



UTT25N08

Preliminary

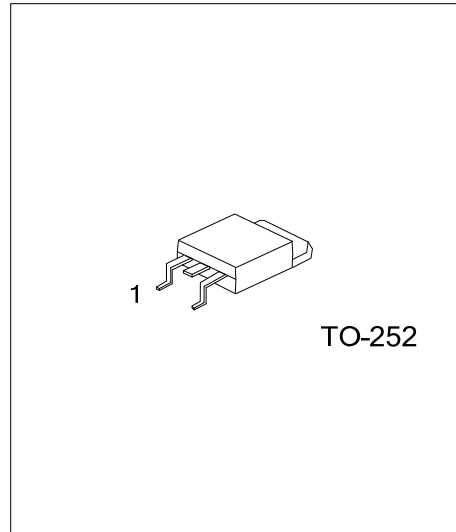
Power MOSFET

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.

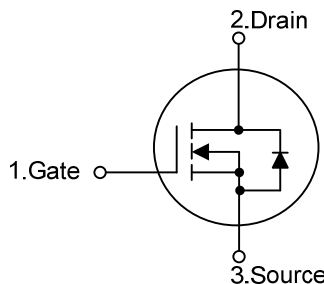
The UTC **UTT25N08** is universally applied in low voltage, such as automotive, high efficiency switching for DC/DC converters, and DC motor control.



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

UTT25N08L-TN3-T <ul style="list-style-type: none"> (1) Packing Type (2) Package Type (3) Lead Free 	<ul style="list-style-type: none"> (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
	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}							
							Forward	$V_{GS}=+25\text{V}, V_{DS}=0\text{V}$	+100
						Reverse	$V_{GS}=-25\text{V}, V_{DS}=0\text{V}$	-100	nA
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

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.