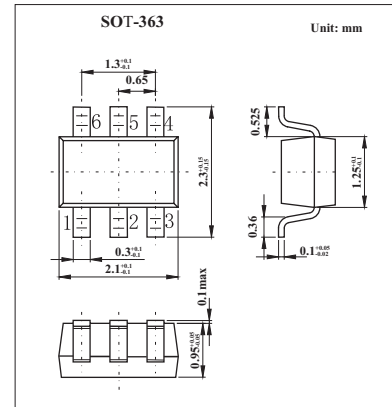
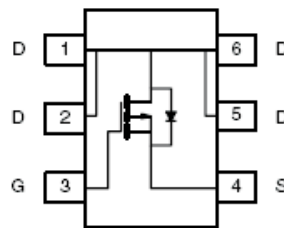


## P-Channel 1.8-V (G-S) MOSFET

## 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	$V_{GS}$	$\pm 8$		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*	$R_{thJA}$	165	200	$^\circ\text{C}/\text{W}$
		Steady State	180	
Maximum Junction-to-Foot (Drain)	$R_{thJF}$	105	130	

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

## KI1407DL

## ■ 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	$I_{GSS}$	$V_{DS} = 0 V, V_{GS} = \pm 8 V$			$\pm 100$	nA
Zero gate voltage drain current	$I_{DSS}$	$V_{DS} = -12 V, V_{GS} = 0 V$			-1	$\mu A$
		$V_{DS} = -20 V, V_{GS} = 0 V, T_J = 85 \text{ }^\circ C$			-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	$\Omega$
		$V_{GS} = -2.5 V, I_D = -1.5 A$		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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