V, R_G = 6 \Omega$		8	12	ns
	t_r			33	50	
Turn-off time	$t_{d(off)}$			32	50	
	t_f			29	45	
Source-Drain Reverse Recovery Time	t_{rr}		$I_F = -0.8 A, di/dt = 100 A/\mu s$		20	

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

■ Marking

Marking	OC
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