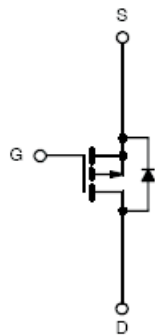


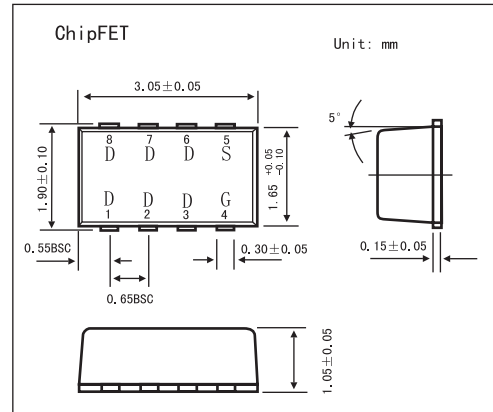
## P-Channel 20-V (D-S) MOSFET

### KI5433DC

#### ■ Features



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		$V_{GS}$	$\pm 8$		
Continuous Drain Current ( $T_J = 150^\circ\text{C}$ )*	$T_A = 25^\circ\text{C}$	$I_D$	-6.7	-4.8	A
	$T_A = 85^\circ\text{C}$		-4.8	-3.5	
Pulsed Drain Current		$I_{DM}$	-20		
Continuous Source Current *		$I_S$	-2.1	-1.1	W
Maximum Power Dissipation *	$T_A = 25^\circ\text{C}$	$P_D$	2.5	1.3	
	$T_A = 85^\circ\text{C}$		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.

## KI5433DC

## ■ Electrical Characteristics Ta = 25°C

Parameter	Symbol	Testconditions	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	-0.45			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> = -16V, V <sub>GS</sub> = 0 V			-1	μA
		V <sub>DS</sub> = -16V, V <sub>GS</sub> = 0 V, T <sub>J</sub> = 85°C			-5	μA
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> = -4.8A		0.036	0.028	Ω
		V <sub>GS</sub> = -2.5 V, I <sub>D</sub> = -4.2A		0.045	0.039	Ω
		V <sub>GS</sub> = -1.8 V, I <sub>D</sub> = -1A		0.062		Ω
Forward Transconductance*	g <sub>fs</sub>	V <sub>DS</sub> = -10 V, I <sub>D</sub> = -4.8A		15		S
Schottky Diode Forward Voltage*	V <sub>SD</sub>	I <sub>S</sub> = -1.1 A, V <sub>GS</sub> = 0 V		-0.8	-1.2	V
Total Gate Charge	Q <sub>g</sub>	V <sub>DS</sub> = -10V, V <sub>GS</sub> = -4.5 V, I <sub>D</sub> = -4.8 A		15	22	nC
Gate-Source Charge	Q <sub>gs</sub>			3.6		nC
Gate-Drain Charge	Q <sub>gd</sub>			2.5		nC
Turn-On Delay Time	t <sub>d(on)</sub>	V <sub>DD</sub> = -10 V, R <sub>L</sub> = 10 Ω I <sub>D</sub> = -1 A, V <sub>GEN</sub> = -4.5V, R <sub>G</sub> = 6 Ω		22	35	ns
Rise Time	t <sub>r</sub>			29	45	ns
Turn-Off Delay Time	t <sub>d(off)</sub>			94	140	ns
Fall Time	t <sub>f</sub>			54	80	ns
Source-Drain Reverse Recovery Time	t <sub>rr</sub>	I <sub>F</sub> = -1.1 A, di/dt = 100 A/μs		30	60	ns

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