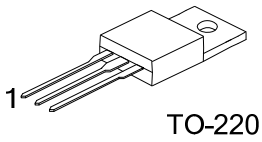
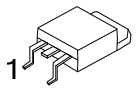
80A, 75V N-CHANNEL POWER MOSFET



TO-220



TO-252

■ 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, $R_{DS(ON)}$=10mΩ @V_{GS}=10V, I_D=20A
* Low gate charge (typical 117nC)
* High switching speed

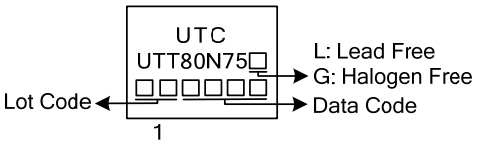
■ ORDERING INFORMATION

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

UTT80N75L-TA3-T (1)Packing Type (2)Package Type (3)Green Package	(1) T: Tube, R: Tape Reel (2) TA3: TO-220, TN3: TO-252 (3) L: Lead Free, G: Halogen Free and Lead Free

■ MARKING



■ ABSOLUTE MAXIMUM RATINGS (T_A=25°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	Single Pulsed	E_{AS}	330	mJ
Power Dissipation	TO-220	P_D	167	W
	TO-252		50	W
Junction Temperature		T_J	-50 ~ +150	°C
Storage Temperature Range		T_{STG}	-50 ~ +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 RESISTANCES CHARACTERISTICS

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