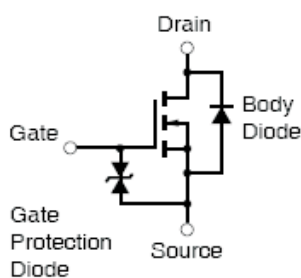
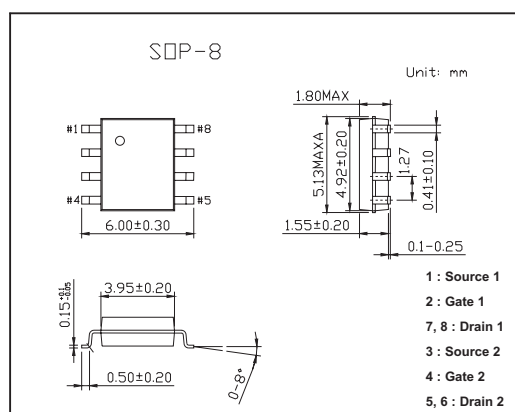


MOS Field Effect Transistor

KPA1764

■ Features

- Dual chip type
- Low on-state resistance
 $R_{DS(on)1} = 27 \text{ m}\Omega$ TYP. ($V_{GS} = 10 \text{ V}$, $I_D = 3.5 \text{ A}$)
 $R_{DS(on)2} = 32 \text{ m}\Omega$ TYP. ($V_{GS} = 4.5 \text{ V}$, $I_D = 3.5 \text{ A}$)
 $R_{DS(on)3} = 34 \text{ m}\Omega$ TYP. ($V_{GS} = 4.0 \text{ V}$, $I_D = 3.5 \text{ A}$)
- Low input capacitance
 $C_{iss} = 1300 \text{ pF}$ TYP.
- Built-in G-S protection diode
- Small and surface mount package

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

Parameter	Symbol	Rating	Unit
Drain to Source Voltage ($V_{GS} = 0$)	V_{DSS}	60	V
Gate to Source Voltage ($V_{DS} = 0$)	V_{GSS}	± 20	V
Drain Current (DC)	$I_{D(DC)}$	± 7	A
Drain Current (Pulse) *1	$I_D(\text{pulse})$	± 28	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	$^\circ\text{C}$
Storage Temperature	T_{stg}	-55 to + 150	$^\circ\text{C}$
Single Avalanche Current *3	I_{AS}	7	A
Single Avalanche Energy *3	E_{AS}	98	mJ

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

*2 Mounted on ceramic substrate of $2000 \text{ mm}^2 \times 1.1 \text{ mm}$

*3 Starting $T_{ch} = 25^\circ\text{C}$, $V_{DD} = 30 \text{ V}$, $R_G = 25 \Omega$, $V_{GS} = 20 \rightarrow 0 \text{ V}$

KPA1764

■ Electrical Characteristics Ta = 25°C

Parameter	Symbol	Testconditions	Min	Typ	Max	Unit
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS} = 60\text{ V}, V_{GS} = 0$			10	$\mu\text{ A}$
Gate Leakage Current	I_{GSS}	$V_{GS} = \pm 20\text{ V}, V_{DS} = 0$			± 10	$\mu\text{ A}$
Gate Cut-off Voltage	$V_{GS(off)}$	$V_{DS} = 10\text{ V}, I_D = 1\text{ mA}$	1.5	2.0	2.5	V
Forward Transfer Admittance	$ y_{fs} $	$V_{DS} = 10\text{ V}, I_D = 3.5\text{ A}$	5.0	9		S
Drain to Source On-state Resistance	$R_{DS(on)1}$	$V_{DS} = 10\text{ V}, I_D = 3.5\text{ A}$		27	35	$\text{m}\Omega$
	$R_{DS(on)2}$	$V_{GS} = 4.5\text{ V}, I_D = 3.5\text{ A}$		32	42	$\text{m}\Omega$
	$R_{DS(on)3}$	$V_{GS} = 4.0\text{ V}, I_D = 3.5\text{ A}$		34	46	$\text{m}\Omega$
Input Capacitance	C_{iss}	$V_{DS} = 10\text{ V}, V_{GS} = 0, f = 1\text{ MHz}$		1300		pF
Output Capacitance	C_{oss}			230		pF
Reverse Transfer Capacitance	C_{rss}			110		pF
Turn-on Delay Time	$t_{d(on)}$	$I_D = 3.5\text{ A}, V_{GS} = 10\text{ V}, V_{DD} = 30\text{ V}, R_G = 10\ \Omega$		15		ns
Rise Time	t_r			69		ns
Turn-off Delay Time	$t_{d(off)}$			65		ns
Fall Time	t_f			27		ns
Total Gate Charge	Q_G	$I_D = 7.0\text{ A}, V_{DD} = 48\text{ V}, V_{GS} = 10\text{ V}$		29		nC
Gate to Source Charge	Q_{GS}			3.6		nC
Gate to Drain Charge	Q_{GD}			7.4		nC
Body Diode forward Voltage	$V_{F(S-D)}$	$I_F = 7.0\text{ A}, V_{GS} = 0$		0.84		V
Reverse Recovery Time	t_{rr}	$I_F = 7.0\text{ A}, V_{GS} = 0\text{ V}$ $di/dt = 100\text{ A}/\mu\text{ s}$		40		ns
Reverse Recovery Charge	Q_{rr}			66		nC