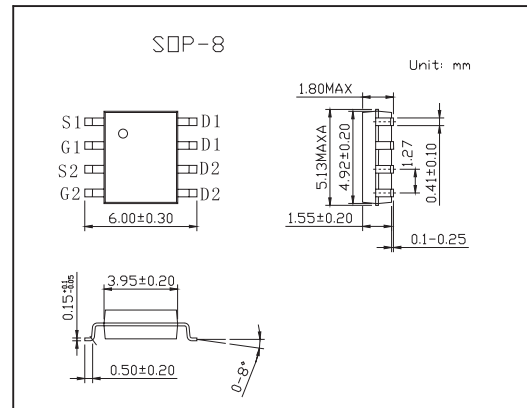
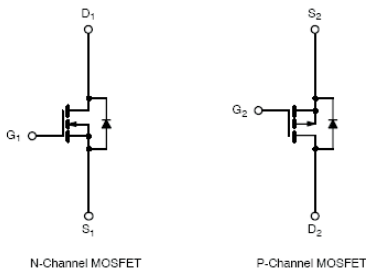


## N- and P-Channel 30-V (D-S) MOSFET

## KI4532ADY

## ■ PIN Configuration

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

Parameter	Symbol	N-Channel		P-Channel		Unit
		10 sec	Steady State	10 sec	Steady State	
Drain-Source Voltage	$V_{DS}$	30		-30		V
Gate-Source Voltage	$V_{GS}$	$\pm 20$		$\pm 20$		V
Continuous Drain Current ( $T_J = 150^\circ\text{C}$ )* $T_A = 25^\circ\text{C}$	$I_D$	4.9	3.7	-3.9	-3	A
		$T_A = 70^\circ\text{C}$	3.9	2.9	-3.1	-2.4
Pulsed Drain Current	$I_{DM}$	20				A
Continuous Source Current (Diode Conduction)*	$I_S$	1.7	0.94	-1.7	-1	A
Maximum Power Dissipation* $T_A = 25^\circ\text{C}$	$P_D$	2	1.13	2	1.2	W
		$T_A = 70^\circ\text{C}$	1.3	0.73	1.3	0.76
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	N-Channel		P-Channel		Unit	
		Typ	Max	Typ	Max		
Maximum Junction-to-Ambient*	$R_{thJA}$	$t \leq 10$ sec	55	62.5	54	62.5	$^\circ\text{C}/\text{W}$
		Steady State	90	110	87	105	
Maximum Junction-to-Foot	$R_{thJc}$	40	50	34	45		

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

## KI4532ADY

■ Electrical Characteristics  $T_J = 25^\circ\text{C}$ 

Parameter	Symbol	Testconditions	Min	Typ	Max	Unit	
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS} = V_{GS}, I_D = 250 \mu\text{A}$	N-Ch	1		V	
		$V_{DS} = V_{GS}, I_D = -250 \mu\text{A}$	P-Ch	-1			
Gate Body Leakage	$I_{GSS}$	$V_{DS} = 0\text{V}, V_{GS} = \pm 20\text{V}$	N-Ch		$\pm 100$	nA	
		$V_{DS} = 0\text{V}, V_{GS} = \pm 20\text{V}$	P-Ch		$\pm 100$		
Zero Gate Voltage Drain Current	$I_{DSS}$	$V_{DS} = 30\text{V}, V_{GS} = 0\text{V}$	N-Ch		1	$\mu\text{A}$	
		$V_{DS} = -30\text{V}, V_{GS} = 0\text{V}$	P-Ch		-1		
		$V_{DS} = 30\text{V}, V_{GS} = 0\text{V}, T_J = 55^\circ\text{C}$	N-Ch		5		
		$V_{DS} = -30\text{V}, V_{GS} = 0\text{V}, T_J = 55^\circ\text{C}$	P-Ch		-5		
On State Drain Currenta	$I_{D(on)}$	$V_{DS} \geq 5\text{V}, V_{GS} = 10\text{V}$	N-Ch	20		A	
		$V_{DS} \leq -5\text{V}, V_{GS} = -10\text{V}$	P-Ch	-20			
Drain Source On State Resistance*	$r_{DS(on)}$	$V_{GS} = 10\text{V}, I_D = 4.9\text{A}$	N-Ch		0.044	0.053	$\Omega$
		$V_{GS} = -10\text{V}, I_D = -3.9\text{A}$	P-Ch		0.062	0.080	
		$V_{GS} = 4.5\text{V}, I_D = 4.1\text{A}$	N-Ch		0.062	0.075	
		$V_{GS} = -4.5\text{V}, I_D = -3.0\text{A}$	P-Ch		0.105	0.135	
Forward Transconductance*	$g_{fs}$	$V_{DS} = 15\text{V}, I_D = 4.9\text{A}$	N-Ch		11	S	
		$V_{DS} = -15\text{V}, I_D = -2.5\text{A}$	P-Ch		5		
Diode Forward Voltage*	$V_{SD}$	$I_S = 1.7\text{A}, V_{GS} = 0\text{V}$	N-Ch		0.80	1.2	V
		$I_S = -1.7\text{A}, V_{GS} = 0\text{V}$	P-Ch		-0.82	-1.2	
Total Gate Charge	$Q_g$	N-Channel $V_{DS} = 10\text{V}, V_{GS} = 10\text{V}, I_D = 4.9\text{A}$	N-Ch		8	16	nC
Gate Source Charge	$Q_{gs}$	P-Channel $V_{DS} = -10\text{V}, V_{GS} = -10\text{V}, I_D = -3.9\text{A}$	N-Ch		1.4		
Gate Drain Charge	$Q_{gd}$		P-Ch		2		
			N-Ch		1.2		
Turn On Time	$t_{d(on)}$	N Channel $V_{DD} = 10\text{V}, R_L = 10\Omega$	N-Ch		12	20	ns
Rise Time	$t_r$		P-Ch		8	15	
Turn Off Delay Time	$t_{d(off)}$	P-Channel $V_{DD} = -10\text{V}, R_L = 10\Omega$	N-Ch		23	45	
			P-Ch		21	40	
Fall Time	$t_f$	N Channel $I_D = -1\text{A}, V_{GEN} = -10\text{V}, R_g = 6\Omega$	N-Ch		8	15	
			P-Ch		10	20	
Source-Drain Reverse Recovery Time	$t_{rr}$	$I_F = 1.7\text{A}, di/dt = 100\text{A}/\mu\text{s}$	N-Ch		25	40	
		$I_F = -1.7\text{A}, di/dt = 100\text{A}/\mu\text{s}$	P-Ch		27	40	

\* Pulse test; pulse width  $\leq 300 \mu\text{s}$ , duty cycle  $\leq 2\%$ .