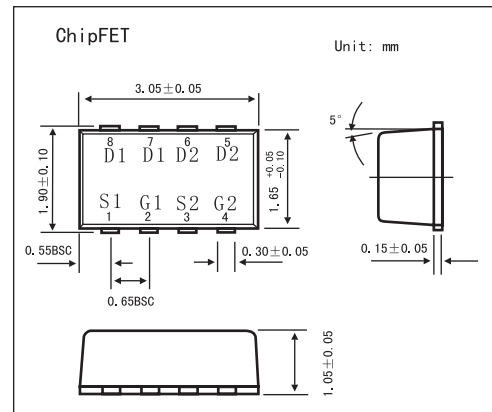
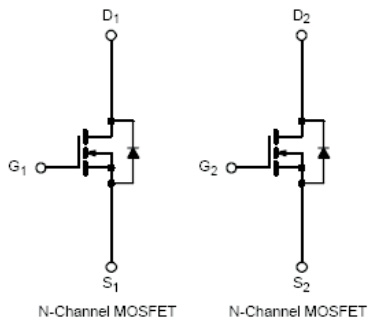


## Dual N-Channel 20-V (D-S) MOSFET KI5908DC

### Features

- TrenchFET Power MOSFETS
- Ultra Low  $r_{DS(on)}$  and Excellent Power Handling In Compact Footprint



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

Parameter	Symbol	5secs	Steady State	Unit
Drain-Source Voltage	$V_{DS}$	20		V
Gate-Source Voltage	$V_{GS}$	$\pm 8$		
Continuous Drain Current ( $T_J = 150^\circ\text{C}$ ) $T_A = 25^\circ\text{C}$ $T_A = 85^\circ\text{C}$	$I_D$	5.9	4.4	A
		4.2	3.1	
Pulsed Drain Current	$I_{DM}$	20		
Continuous Source Current (Diode Conduction)*	$I_S$	1.8	0.9	
Maximum Power Dissipation * $T_A = 25^\circ\text{C}$ $T_A = 85^\circ\text{C}$	$P_D$	2.1	1.1	W
		1.1	0.6	
Operating Junction and Storage Temperature Range	$T_J, T_{stg}$	-55 to 150		$^\circ\text{C}$
Soldering Recommendations		260		$^\circ\text{C}$

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

### Thermal Resistance Ratings

Parameter		Symbol	Typical	Maximum	Unit
Maximum Junction-to-Ambient *	$t \leq 5 \text{ sec}$	$R_{thJA}$	50	60	$^\circ\text{C}/\text{W}$
	Steady-State		90	110	
Maximum Junction-to-Foot (Drain)	Steady-State	$R_{thJF}$	30	40	

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

## KI5908DC

## ■ Electrical Characteristics Ta = 25°C

Parameter	Symbol	Testconditons	Min	Typ	Max	Unit
Gate Threshold Voltage	V <sub>GS(th)</sub>	V <sub>DS</sub> = V <sub>GS</sub> , I <sub>D</sub> = 250 μA	0.4		1.0	V
Gate-Body Leakage	I <sub>GSS</sub>	V <sub>DS</sub> = 0 V, V <sub>GS</sub> = ±8 V			±100	nA
Zero Gate Voltage Drain Current	I <sub>DSS</sub>	V <sub>DS</sub> = 20V, V <sub>GS</sub> = 0 V			1	μA
		V <sub>DS</sub> = 20 V, V <sub>GS</sub> = 0 V, T <sub>J</sub> = 85°C			5	
On-State Drain Current*	I <sub>D(on)</sub>	V <sub>DS</sub> ≥ 5 V, V <sub>GS</sub> = 4.5 V	20			A
Drain Source On State Resistance*	r <sub>DS(on)</sub>	V <sub>GS</sub> = 4.5 V, I <sub>D</sub> = 4.4 A		0.032	0.04	Ω
		V <sub>GS</sub> = 2.5V, I <sub>D</sub> = 4.1A		0.036	0.045	
		V <sub>GS</sub> = 2.5V, I <sub>D</sub> = 1.9A		0.042	0.052	
Forward Transconductance <sup>b</sup>	g <sub>fs</sub>	V <sub>DS</sub> = 10V, I <sub>D</sub> = 4.4 A		22		S
Schottky Diode Forward Voltage*	V <sub>SD</sub>	I <sub>S</sub> = 0.9 A, V <sub>GS</sub> = 0 V		0.8	1.2	V
Total Gate Charge	Q <sub>g</sub>	V <sub>DS</sub> = 10 V, V <sub>GS</sub> = 4.5V, I <sub>D</sub> = 4.4 A		5	7.5	nC
Gate-Source Charge	Q <sub>gs</sub>			0.85		
Gate-Drain Charge	Q <sub>gd</sub>			1		
Gate Resistance	R <sub>g</sub>			1.9		
Turn-On Delay Time	t <sub>d(on)</sub>	V <sub>DD</sub> =10V,RL=10 Ω ,I <sub>D</sub> =1A,V <sub>GEN</sub> =10V,R <sub>G</sub> =6 Ω		20	30	ns
Rise Time	t <sub>r</sub>			36	55	
Turn-Off Delay Time	t <sub>d(off)</sub>			30	45	
Fall Time	t <sub>f</sub>			12	20	
Source-Drain Reverse Recovery Time	t <sub>rr</sub>	I <sub>F</sub> = 0.9 A, di/dt = 100 A/μs		45	90	ns

\* Pulse test :Pulse width ≤300 μs,duty cycle≤2%