



UTT80N75

Preliminary

Power MOSFET

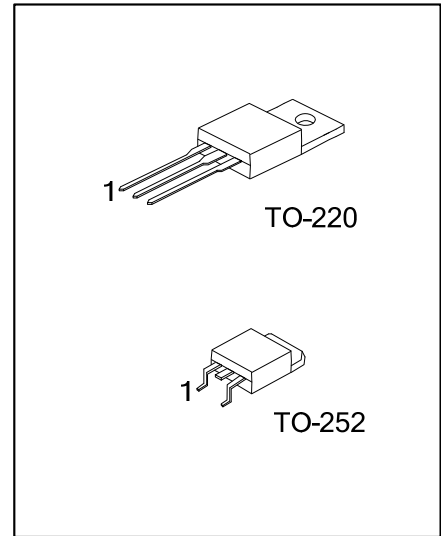
80A, 75V N-CHANNEL POWER MOSFET

DESCRIPTION

The UTC **UTT80N75** is an N-Channel power MOSFET, it uses UTC's advanced technology to provide customers with a minimum on-state resistance, low gate charge and high switching speed.

FEATURES

- * 80A, 75V, $R_{DS(ON)}=10m\Omega @V_{GS}=10V, I_D=20A$
- * Low gate charge (typical 117nC)
- * High switching speed



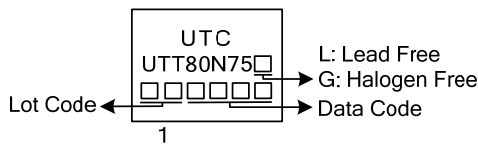
ORDERING INFORMATION

Ordering Number		Package	Pin Assignment			Packing
Lead Free	Halogen Free		1	2	3	
UTT80N75L-TA3-T	UTT80N75G-TA3-T	TO-220	G	D	S	Tube
UTT80N75L-TN3-R	UTT80N75G-TN3-R	TO-252	G	D	S	Tape Reel

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

<p>UTT80N75L-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, TN3: TO-252</p> <p>(3) L: Lead Free, G: Halogen Free and Lead Free</p>
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MARKING



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

PARAMETER		SYMBOL	RATINGS	UNIT
Drain-Source Voltage		V_{DSS}	75	V
Gate-Source Voltage		V_{GSS}	± 25	V
Drain Current	Continuous	I_D	80	A
	Pulsed	I_{DM}	320	A
Avalanche Energy		E_{AS}	330	mJ
Power Dissipation	TO-220	P_D	167	W
	TO-252		50	W
Junction Temperature		T_J	-50 ~ +150	$^\circ\text{C}$
Storage Temperature Range		T_{STG}	-50 ~ +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 RESISTANCES CHARACTERISTICS

PARAMETER		SYMBOL	RATINGS	UNIT
Junction to Ambient	TO-220	θ_{JA}	62.5	$^\circ\text{C}/\text{W}$
	TO-252		110	$^\circ\text{C}/\text{W}$
Junction to Case	TO-220	θ_{JC}	0.75	$^\circ\text{C}/\text{W}$
	TO-252		2.5	$^\circ\text{C}/\text{W}$

■ 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}	$I_D=250\mu\text{A}, V_{GS}=0\text{V}$	75			V	
Drain-Source Leakage Current		I_{DSS}	$V_{DS}=75\text{V}, V_{GS}=0\text{V}$			10	μA	
Gate-Source Leakage Current	Forward	I_{GSS}	$V_{GS}=+25\text{V}, V_{DS}=0\text{V}$			+100	nA	
	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		4	V	
Static Drain-Source On-State Resistance		$R_{DS(ON)}$	$V_{GS}=10\text{V}, I_D=20\text{A}$		10	12	m Ω	
DYNAMIC PARAMETERS								
Input Capacitance		C_{ISS}	$V_{GS}=0\text{V}, V_{DS}=25\text{V}, f=1.0\text{MHz}$		3700		pF	
Output Capacitance		C_{OSS}				730		pF
Reverse Transfer Capacitance		C_{RSS}				240		pF
SWITCHING PARAMETERS								
Total Gate Charge		Q_G	$V_{GS}=10\text{V}, V_{DD}=60\text{V}, I_D=40\text{A}, I_G=3.33\text{mA}$		117		nC	
Gate to Source Charge		Q_{GS}				27		nC
Gate to Drain Charge		Q_{GD}				47		nC
Turn-ON Delay Time		$t_{D(ON)}$	$V_{DD}=30\text{V}, I_D=1.0\text{A}, R_G=4.6\Omega, V_{GS}=10\text{V}$		25		ns	
Rise Time		t_R				25		ns
Turn-OFF Delay Time		$t_{D(OFF)}$				66		ns
Fall-Time		t_F				30		ns
SOURCE- DRAIN DIODE RATINGS AND CHARACTERISTICS								
Maximum Body-Diode Continuous Current		I_S		80			A	
Maximum Body-Diode Pulsed Current		I_{SM}		320			A	
Drain-Source Diode Forward Voltage		V_{SD}	$I_S=80\text{A}, V_{GS}=0\text{V}$			1.5	V	
Body Diode Reverse Recovery Time		t_{RR}					ns	

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