

**UTT40N08**

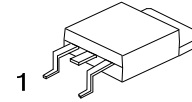
Preliminary

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

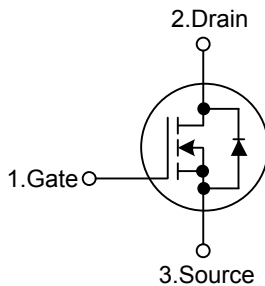
The **UTT40N08** power MOSFET provide the designer with the best combination of fast switching, ruggedized device design, low on-resistance and cost-effectiveness

FEATURES

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



TO-252

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

UTT40N08L-TN3-R (1) Packing Type (2) Package Type (3) Lead Free	(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	UTC UTT40N08 Lot Code 1 L: Lead Free G: Halogen Free Data Code

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

PARAMETER		SYMBOL	RATINGS	UNIT
Drain-Source Voltage		V_{DS}	80	V
Gate-Source Voltage		V_{GS}	± 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	$^{\circ}\text{C/W}$
Junction to Case		θ_{JC}	1.92	$^{\circ}\text{C/W}$

■ **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}	$I_D=250\mu A$, $V_{GS}=0V$	80			V
Drain-Source Leakage Current		I_{DSS}	$V_{DS}=80\text{ V}$, $V_{GS}=0\text{ V}$, $T_J=25^{\circ}C$			1	μA
Gate- Source Leakage Current	Forward	I_{GSS}	$V_{GS}=+20V$			+100	nA
	Reverse		$V_{GS}=-20V$			-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		$R_{DS(ON)}$	$V_{GS}=10V$, $I_D=20A$		35	45	m Ω
DYNAMIC PARAMETERS							
Input Capacitance		C_{ISS}	$V_{DS}=25\text{ V}$, $V_{GS}=0V$, $f=1.0MHz$		2800		pF
Output Capacitance		C_{OSS}			320		pF
Reverse Transfer Capacitance		C_{RSS}			140		pF
SWITCHING PARAMETERS							
Total Gate Charge		Q_G	$V_{DS}=25V$, $V_{GS}=10\text{ V}$, $I_D=40A$		200		nC
Gate to Source Charge		Q_{GS}			19		nC
Gate to Drain Charge		Q_{GD}			14		nC
Turn-ON Delay Time		$t_{D(ON)}$	$V_{DS}=30\text{ V}$, $I_D=1\text{ A}$, $V_{GS}=10V$, $R_G=1.7\ \Omega$		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	$V_D=V_G=0V$, $V_S=1.3V$			40	A
Maximum Body-Diode Pulsed Current		I_{SM}				160	A
Drain-Source Diode Forward Voltage		V_{SD}	$T_J=25^{\circ}C$, $I_S=40A$, $V_{GS}=0V$			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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