



UTT75N08

Preliminary

Power MOSFET

**75A, 80V N-CHANNEL
POWERTRENCH MOSFET**

■ DESCRIPTION

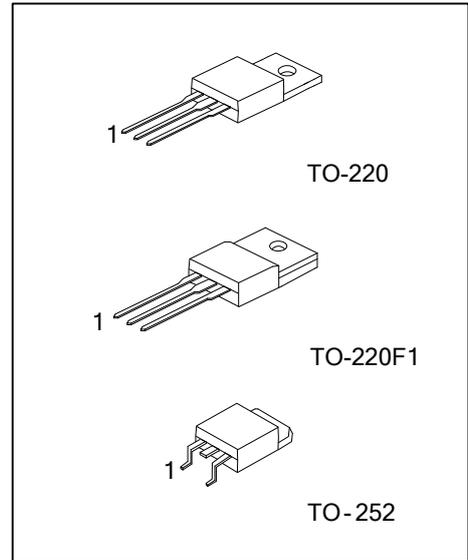
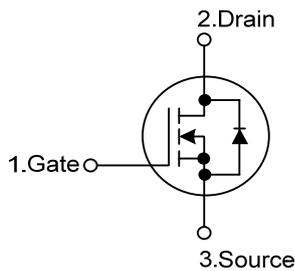
The UTC **UTT75N08** is an N-channel enhancement MOSFET, it uses UTC's advanced technology to provide the customers with perfect $R_{DS(ON)}$, high switching speed, high current capacity and low gate charge.

The UTC **UTT75N08** is suitable for DC-DC converters, Off-Line UPS, High Voltage Synchronous Rectifier, Primary Switch for 48V and 24V Systems, etc.

■ FEATURES

- * $R_{DS(ON)} < 21m\Omega @ V_{GS}=10V, I_D=75A$
- * High Switching Speed
- * High Current Capacity

■ SYMBOL



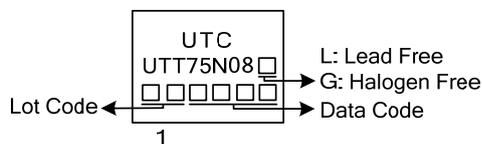
■ ORDERING INFORMATION

Ordering Number		Package	Pin Assignment			Packing
Lead Free	Halogen Free		1	2	3	
UTT75N08L-TA3-T	UTT75N08G-TA3-T	TO-220	G	D	S	Tube
UTT75N08L-TF1-T	UTT75N08G-TF1-T	TO-220F1	G	D	S	Tube
UTT75N08L-TN3-R	UTT75N08G-TN3-R	TO-252	G	D	S	Tape Reel

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

<p>UTT75N08L-TA3-T</p> <p>(1)Packing Type</p> <p>(2)Package Type</p> <p>(3)Green Package</p>	<p>(1) T: Tube, R: Tape Reel</p> <p>(2) TA3: TO-220, TF1: TO-220F1, TN3: TO-252</p> <p>(3) L: Lead Free, G: Halogen Free and Lead Free</p>
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■ MARKING



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

PARAMETER		SYMBOL	RATINGS	UNIT
Drain-Source Voltage		V_{DSS}	80	V
Gate-Source Voltage		V_{GSS}	± 20	V
Drain Current	Continuous	I_D	75	A
	Pulsed (Note 1)	I_{DM}	300	A
Single Pulsed Avalanche Energy (Note 2)		E_{AS}	85	mJ
Power Dissipation	TO-220	P_D	125	W
	TO-220F1		40	W
	TO-252		50	W
Junction Temperature		T_J	150	$^\circ\text{C}$
Storage Temperature Range		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 CHARACTERISTICS

PARAMETER		SYMBOL	RATINGS	UNIT
Junction to Ambient	TO-220/TO-220F1	θ_{JA}	62.5	$^\circ\text{C/W}$
	TO-252		110	$^\circ\text{C/W}$
Junction to Case	TO-220	θ_{JC}	1	$^\circ\text{C/W}$
	TO-220F1		3.2	
	TO-252		2.5	

■ ELECTRICAL CHARACTERISTICS ($T_J=25^\circ\text{C}$, unless otherwise noted)

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	Forward	I_{GSS}	$V_{GS}=+20\text{V}$, $V_{DS}=0\text{V}$		+100	nA
ON CHARACTERISTICS						
Gate Threshold Voltage	$V_{GS(TH)}$	$V_{DS}=V_{GS}$, $I_D=250\mu\text{A}$	1.4		3	V
Static Drain-Source On-State Resistance	$R_{DS(ON)}$	$V_{GS}=10\text{V}$, $I_D=75\text{A}$			21	m Ω
DYNAMIC PARAMETERS						
Input Capacitance	C_{ISS}	$V_{GS}=0\text{V}$, $V_{DS}=25\text{V}$, $f=1.0\text{MHz}$		3100		pF
Output Capacitance	C_{OSS}			250		pF
Reverse Transfer Capacitance	C_{RSS}			195		pF
SWITCHING PARAMETERS						
Total Gate Charge	Q_G	$V_{GS}=10\text{V}$, $V_{DD}=50\text{V}$, $I_D=1.3\text{A}$, $I_G=100\mu\text{A}$		150		nC
Gate to Source Charge	Q_{GS}			12		nC
Gate to Drain Charge	Q_{GD}			31.6		nC
Turn-ON Delay Time	$t_{D(ON)}$	$V_{DD}=30\text{V}$, $I_D=0.5\text{A}$, $V_{GS}=10\text{V}$, $R_{GS}=25\Omega$		80		ns
Rise Time	t_R			115		ns
Turn-OFF Delay Time	$t_{D(OFF)}$			685		ns
Fall-Time	t_F			190		ns
SOURCE- DRAIN DIODE RATINGS AND CHARACTERISTICS						
Drain-Source Diode Forward Voltage	V_{SD}	$I_{SD}=75\text{A}$			1.25	V

Notes: 1. Pulse Test: Pulse width $\leq 300\mu\text{s}$, Duty cycle $\leq 2\%$
 2. $L = 0.03\text{mH}$, $I_{AS} = 75\text{A}$, $V_{DD} = 80\text{V}$, $R_G = 25\Omega$, Starting $T_J = 25^\circ\text{C}$

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