TY Semicondutor®

Product specification

KPA1764

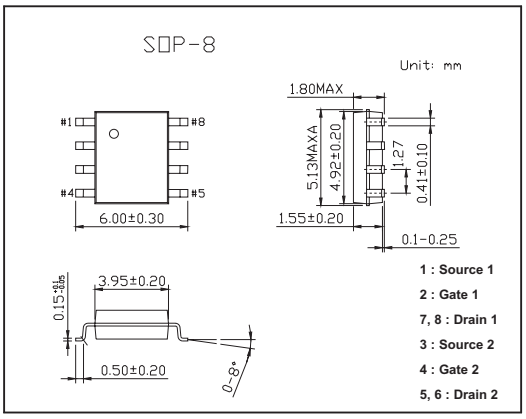
■ Features

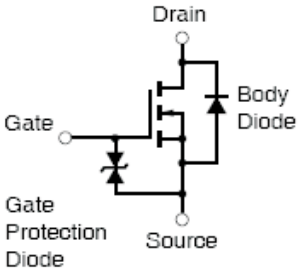
- Dual chip type
- Low on-state resistance

  $R_{DS(on)1}$ = 27 mΩ TYP. (V_{GS} = 10 V, I_D = 3.5 A)

  $R_{DS(on)2}$ = 32 mΩ TYP. (V_{GS} = 4.5 V, I_D = 3.5 A)

  $R_{DS(on)3}$ = 34 mΩ TYP. (V_{GS} = 4.0 V, I_D = 3.5 A)
- Low input capacitance
- C_{iss} = 1300 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}	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	$I_{D(pulse)}$	±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	℃
Storage Temperature	T_{stg}	-55 to + 150	℃
Single Avalanche Current *3	I_{AS}	7	A
Single Avalanche Energy *3	E_{AS}	98	mJ

*1 PW ≤ 10 μs, Duty cycle ≤ 1 %

*2 Mounted on ceramic substrate of 2000 mm^2 X1.1 mm

*3 Starting T_{ch} = 25℃, V_{DD} = 30 V, R_G = 25 Ω, V_{GS} = 20 → 0 V

■ Electrical Characteristics Ta = 25℃

Parameter	Symbol	Testconditons	Min	Typ	Max	Unit
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS} = 60 V, V_{GS} = 0			10	μA
Gate Leakage Current	I_{GSS}	V_{GS} = ±20 V, V_{DS} = 0			±10	μA
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	$\lvert y_{fs} \rvert$	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	mΩ
	$R_{DS(on)2}$	V_{GS} = 4.5V, I_D = 3.5 A		32	42	mΩ
	$R_{DS(on)3}$	V_{GS} = 4.0 V, I_D = 3.5 A		34	46	mΩ
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	$t_{d(on)}$	I_D = 3.5 A, V_{GS} = 10 V, V_{DD} =30 V,R_G = 10 Ω		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 = 7.0A, 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	trr	I_F = 7.0 A, V_{GS} = 0 V		40		ns
Reverse Recovery Charge	Qrr	di/dt = 100 A/μs		66		nC