



UTT60N10

Power MOSFET

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

DESCRIPTION

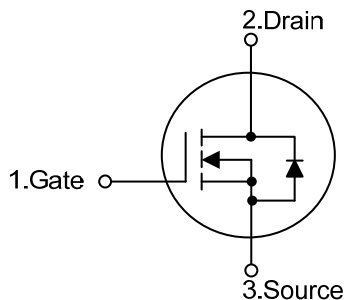
The UTC **UTT60N10** is an N-channel enhancement power MOSFET using UTC's advanced technology to provide the customers with perfect $R_{DS(ON)}$, high switching speed, high current capacity and low gate charge.

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

SYMBOL

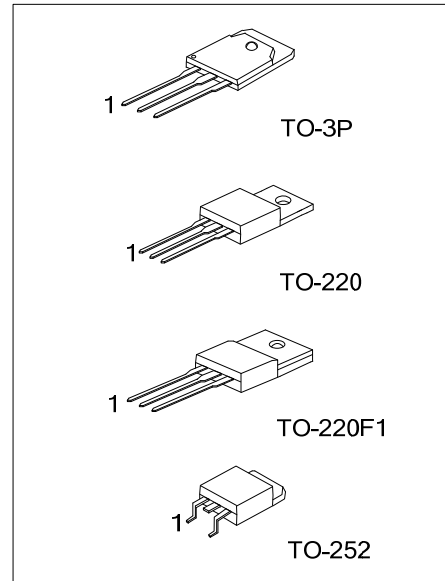


ORDERING INFORMATION

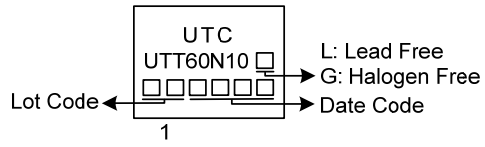
Ordering Number		Package	Pin Assignment			Packing
Lead Free	Halogen Free		1	2	3	
UTT60N10L-TA3-T	UTT60N10G-TA3-T	TO-220	G	D	S	Tube
UTT60N10L-TF1-T	UTT60N10G-TF1-T	TO-220F1	G	D	S	Tube
UTT60N10L-T3P-T	UTT60N10G-T3P-T	TO-3P	G	D	S	Tube
UTT60N10L-TN3-R	UTT60N10G-TN3-R	TO-252	G	D	S	Tape Reel

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

<p>UTT60N10G-TA3-T</p>	<p>(1) T: Tube, R: Tape Reel</p> <p>(2) TA3: TO-220, TF1: TO-220F1, TN3: TO-252 T3P: TO-3P</p> <p>(3) G: Halogen Free and Lead Free, L: Lead Free</p>
------------------------	---



MARKING



FLYING 汎翔國際有限公司
www.flying1688.com

■ ABSOLUTE MAXIMUM RATINGS

PARAMETER		SYMBOL	RATINGS	UNIT
Drain-Source Voltage		V_{DSS}	100	V
Gate-Source Voltage		V_{GSS}	± 20	V
Drain Current	Continuous	I_D	60	A
	Pulsed	I_{DM}	100	A
Avalanche Energy		E_{AS}	270	mJ
Power Dissipation	TO-220	P_D	100	W
	TO-220F1		70	W
	TO-252		114	W
	TO-3P		118	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.

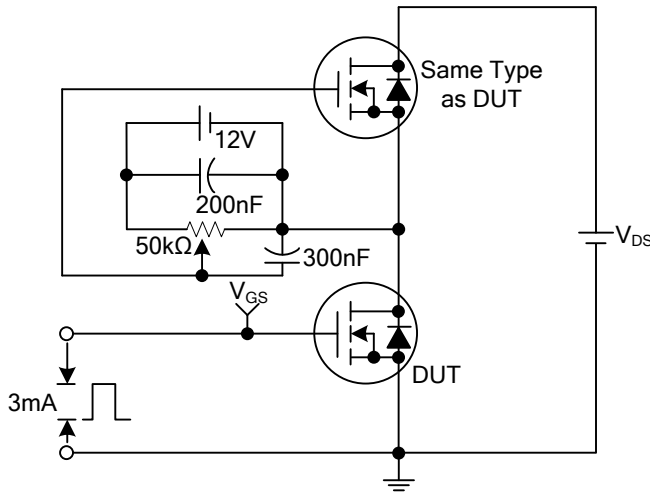
■ THERMAL RESISTANCES CHARACTERISTICS

PARAMETER		SYMBOL	RATINGS	UNIT
Junction to Ambient	TO-220/ TO-220F1	θ_{JA}	62.5	$^{\circ}C/W$
	TO-252		100	
	TO-3P		30	
Junction to Case	TO-220	θ_{JC}	1.25	$^{\circ}C/W$
	TO-220F1		1.77	
	TO-252		2.5	
	TO-3P		1.06	

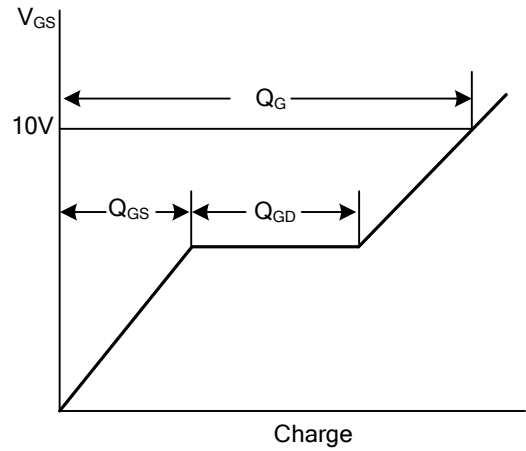
■ ELECTRICAL CHARACTERISTICS

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}	$V_{DS}=100V, V_{GS}=0V$			10	μA
Gate- Source Leakage Current	Forward	I_{GSS}	$V_{GS}=+20V, V_{DS}=0V$			+100	nA
	Reverse		$V_{GS}=-20V, V_{DS}=0V$			-100	nA
ON CHARACTERISTICS							
Gate Threshold Voltage		$V_{GS(TH)}$	$V_{DS}=V_{GS}, I_D=250\mu A$	2.0		4.0	V
Static Drain-Source On-State Resistance		$R_{DS(ON)}$	$V_{GS}=10V, I_D=30A$			24	m Ω
DYNAMIC PARAMETERS							
Input Capacitance		C_{ISS}	$V_{GS}=0V, V_{DS}=25V, f=1.0MHz$		1320	1900	pF
Output Capacitance		C_{OSS}			330	680	pF
Reverse Transfer Capacitance		C_{RSS}			132	200	pF
SWITCHING PARAMETERS							
Total Gate Charge		Q_G	$V_{GS}=10V, V_{DS}=25V, I_D=1.3A, I_G=100\mu A$		213		nC
Gate to Source Charge		Q_{GS}			17		nC
Gate to Drain Charge		Q_{GD}			33		nC
Turn-ON Delay Time		$t_{D(ON)}$	$V_{DD}=30V, I_D=0.5A, R_G=50\Omega, V_{GS}=10V$		140		ns
Rise Time		t_R			180		ns
Turn-OFF Delay Time		$t_{D(OFF)}$			2180		ns
Fall-Time		t_F			396		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

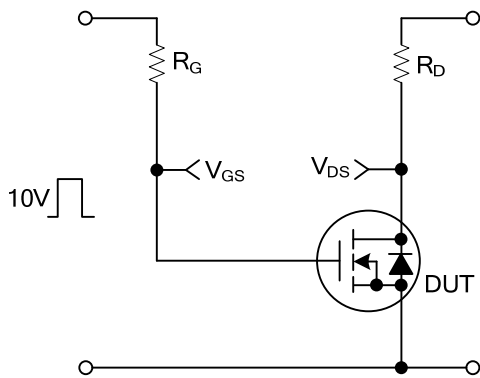
TEST CIRCUITS AND WAVEFORMS



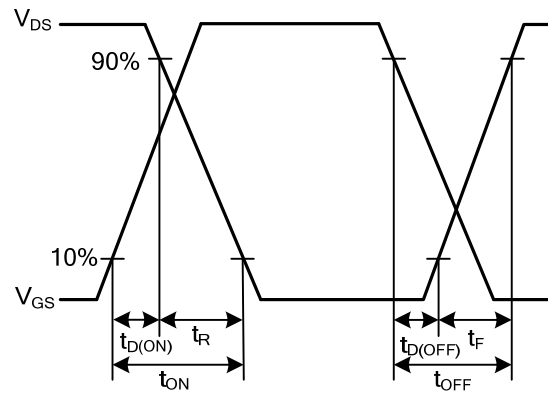
Gate Charge Test Circuit



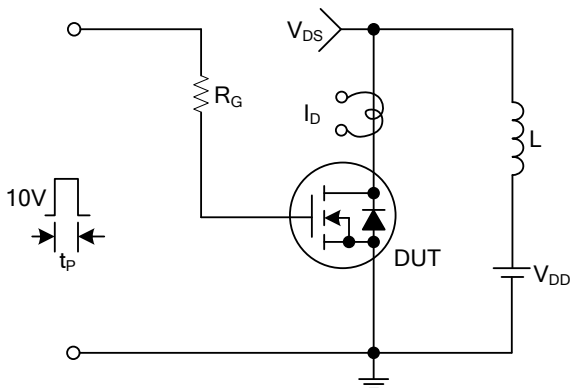
Gate Charge Waveforms



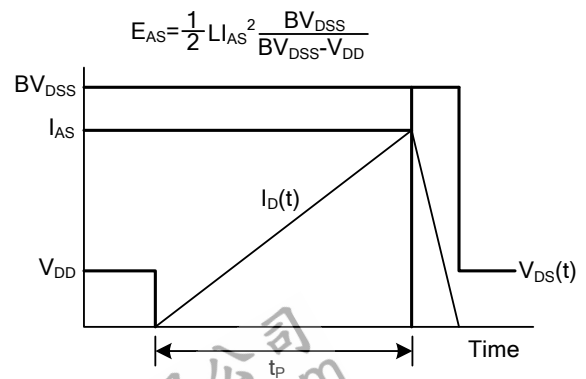
Resistive Switching Test Circuit



Resistive Switching Waveforms

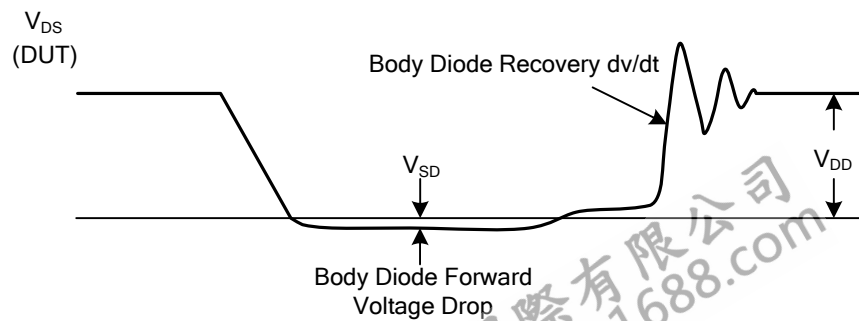
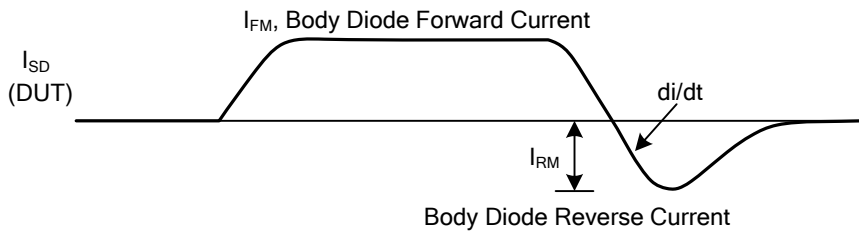
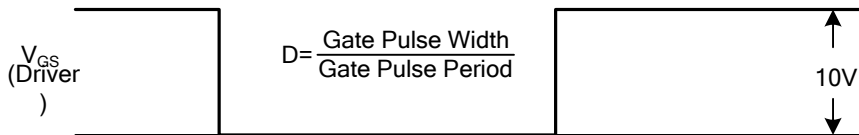
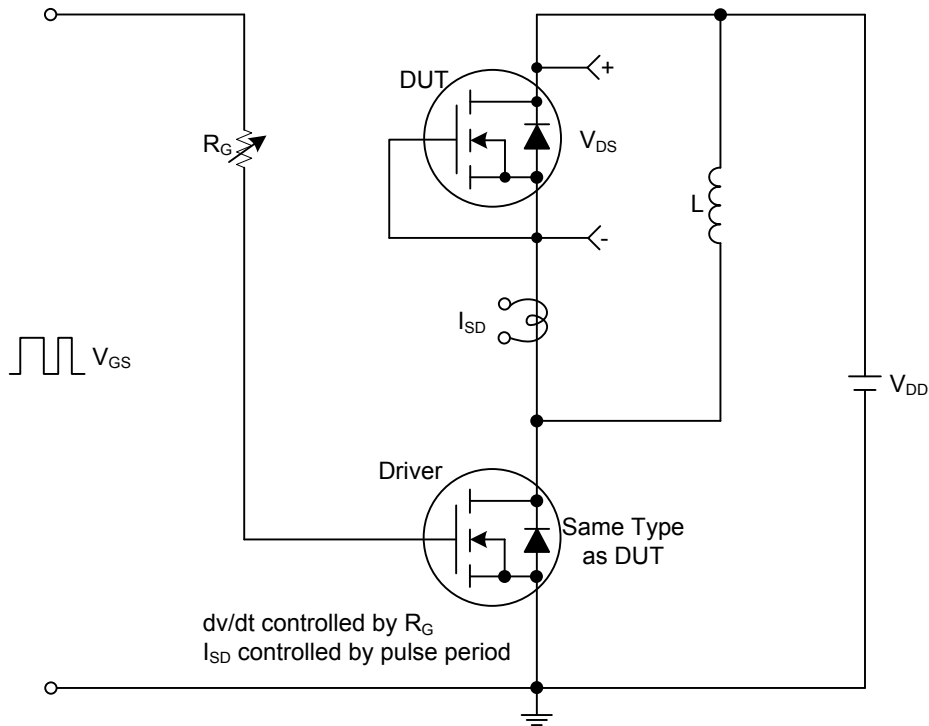


Unclamped Inductive Switching Test Circuit



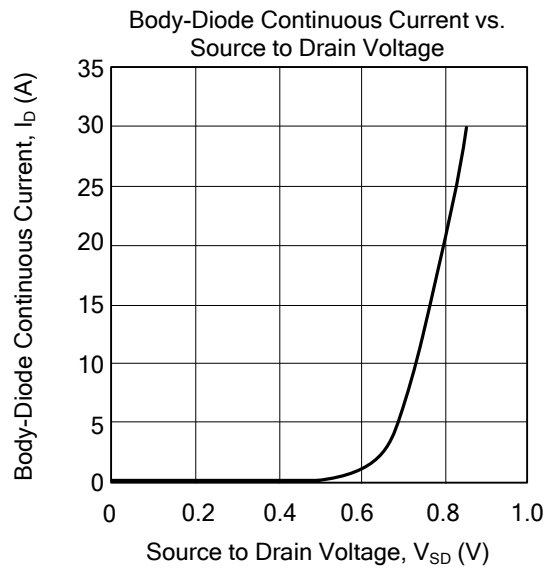
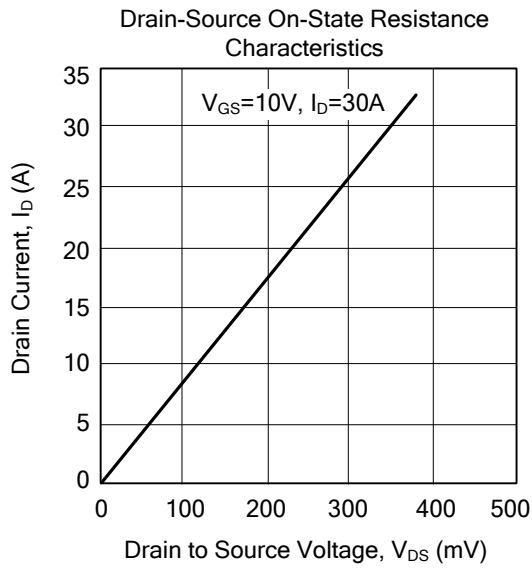
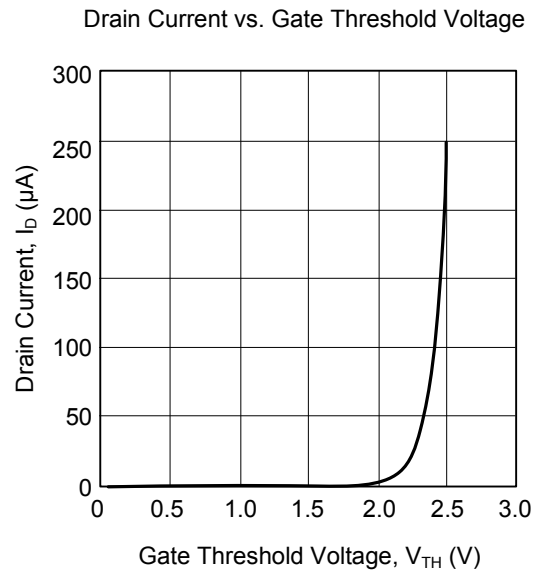
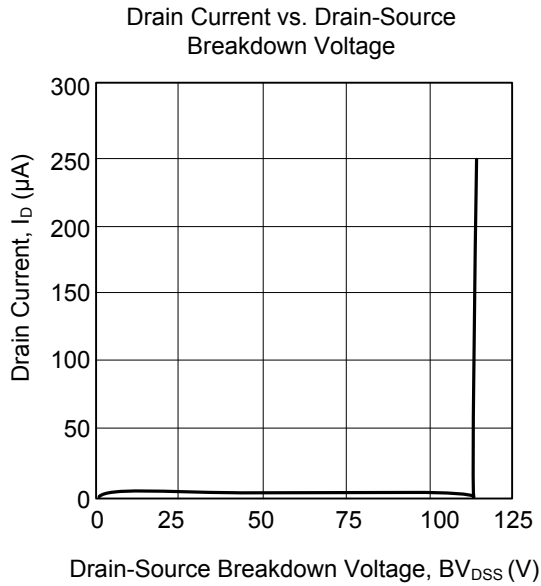
Unclamped Inductive Switching Waveforms

■ TEST CIRCUITS AND WAVEFORMS(Cont.)



Peak Diode Recovery dv/dt Test Circuit and Waveforms

■ 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. UTC reserves the right to make changes to information published in this document, including without limitation specifications and product descriptions, at any time and without notice. This document supersedes and replaces all information supplied prior to the publication hereof.