



UTT150N06H

Power MOSFET

150A, 60V N-CHANNEL POWER MOSFET

DESCRIPTION

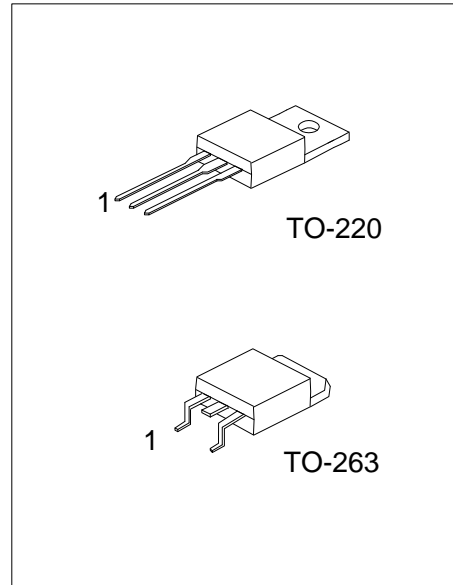
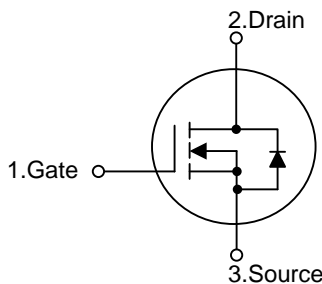
The UTC **UTT150N06H** is an N-channel Power Trench MOSFET, using UTC's advanced technology to provide customers with a minimum on-state resistance and superior switching performance.

The UTC **UTT150N06H** is generally applied in synchronous Rectification or DC to DC converter.

FEATURES

- * $R_{DS(ON)} \leq 3.8 \text{ m}\Omega @ V_{GS}=10V, I_D = 75A$
- * High Switching Speed
- * High Power and Current Handling Capability

SYMBOL



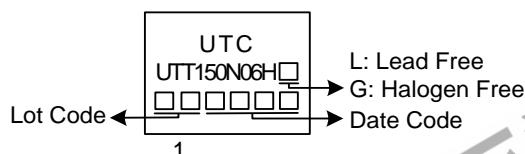
ORDERING INFORMATION

Ordering Number		Package	Pin Assignment			Packing
Lead Free	Halogen Free		1	2	3	
UTT150N06HL-TA3-T	UTT150N06HG-TA3-T	TO-220	G	D	S	Tube
UTT150N06HL-TQ2-R	UTT150N06HG-TQ2-R	TO-263	G	D	S	Tape Reel
UTT150N06HL-TQ2-T	UTT150N06HG-TQ2-T	TO-263	G	D	S	Tube

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

<p>UTT150N06HG-TA3-T</p> <p>(1) Packing Type (2) Package Type (3) Green Package</p>	<p>(1) T: Tube, R: Tape Reel (2) TA3: TO-220, TQ2: TO-263 (3) G: Halogen Free and Lead Free, L: Lead Free</p>
---	---

MARKING



■ ABSOLUTE MAXIMUM RATINGS (T_C=25°C, unless otherwise specified)

PARAMETER		SYMBOL	RATINGS	UNIT
Drain-Source Voltage		V _{DSS}	60	V
Gate-Source Voltage		V _{GSS}	±20	V
Peak Diode Recovery dv/dt (Note 4)		dv/dt	7.0	V/ns
Drain Current	Continuous (T _C =25°C, Silicion Limited)	I _D	150	A
	Pulsed (Note 2)	I _{DM}	600	A
Single Pulsed Avalanche Energy (Note 3)		E _{AS}	500	mJ
Power Dissipation	T _C =25°C	P _D	231	W
	Derate above 25°C		1.54	
Junction Temperature		T _J	+150	°C
Storage Temperature		T _{STG}	-55 ~ +150	°C

Notes: 1. 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.

2. Repetitive Rating: Pulse width limited by maximum junction temperature.

3. L = 0.1mH, I_{AS} = 75A, V_{DD} = 50V, R_G = 25Ω, Starting T_J = 25°C

4. Essentially independent of operating temperature Typical Characteristics

■ THERMAL DATA

PARAMETER	SYMBOL	RATINGS	UNIT
Junction to Ambient	θ _{JA}	62.5	°C/W
Junction to Case	θ _{JC}	0.94	°C/W

■ ELECTRICAL CHARACTERISTICS (T_C=25°C, unless otherwise specified)

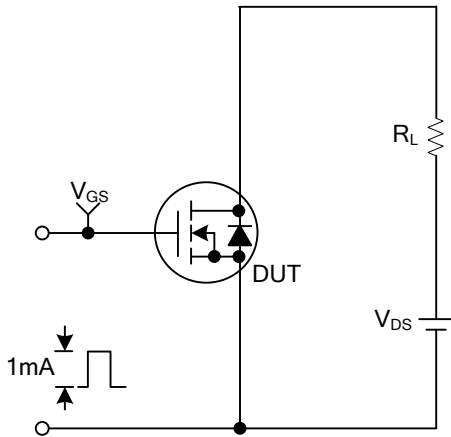
PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
OFF CHARACTERISTICS						
Drain-Source Breakdown Voltage	BV _{DSS}	I _D =250μA, V _{GS} =0V, T _C =25°C	60			V
Drain-Source Leakage Current	I _{DSS}	V _{DS} =60V, V _{GS} =0V			1	μA
Gate- Source Leakage Current	I _{GSS}	Forward V _{GS} =+20V, V _{DS} =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 =250μA	2.0		4.0	V
Static Drain-Source On-State Resistance	R _{DS(ON)}	V _{GS} =10V, I _D =75A			3.8	mΩ
DYNAMIC PARAMETERS						
Input Capacitance	C _{ISS}	V _{GS} =0V, V _{DS} =25V, f=1.0MHz		6190		pF
Output Capacitance	C _{OSS}			1040		pF
Reverse Transfer Capacitance	C _{RSS}			300		pF
SWITCHING PARAMETERS						
Total Gate Charge	Q _G	V _{GS} =10V, V _{DS} =50V, I _D =1.3A I _G =100μA (Note1, 2)		440		nC
Gate to Source Charge	Q _{GS}			60		nC
Gate to Drain Charge	Q _{GD}			60		nC
Turn-ON Delay Time	t _{D(ON)}	V _{GS} =10V, V _{DD} =30V, I _D =0.5A, R _G =25Ω (Note1, 2)		300		ns
Rise Time	t _R			300		ns
Turn-OFF Delay Time	t _{D(OFF)}			800		ns
Fall-Time	t _F			380		ns
SOURCE- DRAIN DIODE RATINGS AND CHARACTERISTICS						
Maximum Body-Diode Continuous Current	I _S				150	A
Maximum Body-Diode Pulsed Current	I _{SM}				600	A
Drain-Source Diode Forward Voltage	V _{SD}	I _{SD} =75A, V _{GS} =0V			1.3	V

Notes: 1. Pulse Test: Pulse width ≤ 300μs, Duty cycle ≤ 2%.

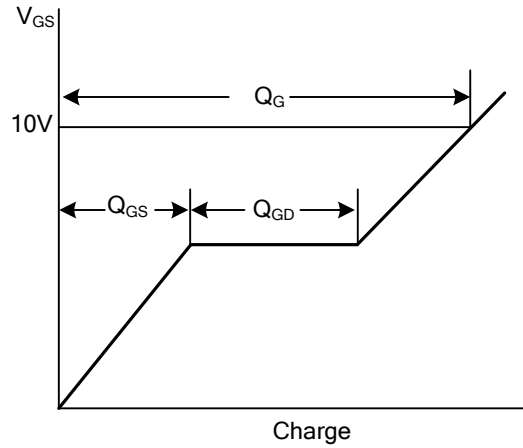
2. Essentially independent of operating temperature.

TEST CIRCUITS AND WAVEFORMS

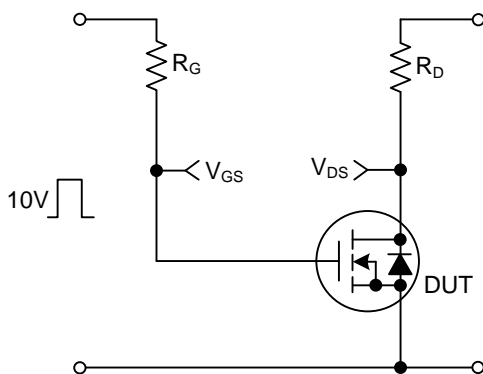
Gate Charge Test Circuit



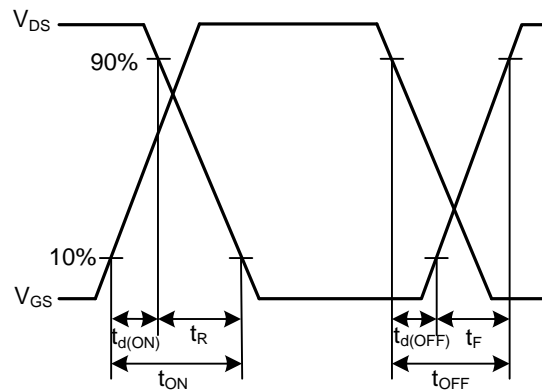
Gate Charge Waveforms



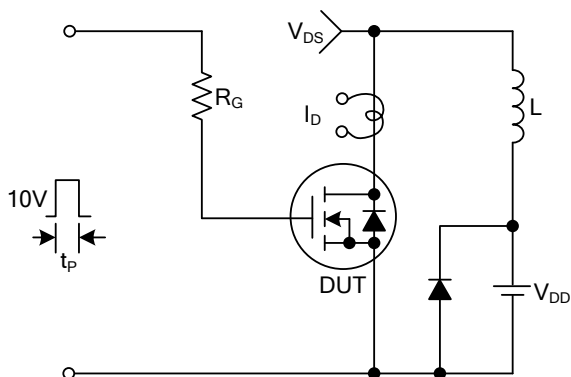
Resistive Switching Test Circuit



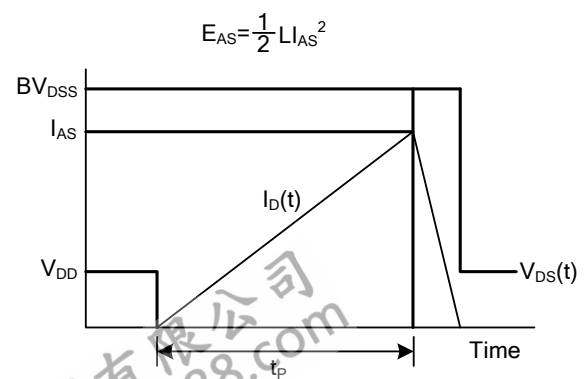
Resistive Switching Waveforms



Unclamped Inductive Switching Test Circuit

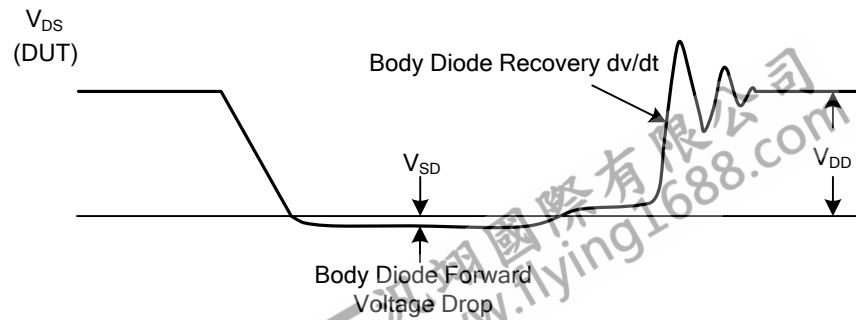
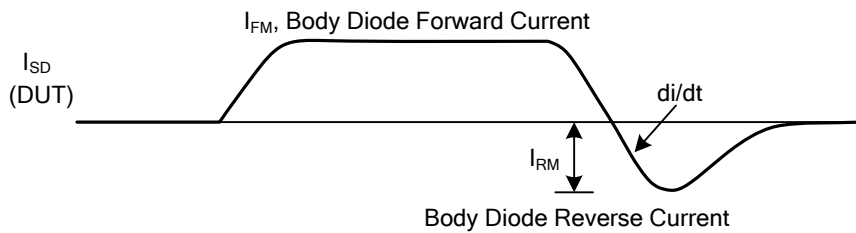
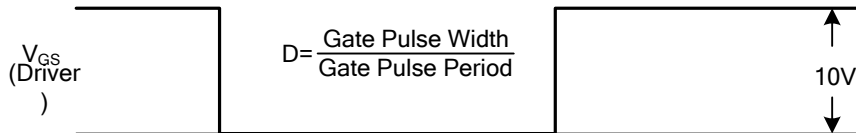
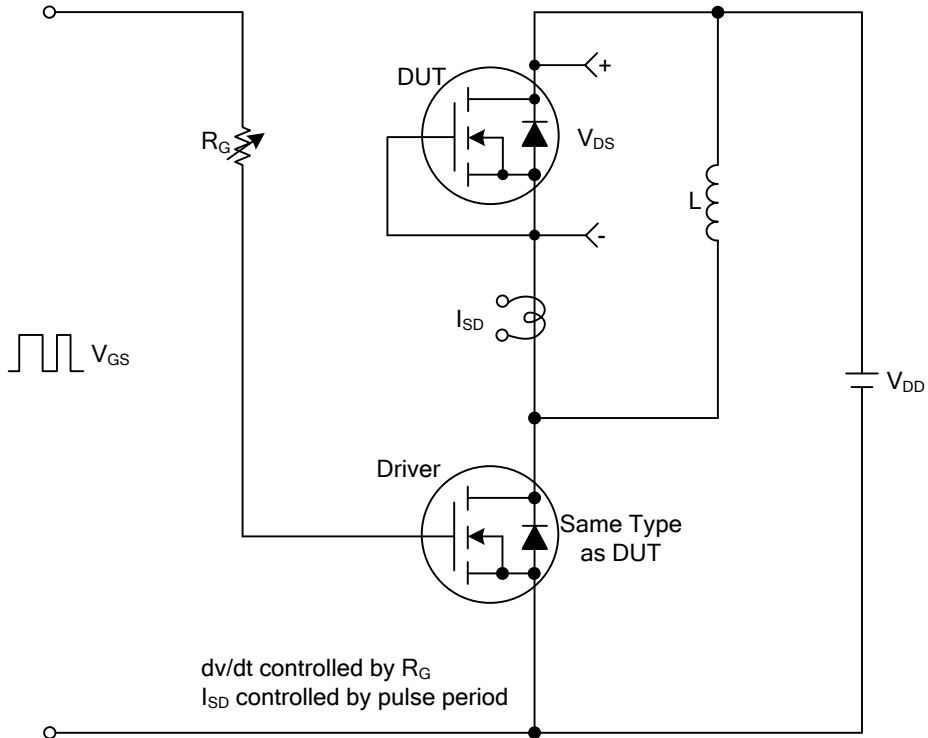


Unclamped Inductive Switching Waveforms



TEST CIRCUITS AND WAVEFORMS

Peak Diode Recovery dv/dt Test Circuit & Waveforms



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.