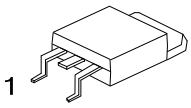
40A, 80V N-CHANNEL POWER MOSFET



TO-252

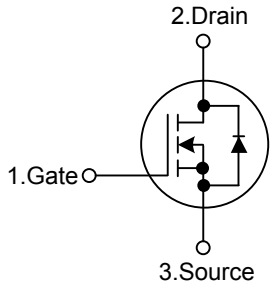
■ DESCRIPTION

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

■ FEATURES

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

■ SYMBOL



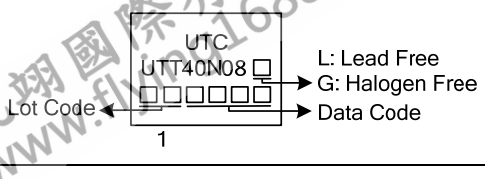
■ ORDERING INFORMATION

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

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

■ MARKING INFORMATION

PACKAGE	MARKING
TO-252	

■ ABSOLUTE MAXIMUM RATINGS (T_J=25°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°C	P_D	65	W
	T_C=125°C		1.92	
Junction Temperature		T_J	+150	°C
Storage Temperature		T_{STG}	-55~+150	°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	°C/W
Junction to Case	θ_{JC}	1.92	°C/W

■ ELECTRICAL CHARACTERISTICS (T_A =25°C, unless otherwise specified)

PARAMETER		SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
OFF CHARACTERISTICS							
Drain-Source Breakdown Voltage		BV_{DSS}	I_D=250μA, V_{GS}=0V	80			V
Drain-Source Leakage Current		I_{DSS}	V_{DS} =80 V, V_{GS} =0 V, T_J=25°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=250μA	2.0		4.0	V
Static Drain-Source On-State Resistance		$R_{DS(ON)}$	V_{GS}=10V, I_D=20A		35	45	mΩ
DYNAMIC PARAMETERS							
Input Capacitance		C_{ISS}	V_{DS} =25 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 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 V, I_D=1 A, V_{GS} =10V, R_G =1.7 Ω		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°C, I_S=40A, V_{GS}=0V			1.3	V

Notes: 1. Pulse width limited by $T_{J(MAX)}$
2. Pulse width ≤300us, duty cycle ≤2%.