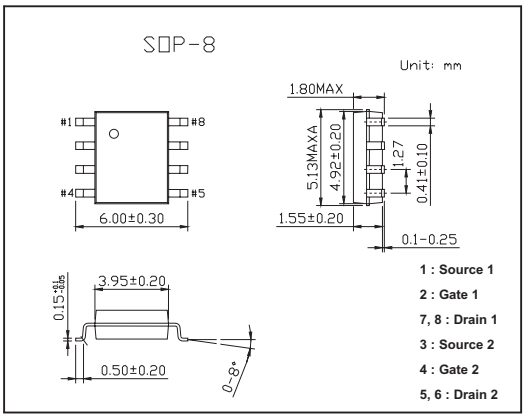
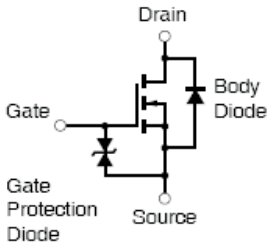
MOS Field Effect Transistor

KPA1758



■ Features

- Dual MOS FET chips in small package
- 2.5 V gate drive type low on-state resistance
  $R_{DS(on)1}$ = 30 mΩ (MAX.) (V_{GS} = 4.5 V, I_D = 3.0 A)
  $R_{DS(on)2}$ = 40 mΩ (MAX.) (V_{GS} = 2.5 V, I_D = 3.0 A)
- Low C_{iss} : C_{iss} = 1100 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}	±12.0	V
Drain Current (DC)	$I_{D(DC)}$	±6.0	A
Drain Current (Pulse) *1	$I_{D(pulse)}$	±24	A
Total Power Dissipation (1 unit) *2	P_T	1.7	W
Total Power Dissipation (2 unit) *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 2000 mm^2 X1.1 mm

KPA1758

■ Electrical Characteristics Ta = 25℃

Parameter	Symbol	Testconditons	Min	Typ	Max	Unit
Drain to Source On-state Resistance	$R_{DS(on)1}$	V_{GS} = 4.5 V, I_D = 3.5 A		20	30	mΩ
	$R_{DS(on)2}$	V_{GS} = 2.5 V, I_D = 3.5 A		25	40	mΩ
Gate to Source Cutoff Voltage	$V_{GS(off)}$	V_{DS} = 10 V, I_D = 1.0 mA	0.5	0.8	1.5	V
Forward Transfer Admittance	$\|y_{fs}\|$	V_{DS} = 10 V, I_D = 3.5 A	5.0	13		S
Drain Leakage Current	I_{DSS}	V_{DS} = 30 V, V_{GS} = 0			10	μA
Gate to Source Leakage Current	I_{GSS}	V_{GS} = ±12.0 V, V_{DS} = 0			±10	μA
Input Capacitance	C_{iss}	V_{DS} = 10 V, V_{GS} = 0, f = 1 MHz		1100		pF
Output Capacitance	C_{oss}			370		pF
Reverse Transfer Capacitance	C_{rss}			170		pF
Turn-on Delay Time	$t_{d(on)}$	I_D = 3.0 A, $V_{GS(on)}$ = 4.0 V, V_{DD} = 15 V, R_G = 10 Ω		50		ns
Rise Time	t_r			190		ns
Turn-off Delay Time	$t_{d(off)}$			550		ns
Fall Time	t_f			490		ns
Total Gate Charge	Q_G	I_D = 6.0 A, V_{DD} = 24 V, V_{GS} = 4.0 V		15.0		nC
Gate to Source Charge	Q_{GS}			2.0		nC
Gate to Drain Charge	Q_{GD}			6.5		nC
Body Diode forward Voltage	$V_{F(S-D)}$	I_F = 6.0 A, V_{GS} = 0		0.8		V