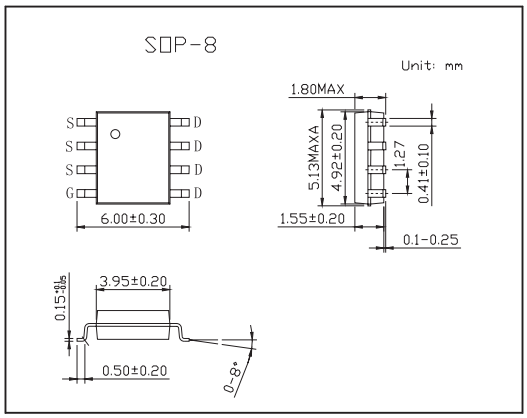
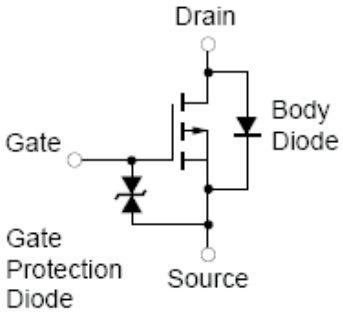
MOS Field Effect Transistor

KPA1716



■ Features

- Low on-state resistance
  $R_{DS(on)1}$ = 12.5 mΩ TYP. (V_{GS} = -10 V, I_D = -4 A)
  $R_{DS(on)2}$ = 17 mΩ TYP. (V_{GS} = -4.5 V, I_D = -4 A)
  $R_{DS(on)3}$ = 19 mΩ TYP. (V_{GS} = -4.01 V, I_D = -4 A)
- Low C_{iss} : C_{iss} = 2100 pF TYP.
- Built-in G-S protection diode
- Small and surface mount package



■ Absolute Maximum Ratings Ta = 25℃

Parameter	Symbol	Rating	Unit
Drain to Source Voltage (V_{GS} = 0)	V_{DSS}	-30	V
Gate to Source Voltage (V_{DS} = 0)	V_{GSS}	±20	V
Drain Current (DC) Ta = 25℃	$I_{D(DC)}$	±8	A
Drain Current (Pulse) *1	$I_{D(pulse)}$	±32	A
Total Power DissipationTa = 25℃ *2	P_T	2.0	W
Channel Temperature	T_{ch}	150	℃
Storage Temperature	T_{stg}	-55 to + 150	℃

*1 PW ≤ 10 μs, Duty cycle ≤ 1 %

*2 Mounted on ceramic substrate of 1200mm^2 X1.0 mm

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■ Electrical Characteristics Ta = 25℃

Parameter	Symbol	Testconditons	Min	Typ	Max	Unit
Drain to Source On-state Resistance	$R_{DS(on)1}$	V_{DS} = -10V, I_D = -4.0 A		12.5	16	mΩ
	$R_{DS(on)2}$	V_{GS} = -4.5V, I_D = -4.0 A		17	23	mΩ
	$R_{DS(on)3}$	V_{GS} = -4.0V, I_D = -4.0 A		19	26	mΩ
Gate Cut-off Voltage	$V_{GS(off)}$	V_{DS} = -10 V, I_D = 1 mA	-1.0	-1.6	-2.5	V
Forward Transfer Admittance	$\|y_{fs}\|$	V_{DS} = 10 V, I_D = -4.0A	7	14		S
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS} = -30 V, V_{GS} = 0			-1	μA
Gate Leakage Current	I_{GSS}	V_{GS} = ±20V, V_{DS} = 0			±10	μA
Input Capacitance	C_{iss}	V_{DS} = -10 V, V_{GS} = 0, f = 1 MHz		2100		pF
Output Capacitance	C_{oss}			700		pF
Reverse Transfer Capacitance	C_{rss}			300		pF
Turn-on Delay Time	$t_{d(on)}$	I_D = -4.0 A, $V_{GS(on)}$ = -10 V, V_{DD} =-15 V,R_G = 10 Ω		30		ns
Rise Time	t_r			150		ns
Turn-off Delay Time	$t_{d(off)}$			120		ns
Fall Time	t_f			76		ns
Total Gate Charge	Q_G	I_D = -8.0A, V_{DD} = -24V, V_{GS} = -10 V		40		nC
Gate to Source Charge	Q_{GS}			6		nC
Gate to Drain Charge	Q_{GD}			10		nC
Body Diode forward Voltage	$V_{F(S-D)}$	I_F = 8.0 A, V_{GS} = 0		0.8		V
Reverse Recovery Time	trr	I_F = 8.0 A, V_{GS} = 0 V		45		ns
Reverse Recovery Charge	Qrr	di/dt = 100 A/μs		33		nC