Ultrahigh-Speed Switching Applications

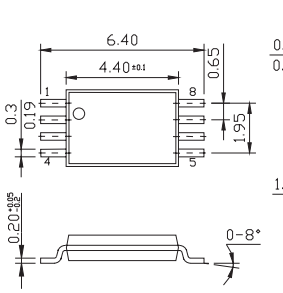
KTS2004

■ Features

- Low ON resistance.
- 4V drive.
- Mount height 1.1mm.

TSSOP-8

Unit: mm



1,5,8: Drain

2,3,6,7: Source

4: Gate

■ Absolute Maximum Ratings Ta = 25℃

Parameter	Symbol	Rating	Unit
Drain-to-Source Voltage	V_{DSS}	30	V
Gate-to-Source Voltage	V_{GSS}	±20	V
Drain Current(DC)	I_D	4	A
Drain Current(pulse) *1	I_{DP}	25	A
Allowable Power Dissipation *2	P_D	1.3	W
Channel Temperature	T_{ch}	150	℃
Storage Temperature	T_{stg}	-55 to +150	℃

*1 PW≤10μs, duty cycle≤1%

*2 Mounted on a ceramic board (1000mm^{2}X0.8mm)

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■ Electrical Characteristics Ta = 25℃

Parameter	Symbol	Testconditons	Min	Typ	Max	Unit
Drain-to Source Breakdown Voltage	$V_{(BR)DSS}$	I_D=1mA, V_{GS}=0	30			V
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS} = 30 V, V_{GS} = 0 V			10	μA
Gate-to-Source Leakage Current	I_{GSS}	V_{GS} = ± 16 V, V_{DS} = 0 V			±10	μA
Cutoff Voltage	$V_{GS(off)}$	V_{DS} = 10 V, I_D = 1 mA	1.0		2.4	V
Forward Transfer Admittance	$\|Y_{fs}\|$	V_{DS} = 10 V, I_D = 4 A	5	8		S
Drain to Source On-state Resistance	$R_{DS(on)1}$	V_{GS} = 10 V, I_D = 4A		36	46	mΩ
	$R_{DS(on)2}$	V_{GS} = 4 V, I_D = 4 A		58	78	mΩ
Input Capacitance	C_{iss}	V_{DS} = 10 V,f = 1 MHz		460		pF
Output Capacitance	C_{oss}			250		pF
Reverse Transfer Capacitance	C_{rss}			120		pF
Turn-on Delay Time	$t_{d(on)}$	See Specified Test Circuit		10		ns
Rise Time	t_r			90		ns
Turn-off Delay Time	$t_{d(off)}$			70		ns
Fall Time	t_f			75		ns
Total Gate Charge	Q_g	V_{DS}= 10 V		15		nC
Gate-to-Source Charge	Q_{gs}	V_{GS} = 10 V		3		nC
Gate-Drain"Miller" Charge	Q_{gd}	I_D = 4 A		4		nC
Diode Forward Voltage	V_{SD}	I_S= 4 A, V_{GS} = 0 V		0.85	1.2	V

■ Switching Time Test Circuit