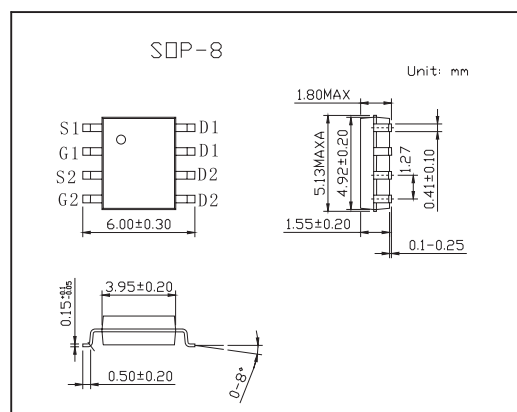
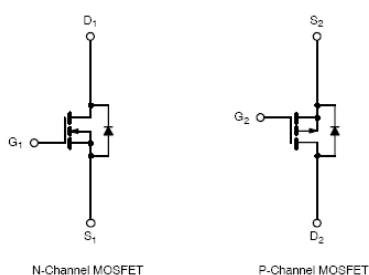


N- and P-Channel 30-V (D-S) MOSFET

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}	±20		±20		V
Continuous Drain Current (T _J = 150°C)* T _A = 25°C	I _D	4.9	3.7	-3.9	-3	A
T _A = 70°C		3.9	2.9	-3.1	-2.4	A
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°C	P _D	2	1.13	2	1.2	W
T _A = 70°C		1.3	0.73	1.3	0.76	W
Operating Junction and Storage Temperature Range	T _J , T _{stg}	-55 to 150				°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*	$t \leq 10 \text{ sec}$	R_{thJA}	55	62.5	54	62.5	$^{\circ}\text{C/W}$
	Steady State		90	110	87	105	
Maximum Junction-to-Foot	Steady State	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			± 100	nA
		$V_{DS} = 0\text{ V}, V_{GS} = \pm 20\text{ V}$	P-Ch			± 100	
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS} = 30\text{ V}, V_{GS} = 0\text{ V}$	N-Ch			1	nA
		$V_{DS} = -30\text{ V}, V_{GS} = 0\text{ V}$	P-Ch			-1	
		$V_{DS} = 30\text{ V}, V_{GS} = 0\text{ V}, T_J = 55^\circ\text{C}$	N-Ch			5	μA
		$V_{DS} = -30\text{ V}, V_{GS} = 0\text{ V}, T_J = 55^\circ\text{C}$	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	Ω
		$V_{GS} = -10\text{ V}, I_D = -3.9\text{A}$	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		
			P-Ch		2		
Gate Drain Charge	Q_{gd}		N-Ch		1.2		
			P-Ch		1.9		
Turn On Time	$t_{d(on)}$	N Channel $V_{DD} = 10\text{ V}, R_L = 10\ \Omega$	N-Ch		12	20	ns
			P-Ch		8	15	
Rise Time	t_r	$I_D = 1\text{A}, V_{GEN} = 10\text{V}, R_g = 6\ \Omega$	N-Ch		10	20	
			P-Ch		9	18	
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	$I_D = -1\text{A}, V_{GEN} = -10\text{ V}, R_g = 6\ \Omega$	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 $\leq 2\%$.