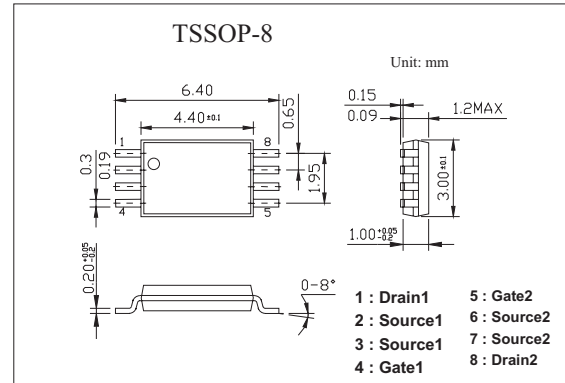
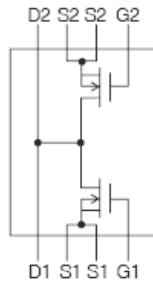


## Ultrahigh-Speed Switching Applications KTD2005

### ■ Features

- Low ON resistance.
- 2.5V drive.
- Mounting height 1.1mm.
- Composite type, facilitating high-density mounting.



### ■ Absolute Maximum Ratings Ta = 25°C

Parameter	Symbol	Rating	Unit
Drain-to-Source Voltage	V <sub>DSS</sub>	20	V
Gate-to-Source Voltage	V <sub>GSS</sub>	±10	V
Drain Current(DC)	I <sub>D</sub>	1	A
Drain Current(pulse) *1	I <sub>DP</sub>	4	A
Allowable Power Dissipation *2	P <sub>D</sub>	0.8	W
Total Dissipation *2	P <sub>T</sub>	1.0	W
Channel Temperature	T <sub>ch</sub>	150	°C
Storage Temperature	T <sub>stg</sub>	-55 to +150	°C

\*1 PW ≤ 10 μs, duty cycle ≤ 1%

\*2 Mounted on a ceramic board (1000mm<sup>2</sup>×0.8mm)

## KTD2005

■ Electrical Characteristics  $T_a = 25^\circ\text{C}$ 

Parameter	Symbol	Testconditions	Min	Typ	Max	Unit
Drain-to Source Breakdown Voltage	$V_{(BR)DSS}$	$I_D=1\text{mA}, V_{GS}=0$	20			V
Zero Gate Voltage Drain Current	$I_{DSS}$	$V_{DS} = 20\text{V}, V_{GS} = 0\text{V}$			10	$\mu\text{A}$
Gate-to-Source Leakage Current	$I_{GSS}$	$V_{GS} = \pm 8\text{V}, V_{DS} = 0\text{V}$			$\pm 10$	$\mu\text{A}$
Cutoff Voltage	$V_{GS(off)}$	$V_{DS} = 10\text{V}, I_D = 1\text{mA}$	0.4		1.3	V
Forward Transfer Admittance	$ Y_{fs} $	$V_{DS} = 10\text{V}, I_D = 1\text{A}$	1.8	2.6		S
Drain to Source On-state Resistance	$R_{DS(on)1}$	$V_{GS} = 10\text{V}, I_D = 1\text{A}$		200	260	$\text{m}\Omega$
	$R_{DS(on)2}$	$V_{GS} = 4\text{V}, I_D = 1\text{A}$		260	360	
Input Capacitance	$C_{iss}$	$V_{DS} = 10\text{V}, f = 1\text{MHz}$		90		pF
Output Capacitance	$C_{oss}$			60		pF
Reverse Transfer Capacitance	$C_{rss}$			28		pF
Turn-on Delay Time	$t_{d(on)}$		See Specified Test Circuit		10	
Rise Time	$t_r$			22		ns
Turn-off Delay Time	$t_{d(off)}$			20		ns
Fall Time	$t_f$			19		ns
Total Gate Charge	$Q_g$	$V_{DS}=10\text{V}, V_{GS}=10\text{V}, I_D=1\text{A}$			6	
Gate-to-Source Charge	$Q_{gs}$			1		nC
Gate-to-Drain "Miller" Charge	$Q_{gd}$			2		nC
Diode Forward Voltage	$V_{SD}$	$I_S = 1\text{A}, V_{GS} = 0\text{V}$		1.0	1.2	V

## ■ Switching Time Test Circuit

