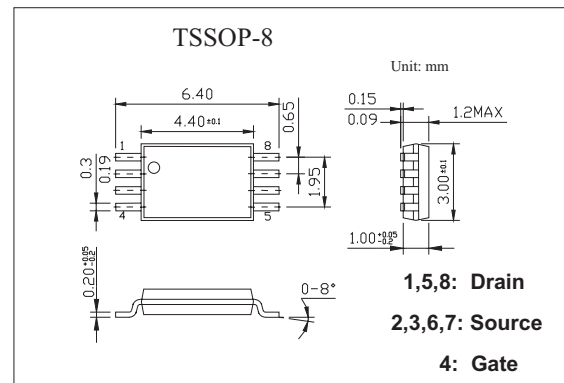


## Load Switching Applications

## KTS1012

## ■ Features

- Low ON resistance.
- 4.0V drive.
- Mount height 1.1mm.

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

Parameter	Symbol	Rating	Unit
Drain-to-Source Voltage	$V_{DS}$	-30	V
Gate-to-Source Voltage	$V_{GS}$	$\pm 20$	V
Drain Current(DC)	$I_D$	-6	A
Drain Current(pulse) *1	$I_{DP}$	-32	A
Allowable Power Dissipation *2	$P_D$	1.3	W
Channel Temperature	$T_{ch}$	150	$^\circ\text{C}$
Storage Temperature	$T_{stg}$	-55 to +150	$^\circ\text{C}$

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

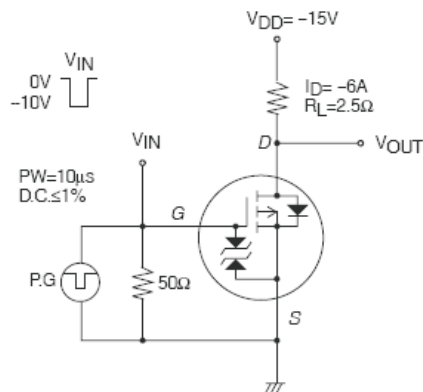
\*2 Mounted on a ceramic board (1000mm<sup>2</sup>X0.8mm)

## KTS1012

## ■ Electrical Characteristics Ta = 25°C

Parameter	Symbol	Testconditions	Min	Typ	Max	Unit
Drain-to Source Breakdown Voltage	$V_{(BR)DSS}$	$I_D = -1\text{mA}$ , $V_{GS} = 0$	-30			V
Zero Gate Voltage Drain Current	$I_{DSS}$	$V_{DS} = -30\text{V}$ , $V_{GS} = 0\text{V}$			-1	$\mu\text{A}$
Gate-to-Source Leakage Current	$I_{GSS}$	$V_{GS} = \pm 16\text{V}$ , $V_{DS} = 0\text{V}$			$\pm 10$	$\mu\text{A}$
Cutoff Voltage	$V_{GS(off)}$	$V_{DS} = -10\text{V}$ , $I_D = -1\text{mA}$			-2.4	V
Forward Transfer Admittance	$ Y_{fs} $	$V_{DS} = -10\text{V}$ , $I_D = -6\text{A}$	8.7	12		S
Drain to Source On-state Resistance	$R_{DS(on)1}$	$V_{GS} = -10\text{V}$ , $I_D = -6\text{A}$		21	28	$\text{m}\Omega$
	$R_{DS(on)2}$	$V_{GS} = -4.5\text{V}$ , $I_D = -4\text{A}$		33	47	$\text{m}\Omega$
	$R_{DS(on)3}$	$V_{GS} = -4\text{V}$ , $I_D = -4\text{A}$		37	52	$\text{m}\Omega$
Input Capacitance	$C_{iss}$	$V_{DS} = -10\text{V}$ , $f = 1\text{MHz}$		1700		$\text{pF}$
Output Capacitance	$C_{oss}$			380		$\text{pF}$
Reverse Transfer Capacitance	$C_{rss}$			240		$\text{pF}$
Turn-on Delay Time	$t_{d(on)}$	See Specified Test Circuit		15		ns
Rise Time	$t_r$			130		ns
Turn-off Delay Time	$t_{d(off)}$			110		ns
Fall Time	$t_f$			85		ns
Total Gate Charge	$Q_g$	$V_{DS} = -10\text{V}$		32		nC
Gate-to-Source "Miller" Charge	$Q_{gs}$	$V_{GS} = -10\text{V}$		4.5		nC
Gate-Drain Charge	$Q_{gd}$	$I_D = -6\text{A}$		5		nC
Diode Forward Voltage	$V_{SD}$	$I_s = -6\text{A}$ , $V_{GS} = 0\text{V}$		-0.79	-1.5	V

## ■ Switching Time Test Circuit



## ■ Marking

Marking	S1012
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