

**UTT80N75**

Preliminary

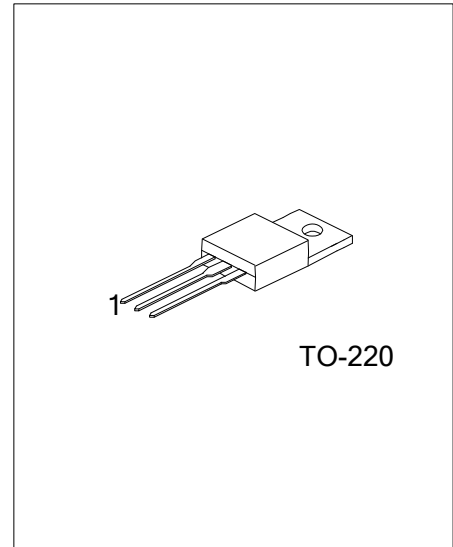
Power MOSFET**80A, 75V N-CHANNEL POWER MOSFET**

■ 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

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

UTT80N75L-TA3-T	(1)Packing Type	(1) T: Tube
	(2)Package Type	(2) TA3: TO-220
	(3)Lead Free	(3) L: Lead Free, G: Halogen Free

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

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	Single Pulsed	E_{AS}	330	mJ
Power Dissipation		P_{D}	167	W
Junction Temperature		T_{J}	$-50 \sim +150$	$^{\circ}\text{C}$
Storage Temperature Range		T_{STG}	$-50 \sim +150$	$^{\circ}\text{C}$

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	θ_{JA}	62.5	$^{\circ}\text{C/W}$
Junction to Case	θ_{JC}	0.75	$^{\circ}\text{C/W}$

■ ELECTRICAL CHARACTERISTICS

PARAMETER		SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
OFF CHARACTERISTICS							
Drain-Source Breakdown Voltage		BV _{DSS}	I _D =250μA, V _{GS} =0V	75			V
Drain-Source Leakage Current		I _{DSS}	V _{DS} =75V, V _{GS} =0V			10	μA
Gate-Source Leakage Current	Forward	I _{GSS}	V _{GS} =+25V, V _{DS} =0V			+100	nA
	Reverse		V _{GS} =-25V, V _{DS} =0V			-100	nA
ON CHARACTERISTICS							
Gate Threshold Voltage		V _{GS(TH)}	V _{DS} =V _{GS} , I _D =250μA	2		4	V
Static Drain-Source On-State Resistance		R _{DS(ON)}	V _{GS} =10V, I _D =20A		10	12	mΩ
DYNAMIC PARAMETERS							
Input Capacitance		C _{ISS}	V _{GS} =0V, V _{DS} =25V, f=1.0MHz		3700		pF
Output Capacitance		C _{OSS}			730		pF
Reverse Transfer Capacitance		C _{RSS}			240		pF
SWITCHING PARAMETERS							
Total Gate Charge		Q _G	V _{GS} =10V, V _{DD} =60V, I _D =40A, I _G =3.33mA		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} =30V, I _D =1.0A, R _G =4.6Ω, V _{GS} =10V		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 =80A, V _{GS} =0V			1.5	V
Body Diode Reverse Recovery Time		t _{RR}					ns

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