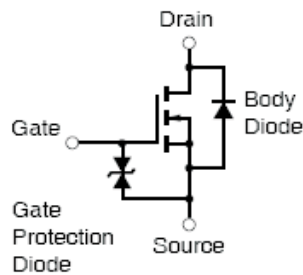
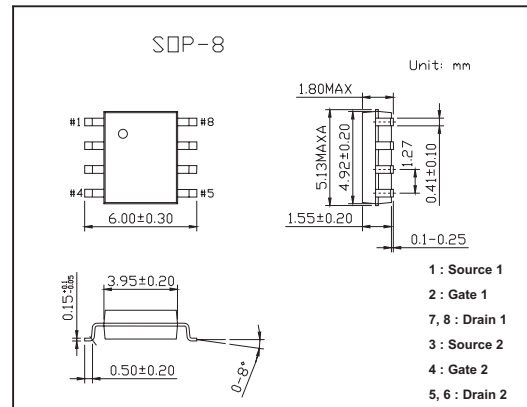


MOS Field Effect Transistor

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	Testconditons	Min	Typ	Max	Unit
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} = 60 V, V _{GS} = 0			10	μ A
Gate Leakage Current	I _{GSS}	V _{GS} = ±20 V, V _{DS} = 0			±10	μ A
Gate Cut-off Voltage	V _{GS(off)}	V _{DS} = 10 V, I _D = 1 mA	1.5	2.0	2.5	V
Forward Transfer Admittance	y _{fs}	V _{DS} = 10 V, I _D = 3.5 A	5.0	9		S
Drain to Source On-state Resistance	R _{DS(on)1}	V _{DS} = 10 V, I _D = 3.5 A		27	35	m Ω
	R _{DS(on)2}	V _{GS} = 4.5V, I _D = 3.5 A		32	42	m Ω
	R _{DS(on)3}	V _{GS} = 4.0 V, I _D = 3.5 A		34	46	m Ω
Input Capacitance	C _{iss}	V _{DS} = 10 V, V _{GS} = 0, f = 1 MHz		1300		pF
Output Capacitance	C _{oss}			230		pF
Reverse Transfer Capacitance	C _{rss}			110		pF
Turn-on Delay Time	t _{d(on)}			15		ns
Rise Time	t _r	I _D = 3.5 A, V _{GS} = 10 V, V _{DD} = 30 V, R _G = 10 Ω		69		ns
Turn-off Delay Time	t _{d(off)}			65		ns
Fall Time	t _f			27		ns
Total Gate Charge	Q _G	I _D = 7.0A, V _{DD} = 48V, V _{GS} = 10 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 A, V _{GS} = 0		0.84		V
Reverse Recovery Time	t _{rr}	I _F = 7.0 A, V _{GS} = 0 V		40		ns
Reverse Recovery Charge	Q _{rr}		di/dt = 100 A/ μ s		66	