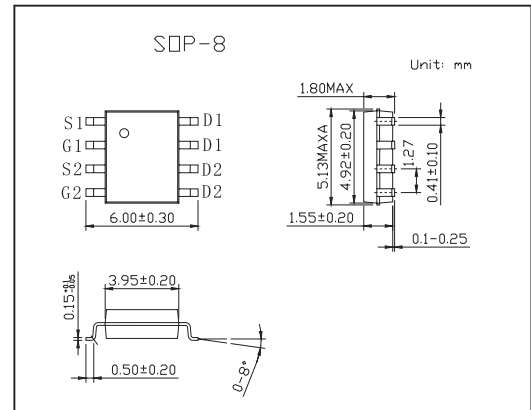
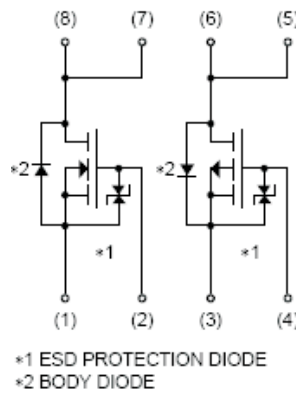


## Switching

## KP8M10

## ■ 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	$V_{DSS}$	30	-30	V
Gate-source voltage	$V_{GSS}$	$\pm 20$	$\pm 20$	V
Drain current Continuous	$I_D$	$\pm 7.0$	$\pm 4.5$	A
Drain current Pulsed *	$I_{DP}$	$\pm 28$	$\pm 18$	A
Source current (Body diode) Continuous	$I_S$	1.6	-1.6	A
Source current (Body diode) Pulsed *	$I_{SP}$	6.4	-18	A
Total power dissipation ( $T_c=25^\circ\text{C}$ )	$P_D$	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		$^\circ\text{C}/\text{W}$

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

## KP8M10

### ■ 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			±10	μA
		V <sub>GS</sub> = ±20V, V <sub>DS</sub> =0V			±10	
Drain-source breakdown voltage	V <sub>(BR)DSS</sub>	I <sub>D</sub> =1mA, V <sub>GS</sub> =0V	30			V
		I <sub>D</sub> =-1mA, V <sub>GS</sub> =0V	-30			
Zero gate voltage drain current	I <sub>DSS</sub>	V <sub>DS</sub> =30V, V <sub>GS</sub> =0V			1	μA
		V <sub>DS</sub> =-30V, V <sub>GS</sub> =0V			-1	
Gate threshold voltage	V <sub>GS(th)</sub>	V <sub>DS</sub> =10V, I <sub>D</sub> =1mA	1.0		2.5	V
		V <sub>DS</sub> =-10V, I <sub>D</sub> =-1mA	-1.0		-2.5	
Static drain-source on-state resistance	R <sub>DS(on)</sub>	I <sub>D</sub> =7.0A, V <sub>GS</sub> =10A		17	24	mΩ
		I <sub>D</sub> =7.0A, V <sub>GS</sub> =4.5V		23	33	
		I <sub>D</sub> =7.0A, V <sub>GS</sub> =4V		25	35	
Static drain-source on-state resistance	R <sub>DS(on)</sub>	I <sub>D</sub> =-4.5A, V <sub>GS</sub> =-10A		40	56	mΩ
		I <sub>D</sub> =-4.5A, V <sub>GS</sub> =-4.5V		57	80	
		I <sub>D</sub> =-4.5A, V <sub>GS</sub> =-4.0V		65	90	
Forward transfer admittance	Y <sub>fs</sub>	I <sub>D</sub> =7.0A, V <sub>DS</sub> =10V	5.0			S
		I <sub>D</sub> =-4.5A, V <sub>DS</sub> =-10V	3.5			
Input capacitance	C <sub>iss</sub>	N-Channel V <sub>DS</sub> =10V, V <sub>GS</sub> =0V, f=1MHz	N-Ch	600		pF
			P-Ch	850		
Output capacitance	C <sub>oss</sub>	P-Channel	N-Ch	200		pF
			P-Ch	190		
Reverse transfer capacitance	C <sub>rss</sub>	V <sub>DS</sub> =-10V, V <sub>GS</sub> =0V, f=1MHz	N-Ch	120		pF
			P-Ch	120		
Turn-on delay time	t <sub>d(on)</sub>	I <sub>D</sub> =3.5A, V <sub>DD</sub> =15V	N-Ch	8		ns
		I <sub>D</sub> =-2.5A, 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> =4.29Ω, R <sub>G</sub> =10Ω	N-Ch	10		ns
			P-Ch	25		
Turn-off delay time	t <sub>d(off)</sub>	P-Channel	N-Ch	37		ns
			P-Ch	60		
Fall time	t <sub>f</sub>	V <sub>GS</sub> =-10V, R <sub>L</sub> =6.0Ω, R <sub>G</sub> =10Ω	N-Ch	11		ns
			P-Ch	25		
Total gate charge	Q <sub>g</sub>	N-Channel V <sub>DD</sub> =15V, V <sub>GS</sub> =5V, I <sub>D</sub> =7.0A	N-Ch	8.4	11.8	nC
			P-Ch	8.5		
Gate-source charge	Q <sub>gs</sub>	P-Channel	N-Ch	1.9		nC
			P-Ch	2.5		
Gate-drain charge	Q <sub>gd</sub>	V <sub>DD</sub> =-15V, V <sub>GS</sub> =-5V, I <sub>D</sub> =-4.5A	N-Ch	3.3		nC
			P-Ch	3.0		
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> =-1.6A, V <sub>GS</sub> =0V	P-Ch		-1.2	