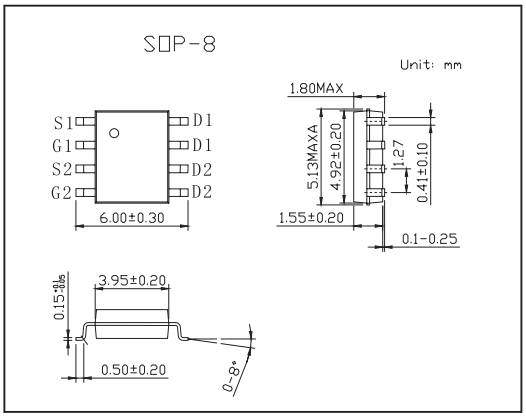
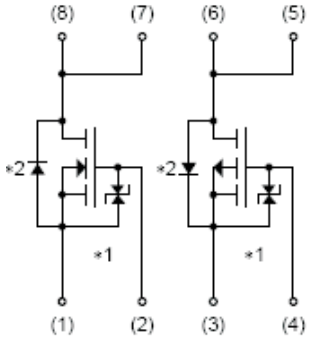
Switching

KP8M9



■ Features

- Low on-resistance.
- Built-in G-S Protection Diode.
- Small and Surface Mount Package.
- Power switching, DC / DC converter.



*1 ESD PROTECTION DIODE
*2 BODY DIODE

■ Absolute Maximum Ratings Ta = 25℃

Parameter	Symbol	N-Channel	P-Channel	Unit
Drain-source voltage	V_{DSS}	30	-30	V
Gate-source voltage	V_{GSS}	20	-20	V
Drain current Continuous	I_D	±9.0	±5.0	A
Drain current Pulsed *	I_{DP}	±36	±20	A
Source current (Body diode) Continuous	I_S	1.6	-1.6	A
Source current (Body diode) Pulsed *	I_{SP}	36	-20	A
Total power dissipation	P_D	2		W
Channel temperature	T_{ch}	150		℃
Storage temperature	T_{stg}	-55 to +150		℃
Channel to ambient	$R_{th\ (ch-a)}$	62.5		℃/W

* Pw≤10μs, Duty cycle≤1%

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■ Electrical Characteristics Ta = 25℃

Parameter	Symbol	Testconditons		Min	Typ	Max	Unit
Gate-source leakage	I_{GSS}	V_{GS}=20V,V_{DS}=0V	N-Ch			10	μA
		V_{GS}=-20V,V_{DS}=0V	P-Ch			±10	
Drain-source breakdown voltage	$V_{(BR)\ DSS}$	I_D=1mA,V_{GS}=0V	N-Ch	30			V
		I_D=-1mA,V_{GS}=0V	P-Ch	-30			
Zero gate voltage drain current	I_{DSS}	V_{DS}=30V,V_{GS}=0V	N-Ch			1	μA
		V_{DS}=-30V,V_{GS}=0V	P-Ch			-1	
Gate threshold voltage	$V_{GS\ (th)}$	V_{DS}=10V,I_D=1mA	N-Ch	1.0		2.5	V
		V_{DS}=-10V,I_D=-1mA	P-Ch	-1.0		-2.5	
Static drain-source on-state resistance	$R_{DS\ (on)}$	I_D=9.0A,V_{GS}=10A	N-Ch		12	18	mΩ
		I_D=9.0A,V_{GS}=4.5V			16	24	
		I_D=9.0A,V_{GS}=4V			17	25	
Static drain-source on-state resistance	$R_{DS\ (on)}$	I_D=-5.0A,V_{GS}=-10A	P-Ch		30	42	mΩ
		I_D=-2.5A,V_{GS}=-4.5V			40	56	
		I_D=-2.5A,V_{GS}=-4.0V			45	63	
Forward transfer admittance	$\|Y_{fs}\|$	I_D=9.0A,V_{DS}=10V	N-Ch	7.0			S
		I_D=-2.5A,V_{DS}=-10V	P-Ch	4.5			
Input capacitance	C_{iss}	N-Channel V_{DS}=10V,V_{GS}=0V,f=1MHz	N-Ch		1190		pF
			P-Ch		1400		
Output capacitance	C_{oss}	P-Channel V_{DS}=-10V,V_{GS}=0V,f=1MHz	N-Ch		340		pF
			P-Ch		300		
Reverse transfer capacitance	C_{rss}		N-Ch		190		pF
			P-Ch		230		
Turn-on delay time	$t_{d\ (on)}$	I_D=4.5A,V_{DD}=15V	N-Ch		10		ns
		I_D=-2.5A,V_{DD}=-15V	P-Ch		15		
Rise time	t_r	N-Channel V_{GS}=10V,R_L=3.33Ω,R_G=10Ω	N-Ch		15		ns
			P-Ch		30		
Turn-off delay time	$t_{d\ (off)}$	P-Channel V_{GS}=-10V,R_L=6.0Ω,R_G=10Ω	N-Ch		55		ns
			P-Ch		80		
Fall time	t_f		N-Ch		22		ns
			P-Ch		40		
Total gate charge	Q_g	N-Channel V_{DD}=15V,V_{GS}=5V,I_D=9.0A	N-Ch		15	21	nC
			P-Ch		16		
Gate-source charge	Q_{gs}	P-Channel V_{DD}=-15V,V_{GS}=-5V,I_D=-5.0A	N-Ch		3.0		nC
			P-Ch		3.5		
Gate-drain charge	Q_{gd}		N-Ch		6.1		nC
			P-Ch		6.5		
Forward voltage	V_{SD}	I_S=6.4A, V_{GS}=0V	N-Ch			1.2	V
		I_S=-1.6A, V_{GS}=0V	P-Ch			-1.2	