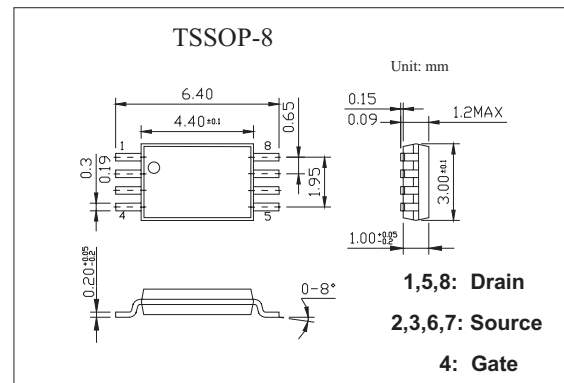


DC/DC Converter Applications

KTS2003

■ Features

- Low ON resistance.
- 2.5V drive.
- Mount height 1.1mm.

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

Parameter	Symbol	Rating	Unit
Drain-to-Source Voltage	V_{DS}	20	V
Gate-to-Source Voltage	V_{GS}	± 10	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	$^\circ\text{C}$
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 ($1000\text{mm}^2 \times 0.8\text{mm}$)

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■ Electrical Characteristics Ta = 25°C

Parameter	Symbol	Testconditions	Min	Typ	Max	Unit
Drain-to Source Breakdown Voltage	$V_{(BR)DSS}$	$I_D = 1\text{mA}$, $V_{GS} = 0$	20			V
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS} = 20\text{V}$, $V_{GS} = 0\text{V}$			10	μA
Gate-to-Source Leakage Current	I_{GSS}	$V_{GS} = \pm 8\text{V}$, $V_{DS} = 0\text{V}$			± 10	μA
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} $	$V_{DS} = 10\text{V}$, $I_D = 4\text{A}$	7	10		S
Drain to Source On-state Resistance	$R_{DS(on)1}$	$V_{GS} = 4\text{V}$, $I_D = 4\text{A}$		38	50	$\text{m}\Omega$
	$R_{DS(on)2}$	$V_{GS} = 2.5\text{V}$, $I_D = 2\text{A}$		50	70	$\text{m}\Omega$
Input Capacitance	C_{iss}	$V_{DS} = 10\text{V}$		500		pF
Output Capacitance	C_{oss}	$V_{GS} = 0\text{V}$		280		pF
Reverse Transfer Capacitance	C_{rss}	$f = 1\text{MHz}$		150		pF
Turn-on Delay Time	$t_{d(on)}$	See Specified Test Circuit		20		ns
Rise Time	t_r			200		ns
Turn-off Delay Time	$t_{d(off)}$			80		ns
Fall Time	t_f			150		ns
Total Gate Charge	Q_g	$V_{DS} = 10\text{V}$		22		nC
Gate-to-Source "Miller" Charge	Q_{gs}	$V_{GS} = 10\text{V}$		3		nC
Gate-Drain Charge	Q_{gd}	$I_D = 4\text{A}$		3		nC
Diode Forward Voltage	V_{SD}	$I_F = 4\text{A}$, $V_{GS} = 0\text{V}$		0.82	1.2	V

■ Switching Time Test Circuit

