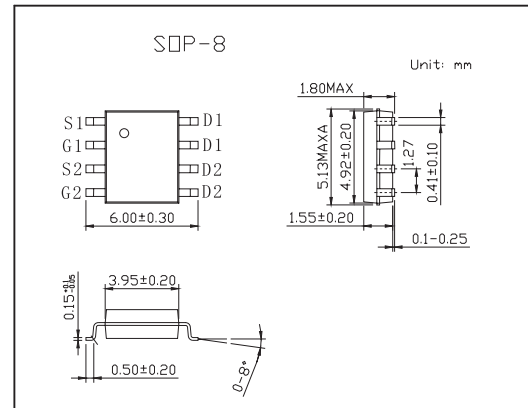
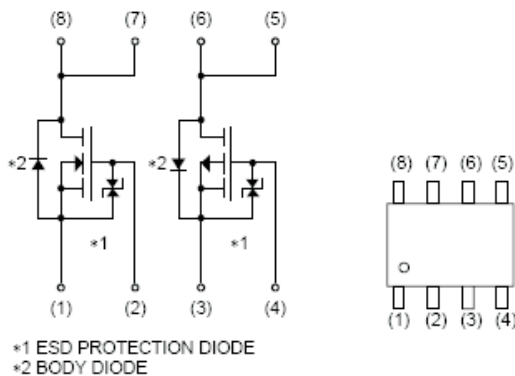


## Switching

## KP8M6

## ■ Features

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

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

Parameter	Symbol	N-Channel	P-Channel	Unit
Drain-source voltage	$V_{bss}$	30	-30	V
Gate-source voltage	$V_{gss}$	20	-20	V
Drain current Continuous	$I_D$	$\pm 5.0$	$\pm 3.5$	A
Drain current Pulsed *	$I_{DP}$	$\pm 20$	$\pm 14$	A
Source current (Body diode) Continuous	$I_S$	1.6	-1.6	A
Source current (Body diode) Pulsed *	$I_{SP}$	20	-14	A
Total power dissipation	$P_D$	2		W
Channel temperature	$T_{ch}$	150		$^\circ\text{C}$
Storage temperature	$T_{stg}$	-55 to +150		$^\circ\text{C}$
Channel to ambient	$R_{th(ch-a)}$	62.5		$^\circ\text{C/W}$

\*  $P_w \leq 10 \mu\text{s}$ , Duty cycle  $\leq 1\%$

## KP8M6

## ■ Electrical Characteristics Ta = 25°C

Parameter	Symbol	Testconditions	Min	Typ	Max	Unit	
Gate-source leakage	I <sub>GSS</sub>	V <sub>GS</sub> =20V, V <sub>DS</sub> =0V	N-Ch		10	μ A	
		V <sub>GS</sub> =-20V, V <sub>DS</sub> =0V	P-Ch		±10		
Drain-source breakdown voltage	V <sub>(BR) DSS</sub>	I <sub>D</sub> =1mA, V <sub>GS</sub> =0V	N-Ch	30		V	
		I <sub>D</sub> =-1mA, V <sub>GS</sub> =0V	P-Ch	-30			
Zero gate voltage drain current	I <sub>DSS</sub>	V <sub>DS</sub> =30V, V <sub>GS</sub> =0V	N-Ch		1	μ A	
		V <sub>DS</sub> =-30V, V <sub>GS</sub> =0V	P-Ch		-1		
Gate threshold voltage	V <sub>GS (th)</sub>	V <sub>DS</sub> =10V, I <sub>D</sub> =1mA	N-Ch	1.0	2.5	V	
		V <sub>DS</sub> =-10V, I <sub>D</sub> =-1mA	P-Ch	-1.0	-2.5		
Static drain-source on-state resistance	R <sub>DS (on)</sub>	I <sub>D</sub> =5.0A, V <sub>GS</sub> =10A	N-Ch		36	51	m Ω
		I <sub>D</sub> =5.0A, V <sub>GS</sub> =4.5V			52	73	
		I <sub>D</sub> =5.0A, V <sub>GS</sub> =4V			58	82	
Static drain-source on-state resistance	R <sub>DS (on)</sub>	I <sub>D</sub> =-3.5A, V <sub>GS</sub> =-10A	P-Ch		65	90	m Ω
		I <sub>D</sub> =-1.75A, V <sub>GS</sub> =-4.5V			100	140	
		I <sub>D</sub> =-1.75A, V <sub>GS</sub> =-4.0V			120	165	
Forward transfer admittance	Y <sub>fs</sub>	I <sub>D</sub> =5.0A, V <sub>DS</sub> =10V	N-Ch	3.0		S	
		I <sub>D</sub> =-1.75A, V <sub>DS</sub> =-10V	P-Ch	1.8			
Input capacitance	C <sub>iss</sub>	N-Channel V <sub>DS</sub> =10V, V <sub>GS</sub> =0V, f=1MHz	N-Ch		230	pF	
			P-Ch		490		
Output capacitance	C <sub>oss</sub>	P-Channel	N-Ch		80	pF	
			P-Ch		110		
Reverse transfer capacitance	C <sub>rss</sub>	V <sub>DS</sub> =-10V, V <sub>GS</sub> =0V, f=1MHz	N-Ch		50	pF	
			P-Ch		75		
Turn-on delay time	t <sub>d (on)</sub>	I <sub>D</sub> =2.5A, V <sub>DD</sub> =15V	N-Ch		6	ns	
		I <sub>D</sub> =-1.75A, V <sub>DD</sub> =-15V	P-Ch		10		
Rise time	t <sub>r</sub>	N-Channel V <sub>GS</sub> =10V, R <sub>L</sub> =6.0 Ω, R <sub>G</sub> =10 Ω	N-Ch		8	ns	
			P-Ch		15		
Turn-off delay time	t <sub>d (off)</sub>	P-Channel V <sub>GS</sub> =-10V, R <sub>L</sub> =8.6 Ω, R <sub>G</sub> =10 Ω	N-Ch		22	ns	
			P-Ch		35		
Fall time	t <sub>f</sub>	N-Channel V <sub>GS</sub> =-10V, R <sub>L</sub> =8.6 Ω, R <sub>G</sub> =10 Ω	N-Ch		5	ns	
			P-Ch		10		
Total gate charge	Q <sub>g</sub>	N-Channel V <sub>DD</sub> =15V, V <sub>GS</sub> =5V, I <sub>D</sub> =5.0A	N-Ch		3.9	5.5	nC
			P-Ch		5.5		
Gate-source charge	Q <sub>gs</sub>	P-Channel	N-Ch		1.1		nC
			P-Ch		1.5		
Gate-drain charge	Q <sub>gd</sub>	V <sub>DD</sub> =-15V, V <sub>GS</sub> =-5V, I <sub>D</sub> =-3.5A	N-Ch		1.4		nC
			P-Ch		2.0		
Forward voltage	V <sub>SD</sub>	I <sub>S</sub> =6.4A, V <sub>GS</sub> =0V	N-Ch		1.2	V	
		I <sub>S</sub> =-1.0A, V <sub>GS</sub> =0V	P-Ch		-1.2		