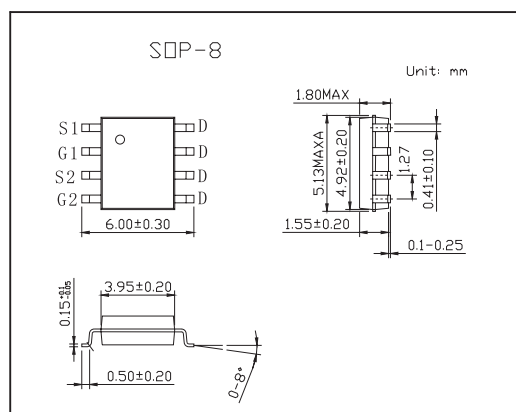
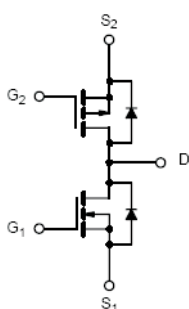


N- and P-Channel 30-V (D-S) MOSFET

KI4544DY

■ PIN Configuration



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

Parameter	Symbol	N-Channel	P-Channel	Unit	
Drain-Source Voltage	V_{DS}	30	-30	V	
Gate-Source Voltage	V_{GS}	± 20	± 20	V	
Continuous Drain Current ($T_J = 150^\circ\text{C}$)* $T_A = 25^\circ\text{C}$	I_D	± 6.5	± 5.7	A	
		$T_A = 70^\circ\text{C}$	± 5.4	± 4.0	A
Pulsed Drain Current	I_{DM}	± 20	± 20	A	
Continuous Source Current (Diode Conduction)*	I_S	1.7	-1.7	A	
Maximum Power Dissipation*	P_D	$T_A = 25^\circ\text{C}$		2.4	W
		$T_A = 70^\circ\text{C}$		1.5	W
Operating Junction and Storage Temperature Range	T_J, T_{stg}	-55 to 150		$^\circ\text{C}$	
Maximum Junction-to-Ambient *	R_{thJA}	52		$^\circ\text{C}/\text{W}$	

*Surface Mounted on FR4 Board, $t \leq 10$ sec.

KI4544DY

■ Electrical Characteristics T_J = 25°C

Parameter	Symbol	Testconditions	Min	Typ	Max	Unit	
Gate Threshold Voltage	V _{GS(th)}	V _{DS} = V _{GS} , I _D = 250 μA	N-Ch	1		V	
		V _{DS} = V _{GS} , I _D = -250 μA	P-Ch	-1			
Gate Body Leakage	I _{GSS}	V _{DS} = 0 V, V _{GS} = ±20 V	N-Ch		±100	nA	
		V _{DS} = 0 V, V _{GS} = ±20 V	P-Ch		±100		
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} = 30V, V _{GS} = 0 V	N-Ch		1	nA	
		V _{DS} = -30V, V _{GS} = 0 V	P-Ch		-1		
		V _{DS} = 30 V, V _{GS} = 0 V, T _J = 55°C	N-Ch		5	μA	
		V _{DS} = -30V, V _{GS} = 0 V, T _J = 55°C	P-Ch		-5		
On State Drain Currenta	I _{D(on)}	V _{DS} ≥ 5 V, V _{GS} = 10 V	N-Ch	20		A	
		V _{DS} ≥ -5 V, V _{GS} = -10 V	P-Ch	-20			
		V _{DS} ≥ 5 V, V _{GS} = 4.5 V	N-Ch	5		A	
		V _{DS} ≥ -5 V, V _{GS} = -4.5 V	P-Ch	-5			
Drain Source On State Resistance*	r _{DS(on)}	V _{GS} = 10 V, I _D = 6.5A	N-Ch		0.027	0.035	Ω
		V _{GS} = -10 V, I _D = -5.7A	P-Ch		0.036	0.045	
		V _{GS} = 4.5 V, I _D = 5.4A	N-Ch		0.038	0.050	
		V _{GS} = -4.5 V, I _D = -4.0A	P-Ch		0.060	0.090	
Forward Transconductance*	g _{fs}	V _{DS} = 15 V, I _D = 6.5A	N-Ch		15	S	
		V _{DS} = -15 V, I _D = -5.7A	P-Ch		9		
Diode Forward Voltage*	V _{SD}	I _S = 1.7A, V _{GS} = 0 V	N-Ch		0.75	1.2	V
		I _S = -1.7A, V _{GS} = 0 V	P-Ch		-0.75	-1.2	
Total Gate Charge	Q _g	N-Channel V _{DS} = 15 V, V _{GS} = 10V, I _D = 6.5A	N-Ch		18	35	nC
Gate Source Charge	Q _{gs}		P-Ch		19	40	
Gate Drain Charge	Q _{gd}	P-Channel V _{DS} = -15 V, V _{GS} = -10 V, I _D = -5.7A	N-Ch		4.2		
			P-Ch		4.5		
Turn On Time	t _{d(on)}	N Channel V _{DD} = 15 V, R _L = 15 Ω	N-Ch		13	30	ns
Rise Time	t _r		P-Ch		13	30	
Turn Off Delay Time	t _{d(off)}	P-Channel V _{DD} = -15 V, R _L = 15 Ω	N-Ch		31	60	
			P-Ch		37	70	
Fall Time	t _f	ID = -1 A, V _{GEN} = -10 V, R _g = 6 Ω	N-Ch		10	30	
			P-Ch		14	30	
Source-Drain Reverse Recovery Time	t _{rr}	I _F = 1.7 A, di/dt = 100 A/μs	N-Ch		30	70	
		I _F = -1.7 A, di/dt = 100 A/μs	P-Ch		35	70	

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