

**UTT25N08**

Preliminary

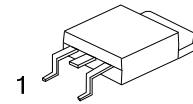
Power MOSFET

**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.

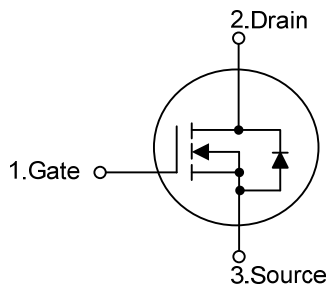


TO-252

■ 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

UTT25N08L-TN3-T (1)Packing Type (2)Package Type (3)Lead Free		(1) T: Tube, R: Tape Reel (2) TN3: TO-252 (3) G: Halogen Free, L: Lead Free
---	--	---

■ 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	A
	Pulsed	I_{DM}	100	A
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}	$I_D=250\mu A, V_{GS}=0V$	80			V
Drain-Source Leakage Current		I_{DSS}	$V_{DS}=80V, V_{GS}=0V$			1	μA
Gate- Source Leakage Current	Forward	I_{GSS}	$V_{GS}=+25V, V_{DS}=0V$			+100	nA
	Reverse		$V_{GS}=-25V, V_{DS}=0V$			-100	nA
ON CHARACTERISTICS							
Gate Threshold Voltage		$V_{GS(TH)}$	$V_{DS}=V_{GS}, I_D=250\mu A$	2.0		4.0	V
Static Drain-Source On-State Resistance		$R_{DS(ON)}$	$V_{GS}=10V, I_D=25A$			120	m Ω
DYNAMIC PARAMETERS							
Input Capacitance		C_{ISS}	$V_{GS}=0V, V_{DS}=25V, f=1.0MHz$		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	$V_{GS}=10V, V_{DS}=80V, I_D=25A$ (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		$t_{D(ON)}$	$V_{DD}=50V, I_D=25A, R_L=50\Omega,$ $V_{GS}=10V, R_G=25\Omega$ (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}	$I_S=25A, V_{GS}=0V$			1.5	V

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

2. Essentially independent of operating temperature

UTC assumes no responsibility for equipment failures that result from using products at values that exceed, even momentarily, rated values (such as maximum ratings, operating condition ranges, or other parameters) listed in products specifications of any and all UTC products described or contained herein. UTC products are not designed for use in life support appliances, devices or systems where malfunction of these products can be reasonably expected to result in personal injury. Reproduction in whole or in part is prohibited without the prior written consent of the copyright owner. The information presented in this document does not form part of any quotation or contract, is believed to be accurate and reliable and may be changed without notice.