



UTT25N08

Preliminary

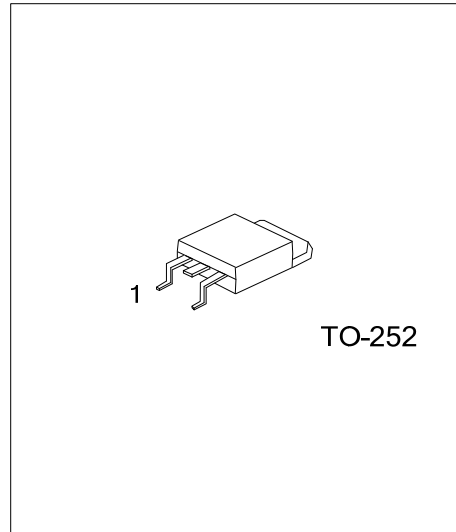
Power MOSFET

**25A, 80V N-CHANNEL
POWER MOSFET**

■ DESCRIPTION

The UTC **UTT25N08** is an N-channel enhancement mode power MOSFET using UTC's advanced technology to provide the customers with a minimum on-state resistance and superior switching performance. It also can withstand high energy pulse in the avalanche and commutation mode.

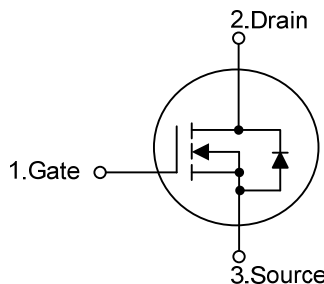
The UTC **UTT25N08** is universally applied in low voltage, such as automotive, high efficiency switching for DC/DC converters, and DC motor control.



■ FEATURES

- * $R_{DS(ON)} < 0.12\Omega @ V_{GS} = 10V$
- * Typically 32pF low C_{RSS}
- * High switching speed
- * Typically 19nC low gate charge

■ SYMBOL



■ ORDERING INFORMATION

Ordering Number		Package	Pin Assignment			Packing
Lead Free	Halogen Free		1	2	3	
UTT25N08L-TN3-R	UTT25N08G-TN3-R	TO-252	G	D	S	Tape Reel
UTT25N08L-TN3-T	UTT25N08G-TN3-T	TO-252	G	D	S	Tube

Note: Pin Assignment: G: Gate D: Drain S: Source

<p>UTT25N08L-TN3-T</p> <p>(1)Packing Type</p> <p>(2)Package Type</p> <p>(3)Lead Free</p>	<p>(1) T: Tube, R: Tape Reel</p> <p>(2) TN3: TO-252</p> <p>(3) G: Halogen Free, L: Lead Free</p>
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■ ABSOLUTE MAXIMUM RATINGS ($T_C = 25^\circ\text{C}$, unless otherwise specified)

PARAMETER	SYMBOL	RATINGS	UNIT
Drain-Source Voltage	V_{DSS}	80	V
Gate-Source Voltage	V_{GSS}	± 25	V
Drain Current	Continuous	I_D	25
	Pulsed	I_{DM}	100
Power Dissipation	P_D	50	W
Junction Temperature	T_J	+150	$^\circ\text{C}$
Storage Temperature	T_{STG}	-40 ~ +150	$^\circ\text{C}$

Note: Absolute maximum ratings are those values beyond which the device could be permanently damaged. Absolute maximum ratings are stress ratings only and functional device operation is not implied.

■ THERMAL DATA

PARAMETER	SYMBOL	RATINGS	UNIT
Junction to Ambient	θ_{JA}	100	$^\circ\text{C/W}$
Junction to Case	θ_{JC}	2.5	$^\circ\text{C/W}$

■ ELECTRICAL CHARACTERISTICS ($T_J = 25^\circ\text{C}$, unless otherwise specified)

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
OFF CHARACTERISTICS						
Drain-Source Breakdown Voltage	BV_{DSS}	$I_D=250\mu\text{A}, V_{GS}=0\text{V}$	80			V
Drain-Source Leakage Current	I_{DSS}	$V_{DS}=80\text{V}, V_{GS}=0\text{V}$			1	μA
Gate- Source Leakage Current		I_{GSS}			+100	nA
					-100	nA
		$V_{GS}=-25\text{V}, V_{DS}=0\text{V}$				
ON CHARACTERISTICS						
Gate Threshold Voltage	$V_{GS(TH)}$	$V_{DS}=V_{GS}, I_D=250\mu\text{A}$	2.0		4.0	V
Static Drain-Source On-State Resistance	$R_{DS(ON)}$	$V_{GS}=10\text{V}, I_D=25\text{A}$			120	m Ω
DYNAMIC PARAMETERS						
Input Capacitance	C_{ISS}	$V_{GS}=0\text{V}, V_{DS}=25\text{V}, f=1.0\text{MHz}$		600	780	pF
Output Capacitance	C_{OSS}			165	215	pF
Reverse Transfer Capacitance	C_{RSS}			32	40	pF
SWITCHING PARAMETERS						
Total Gate Charge	Q_G	$V_{GS}=10\text{V}, V_{DS}=80\text{V}, I_D=25\text{A}$ (Note 1, 2)		19	25	nC
Gate to Source Charge	Q_{GS}			3.9		nC
Gate to Drain Charge	Q_{GD}			9.0		nC
Turn-ON Delay Time	$t_{D(ON)}$	$V_{DD}=50\text{V}, I_D=25\text{A}, R_L=50\Omega,$ $V_{GS}=10\text{V}, R_G=25\Omega$ (Note 1, 2)		7.5	25	ns
Rise Time	t_R			150	310	ns
Turn-OFF Delay Time	$t_{D(OFF)}$			20	50	ns
Fall-Time	t_F			65	140	ns
SOURCE- DRAIN DIODE RATINGS AND CHARACTERISTICS						
Maximum Body-Diode Continuous Current	I_S				25	A
Maximum Body-Diode Pulsed Current	I_{SM}				100	A
Drain-Source Diode Forward Voltage	V_{SD}	$I_S=25\text{A}, V_{GS}=0\text{V}$			1.5	V

Notes: 1. Pulse Test: Pulse width $\leq 300\mu\text{s}$, Duty cycle $\leq 2\%$
2. Essentially independent of operating temperature

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