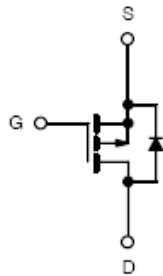


P-Channel 2.5-V (G-S) MOSFET

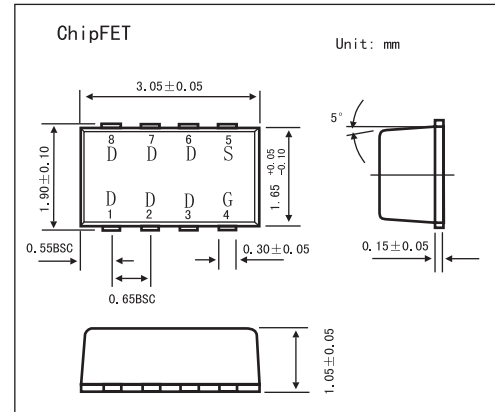
KI5441DC

■ Features

- TrenchFET Power MOSFET
- 2.5-V Rated



P-Channel MOSFET

■ 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		
Continuous Drain Current ($T_J = 150^\circ\text{C}$) *	$T_A = 25^\circ\text{C}$	I_D	-5.3	-3.9	A
	$T_A = 85^\circ\text{C}$		-3.8	-2.8	
Pulsed Drain Current		I_{DM}	-20		
Continuous Source Current *		I_S	-2.1	-1.1	
Maximum Power Dissipation *	$T_A = 25^\circ\text{C}$	P_D	2.5	1.3	W
	$T_A = 85^\circ\text{C}$		1.3	0.7	
Operating Junction and Storage Temperature Range		T_J, T_{stg}	-55 to 150		$^\circ\text{C}$
Soldering Recommendations (Peak Temperature)			260		$^\circ\text{C}$
Parameter		Symbol	Typ	Max	Unit
Maximum Junction-to-Ambient	$t \leq 5 \text{ sec}$	R_{thJA}	40	50	$^\circ\text{C}/\text{W}$
	Steady-State		80	95	
Maximum Junction-to-Foot (Drain)	Steady-State	R_{thJF}	15	20	

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

KI5441DC

■ 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		-1.0	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} = -20V, V _{GS} = 0 V			-1	μA
		V _{DS} = -20V, V _{GS} = 0 V, T _J = 85°C			-5	μA
On-State Drain Current*	I _{D(on)}	V _{DS} ≤ -5 V, V _{GS} = -4.5 V	-20			A
Drain-Source On-State Resistance*	r _{DS(on)}	V _{GS} = -4.5 V, I _D = -3.9A		0.046	0.055	Ω
		V _{GS} = -3.6 V, I _D = -3.7A		0.05	0.06	Ω
		V _{GS} = -2.5 V, I _D = -3.1A		0.07	0.083	Ω
Forward Transconductance*	g _{fs}	V _{DS} = -10 V, I _D = -3.9A		12		S
Schottky Diode Forward Voltage*	V _{SD}	I _S = -1.1 A, V _{GS} = 0 V		-0.8	-1.2	V
Total Gate Charge	Q _g	V _{DS} = -10V, V _{GS} = -4.5 V, I _D = -3.9 A		11	22	nC
Gate-Source Charge	Q _{gs}			3.0		nC
Gate-Drain Charge	Q _{gd}			2.5		nC
Turn-On Delay Time	t _{d(on)}	V _{DD} = -10 V, R _L = 10 Ω I _D = -1 A, V _{GEN} = -4.5V, R _G = 6 Ω		20	30	ns
Rise Time	t _r			35	55	ns
Turn-Off Delay Time	t _{d(off)}			65	100	ns
Fall Time	t _f			45	70	ns
Source-Drain Reverse Recovery Time	t _{rr}		I _F = -1.1 A, di/dt = 100 A/μs		30	60

* Pulse test; pulse width ≤ 300 μs, duty cycle ≤ 2%.