



# UTT20N10

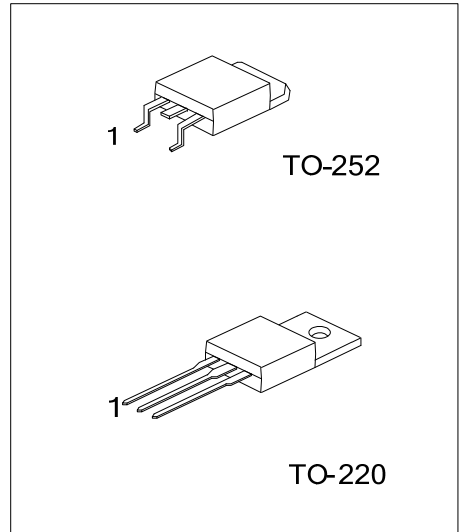
*Power MOSFET*

## 20A, 100V N-CHANNEL POWER MOSFET

■ DESCRIPTION

The UTC **UTT20N10** is a N-channel enhancement mode power MOSFET using UTC's advanced technology to provide customers with a minimum on-state resistance and superior switching performance. It also can withstand high energy pulse in the avalanche and commutation mode.

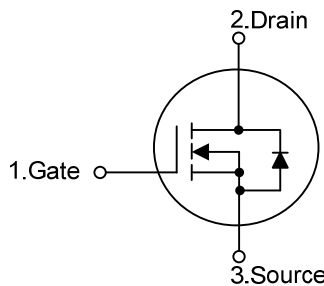
The UTC **UTT20N10** is universally applied in low voltage, such as automotive, high efficiency switching for DC/DC converters, and DC motor control.



■ FEATURES

- \*  $R_{DS(on)} < 0.12\Omega @ V_{GS} = 10V$
- \* Typically 32pF low  $C_{RSS}$
- \* High switching speed
- \* Typically 19nC low gate charge

■ SYMBOL



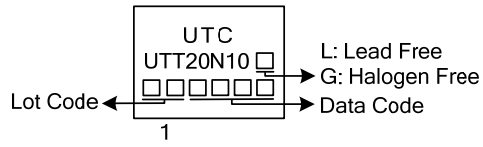
■ ORDERING INFORMATION

Ordering Number		Package	Pin Assignment			Packing
Lead Free	Halogen Free		1	2	3	
UTT20N10L-TA3-T	UTT20N10G-TA3-T	TO-220	G	D	S	Tube
UTT20N10L-TN3-R	UTT20N10G-TN3-R	TO-252	G	D	S	Tape Reel

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

<p>UTT20N10G-TA3-T</p> <ul style="list-style-type: none"> <li>(1)Packing Type</li> <li>(2)Package Type</li> <li>(3)Green Package</li> </ul>	<ul style="list-style-type: none"> <li>(1) T: Tube, R: Tape Reel</li> <li>(2) TA3: TO-220, TN3: TO-252</li> <li>(3) G: Halogen Free and Lead Free, L: Lead Free</li> </ul>
---	--

## MARKING



FLYING 汎翔國際有限公司  
www.flying1688.com

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

PARAMETER		SYMBOL	RATINGS	UNIT
Drain-Source Voltage		$V_{DSS}$	100	V
Gate-Source Voltage		$V_{GSS}$	$\pm 25$	V
Drain Current	Continuous	$I_D$	20	A
	Pulsed	$I_{DM}$	80	A
Power Dissipation	TO-220	$P_D$	62.5	W
	TO-252		50	
Junction Temperature		$T_J$	+150	$^\circ\text{C}$
Storage Temperature		$T_{STG}$	-40 ~ +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 DATA

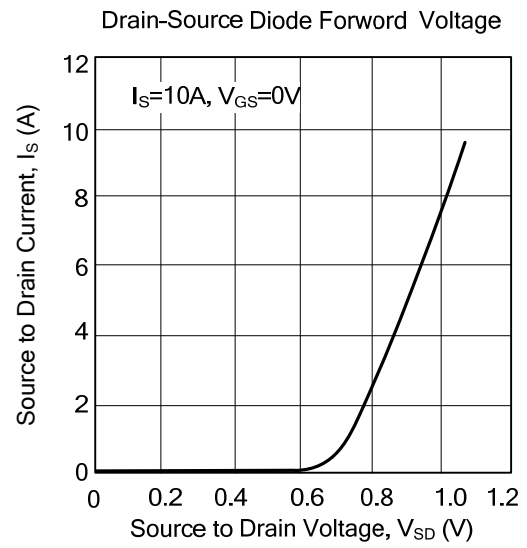
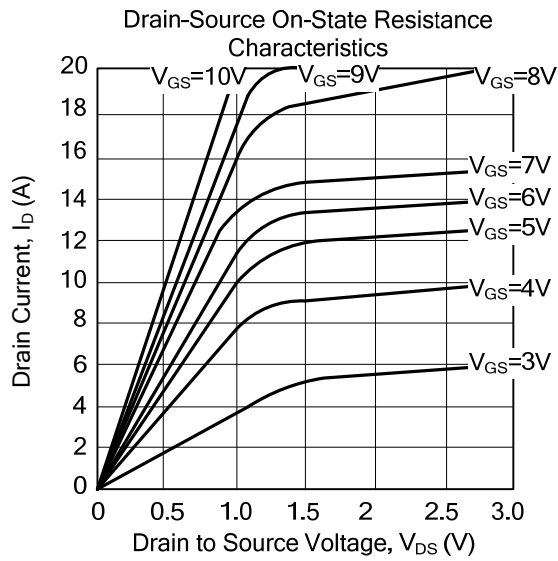
PARAMETER		SYMBOL	RATINGS	UNIT
Junction to Ambient	TO-220	$\theta_{JA}$	62.5	$^\circ\text{C/W}$
	TO-252		100	
Junction to Case	TO-220	$\theta_{JC}$	2	$^\circ\text{C/W}$
	TO-252		2.5	

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

PARAMETER		SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
<b>OFF CHARACTERISTICS</b>							
Drain-Source Breakdown Voltage		$BV_{DSS}$	$I_D=250\mu\text{A}, V_{GS}=0\text{V}$	100			V
Drain-Source Leakage Current		$I_{DSS}$	$V_{DS}=100\text{V}, V_{GS}=0\text{V}$			1	$\mu\text{A}$
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
<b>ON CHARACTERISTICS</b>							
Gate Threshold Voltage		$V_{GS(TH)}$	$V_{DS}=V_{GS}, I_D=250\mu\text{A}$	1.0		3.0	V
Static Drain-Source On-State Resistance		$R_{DS(ON)}$	$V_{GS}=10\text{V}, I_D=20\text{A}$			120	m $\Omega$
<b>DYNAMIC PARAMETERS</b>							
Input Capacitance		$C_{ISS}$	$V_{GS}=0\text{V}, V_{DS}=25\text{V}, f=1.0\text{MHz}$		600	780	pF
Output Capacitance		$C_{OSS}$			165	215	pF
Reverse Transfer Capacitance		$C_{RSS}$			32	40	pF
<b>SWITCHING PARAMETERS</b>							
Total Gate Charge		$Q_G$	$V_{GS}=10\text{V}, V_{DS}=80\text{V}, I_D=19\text{A}$ (Note 1, 2)		19	25	nC
Gate to Source Charge		$Q_{GS}$			3.9		nC
Gate to Drain Charge		$Q_{GD}$			9.0		nC
Turn-ON Delay Time		$t_{D(ON)}$	$V_{DD}=50\text{V}, I_D=1\text{A}, R_L=50\Omega,$ $V_{GS}=10\text{V}, R_G=25\Omega$ (Note 1, 2)		7.5	25	ns
Rise Time		$t_R$			150	310	ns
Turn-OFF Delay Time		$t_{D(OFF)}$			20	50	ns
Fall-Time		$t_F$			65	140	ns
<b>SOURCE- DRAIN DIODE RATINGS AND CHARACTERISTICS</b>							
Maximum Body-Diode Continuous Current		$I_S$				20	A
Maximum Body-Diode Pulsed Current		$I_{SM}$				80	A
Drain-Source Diode Forward Voltage		$V_{SD}$	$I_S=20\text{A}, V_{GS}=0\text{V}$			1.5	V

Notes: 1. Pulse Test: Pulse width $\leq 300\mu\text{s}$ , Duty cycle $\leq 2\%$ .  
2. Essentially independent of operating temperature.

■ TYPICAL CHARACTERISTICS



UTC assumes no responsibility for equipment failures that result from using products at values that exceed, even momentarily, rated values (such as maximum ratings, operating condition ranges, or other parameters) listed in products specifications of any and all UTC products described or contained herein. UTC products are not designed for use in life support appliances, devices or systems where malfunction of these products can be reasonably expected to result in personal injury. Reproduction in whole or in part is prohibited without the prior written consent of the copyright owner. The information presented in this document does not form part of any quotation or contract, is believed to be accurate and reliable and may be changed without notice.