



UTT40N08

Preliminary

Power MOSFET

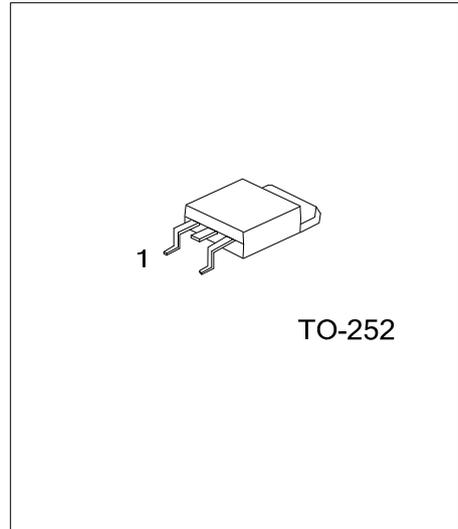
**40A, 80V N-CHANNEL
POWER MOSFET**

■ DESCRIPTION

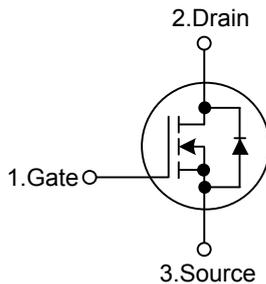
The **UTT40N08** power MOSFET provide the designer with the best combination of fast switching, ruggedized device design, low on-resistance and cost-effectiveness

■ FEATURES

- * $R_{DS(ON)} < 45m\Omega @ V_{GS} = 10 V$
- * Low capacitance
- * Optimized gate charge
- * Fast switching capability
- * Avalanche energy specified



■ SYMBOL



■ ORDERING INFORMATION

Ordering Number		Package	Pin Assignment			Packing
Lead Free	Halogen Free		1	2	3	
UTT40N08L-TN3-R	UTT40N08G-TN3-R	TO-252	G	D	S	Tape Reel

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

<p>UTT40N08L-TN3-R</p> <ul style="list-style-type: none"> (1)Packing Type (2)Package Type (3)Lead Free 	<ul style="list-style-type: none"> (1) R: Tape Reel (2) TN3: TO-252 (3) L: Lead Free, G: Halogen Free
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■ MARKING INFORMATION

PACKAGE	MARKING
TO-252	<p>UTC UTT40N08</p> <p>Lot Code ← [] → Data Code</p> <p>1</p> <p>L: Lead Free G: Halogen Free</p>

■ ABSOLUTE MAXIMUM RATINGS ($T_J=25^{\circ}\text{C}$, unless otherwise specified)

PARAMETER		SYMBOL	RATINGS	UNIT
Drain-Source Voltage		V_{DSS}	80	V
Gate-Source Voltage		V_{GSS}	± 20	V
Drain Current	Continuous	I_D	40	A
	Pulsed (Note 1)	I_{DM}	160	A
Power Dissipation	$T_C=25^{\circ}\text{C}$	P_D	65	W
	$T_C=125^{\circ}\text{C}$		1.92	
Junction Temperature		T_J	+150	$^{\circ}\text{C}$
Storage Temperature		T_{STG}	-55~+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}	62	$^{\circ}\text{C}/\text{W}$
Junction to Case	θ_{JC}	1.92	$^{\circ}\text{C}/\text{W}$

■ ELECTRICAL CHARACTERISTICS ($T_A=25^{\circ}\text{C}$, 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}	$V_{DS}=80\text{V}$, $V_{GS}=0\text{V}$, $T_J=25^{\circ}\text{C}$			1	μA	
Gate- Source Leakage Current	I_{GSS}	Forward			+100	nA	
		Reverse			-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	$R_{DS(ON)}$	$V_{GS}=10\text{V}$, $I_D=20\text{A}$		35	45	m Ω	
DYNAMIC PARAMETERS							
Input Capacitance	C_{ISS}	$V_{DS}=25\text{V}$, $V_{GS}=0\text{V}$, $f=1.0\text{MHz}$		2800		pF	
Output Capacitance	C_{OSS}				320		pF
Reverse Transfer Capacitance	C_{RSS}				140		pF
SWITCHING PARAMETERS							
Total Gate Charge	Q_G	$V_{DS}=25\text{V}$, $V_{GS}=10\text{V}$, $I_D=40\text{A}$		200		nC	
Gate to Source Charge	Q_{GS}				19		nC
Gate to Drain Charge	Q_{GD}				14		nC
Turn-ON Delay Time	$t_{D(ON)}$	$V_{DS}=30\text{V}$, $I_D=1\text{A}$, $V_{GS}=10\text{V}$, $R_G=1.7\Omega$		66	78	ns	
Rise Time	t_R				52	70	ns
Turn-OFF Delay Time	$t_{D(OFF)}$				350	380	ns
Fall-Time	t_F				90	110	ns
SOURCE- DRAIN DIODE RATINGS AND CHARACTERISTICS							
Maximum Body-Diode Continuous Current	I_S	$V_D=V_G=0\text{V}$, $V_S=1.3\text{V}$			40	A	
Maximum Body-Diode Pulsed Current	I_{SM}				160	A	
Drain-Source Diode Forward Voltage	V_{SD}	$T_J=25^{\circ}\text{C}$, $I_S=40\text{A}$, $V_{GS}=0\text{V}$			1.3	V	

Notes: 1. Pulse width limited by $T_{J(MAX)}$

2. Pulse width $\leq 300\mu\text{s}$, duty cycle $\leq 2\%$.

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