

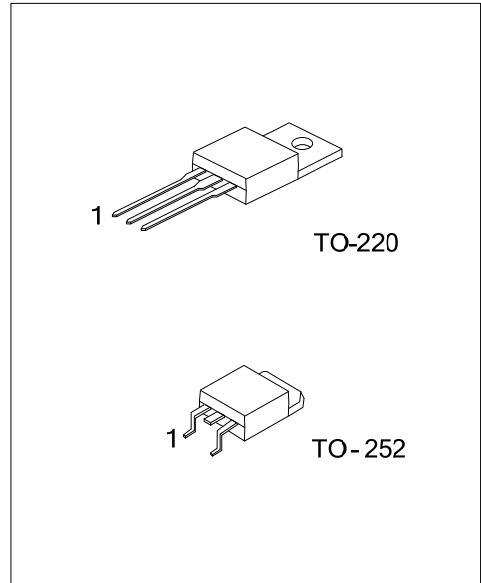


UTT60N10

Preliminary

Power MOSFET

**60A, 100V N-CHANNEL
ENHANCEMENT MODE POWER
MOSFET TRANSISTOR**



■ DESCRIPTION

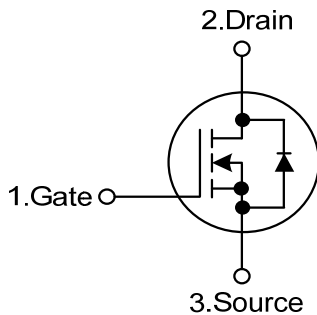
The UTC **UTT60N10** is an N-channel enhancement power MOSFET using UTC's advanced technology to provide the customers with perfect $R_{DS(ON)}$, high switching speed, high current capacity and low gate charge.

The UTC **UTT60N10** is suitable for motor control, AC-DC or DC-DC converters and audio amplifiers, etc.

■ FEATURES

- * $R_{DS(ON)} < 24m\Omega$ @ $V_{GS}=10V, I_D=30A$
- * High Switching Speed
- * High Current Capacity
- * Low Gate Charge (typical 50nC)

■ SYMBOL



■ ORDERING INFORMATION

Ordering Number		Package	Pin Assignment			Packing
Lead Free	Halogen Free		1	2	3	
UTT60N10L-TA3-T	UTT60N10G-TA3-T	TO-220	G	D	S	Tube
UTT60N10L-TN3-T	UTT60N10G-TN3-T	TO-252	G	D	S	Tube
UTT60N10L-TN3-R	UTT60N10G-TN3-R	TO-252	G	D	S	Tape Reel

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

<p>UTT60N10L-TA3-T</p> <p>(1) Packing Type (2) Package Type (3) Lead Free</p>	<p>(1) T: Tube (2) TA3: TO-220, TN3: TO-252 (3) L: Lead Free, G: Halogen Free</p>
---	---

■ ABSOLUTE MAXIMUM RATINGS

PARAMETER		SYMBOL	RATINGS	UNIT	
Drain-Source Voltage		V_{DSS}	100	V	
Gate-Source Voltage		V_{GSS}	± 25	V	
Drain Current	Continuous	I_D	60	A	
	Pulsed	I_{DM}	100	A	
Avalanche Energy		Single Pulsed	E_{AS}	270	mJ
Power Dissipation	TO-220	P_D	100	W	
	TO-252		114	W	
Junction Temperature		T_J	150	$^{\circ}C$	
Storage Temperature		T_{STG}	-55 ~ 150	$^{\circ}C$	

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	θ_{JA}	62.5	$^{\circ}C/W$
	TO-252		100	
Junction to Case	TO-220	θ_{JC}	1.25	$^{\circ}C/W$
	TO-252		2.5	

■ ELECTRICAL CHARACTERISTICS

PARAMETER		SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
OFF CHARACTERISTICS							
Drain-Source Breakdown Voltage		BV_{DSS}	$I_D=250\mu A, V_{GS}=0V$	100			V
Drain-Source Leakage Current		I_{DSS}	$V_{DS}=100V, V_{GS}=0V$			1	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		$V_{GS(TH)}$	$V_{DS}=V_{GS}, I_D=250\mu A$	1.0		3.0	V
Static Drain-Source On-State Resistance		$R_{DS(ON)}$	$V_{GS}=10V, I_D=30A$		18	24	m Ω
DYNAMIC PARAMETERS							
Input Capacitance		C_{ISS}	$V_{GS}=0V, V_{DS}=25V, f=1.0MHz$		1450	1900	pF
Output Capacitance		C_{OSS}			520	680	pF
Reverse Transfer Capacitance		C_{RSS}			120	155	pF
SWITCHING PARAMETERS							
Total Gate Charge		Q_G	$V_{GS}=10V, V_{DS}=80V, I_D=30A,$		50	65	nC
Gate to Source Charge		Q_{GS}			9.3		nC
Gate to Drain Charge		Q_{GD}			25		nC
Turn-ON Delay Time		$t_{D(ON)}$	$V_{DD}=30V, I_D=1A, R_G=50\Omega,$ $V_{GS}=10V$		16.5	45	ns
Rise Time		t_R			200	410	ns
Turn-OFF Delay Time		$t_{D(OFF)}$			70	150	ns
Fall-Time		t_F			95	200	ns
SOURCE- DRAIN DIODE RATINGS AND CHARACTERISTICS							
Maximum Body-Diode Continuous Current		I_S		60			A
Maximum Body-Diode Pulsed Current		I_{SM}		100			A
Drain-Source Diode Forward Voltage		V_{SD}	$I_S=30A, V_{GS}=0V$			1.5	V

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.