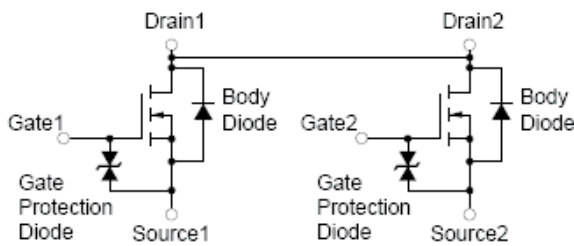
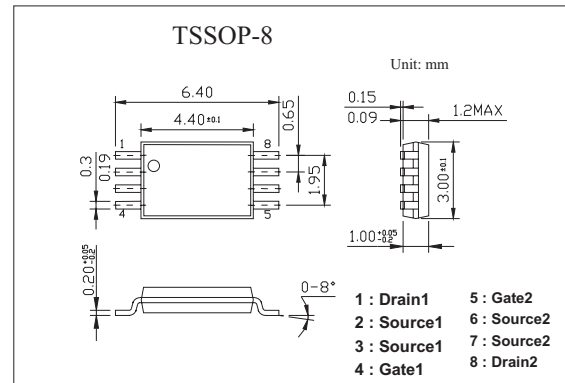


MOS Field Effect Transistor

KPA1873

■ Features

- 2.5 V drive available
- Low on-state resistance
 $R_{DS(on)1} = 23 \text{ m}\Omega$ TYP. ($V_{GS} = 4.5 \text{ V}$, $I_D = 3.0 \text{ A}$)
 $R_{DS(on)2} = 24 \text{ m}\Omega$ TYP. ($V_{GS} = 4.0 \text{ V}$, $I_D = 3.0 \text{ A}$)
 $R_{DS(on)3} = 28 \text{ m}\Omega$ TYP. ($V_{GS} = 3.1 \text{ V}$, $I_D = 3.0 \text{ A}$)
 $R_{DS(on)4} = 29 \text{ m}\Omega$ TYP. ($V_{GS} = 2.5 \text{ V}$, $I_D = 3.0 \text{ A}$)
- Built-in G-S protection diode against ESD

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

Parameter	Symbol	Rating	Unit
Drain to Source Voltage ($V_{GS} = 0$)	V_{DSS}	20	V
Gate to Source Voltage ($V_{DS} = 0$)	V_{GSS}	± 12	V
Drain Current (DC) $T_a = 25^\circ\text{C}$	$I_{D(DC)}$	± 6	A
Drain Current (Pulse) *1	$I_{D(pulse)}$	± 80	A
Total Power Dissipation(2 unit) *2	P_T	2.0	W
Channel Temperature	T_{ch}	150	$^\circ\text{C}$
Storage Temperature	T_{stg}	-55 to + 150	$^\circ\text{C}$

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

*2 Mounted on ceramic substrate of $5000\text{mm}^2 \times 1.1 \text{ mm}$

KPA1873

■ Electrical Characteristics Ta = 25°C

Parameter	Symbol	Testconditons	Min	Typ	Max	Unit
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} = 20 V, V _{GS} = 0			10	μ A
Gate Leakage Current	I _{GSS}	V _{GS} = ±12V, V _{DS} = 0			±10	μ A
Gate Cut-off Voltage	V _{GS(off)}	V _{DS} = 10 V, I _D = 1 mA	0.5	1.0	1.5	V
Forward Transfer Admittance	y _{fs}	V _{DS} = 10 V, I _D = 3.0A	5			S
Drain to Source On-state Resistance	R _{DS(on)1}	V _{DS} = 4.5V, I _D = 3.0 A	13	18	23	m Ω
	R _{DS(on)2}	V _{GS} = 4.0V, I _D = 3.0 A	14	19	24	m Ω
	R _{DS(on)3}	V _{GS} = 3.1V, I _D = 3.0 A	14.5	21.5	28	m Ω
	R _{DS(on)4}	V _{GS} = 2.5 V, I _D = 3.0 A	15	24.5	29	m Ω
Input Capacitance	C _{iss}	V _{DS} = 10 V, V _{GS} = 0, f = 1 MHz		705		pF
Output Capacitance	C _{oss}			205		pF
Reverse Transfer Capacitance	C _{rss}			145		pF
Turn-on Delay Time	t _{d(on)}			60		ns
Rise Time	t _r	I _D = 3.0 A, V _{GS(on)} = 4.0 V, V _{DD} = 10 V, R _G = 10 Ω		310		ns
Turn-off Delay Time	t _{d(off)}			380		ns
Fall Time	t _f			420		ns
Total Gate Charge	Q _G	I _D = 6.0A, V _{DD} = 16V, V _{GS} = 4.0 V		9.0		nC
Gate to Source Charge	Q _{GS}			2.0		nC
Gate to Drain Charge	Q _{GD}			4.0		nC
Body Diode forward Voltage	V _{F(S-D)}	I _F = 6.0 A, V _{GS} = 0		0.84		V
Reverse Recovery Time	t _{rr}	I _F = 6.0 A, V _{GS} = 0 V		480		ns
Reverse Recovery Charge	Q _{rr}	di/dt = 50 A/μ s		1200		nC