



UTN6266

Power MOSFET

30A, 60V N-CHANNEL TRENCH MOSFET

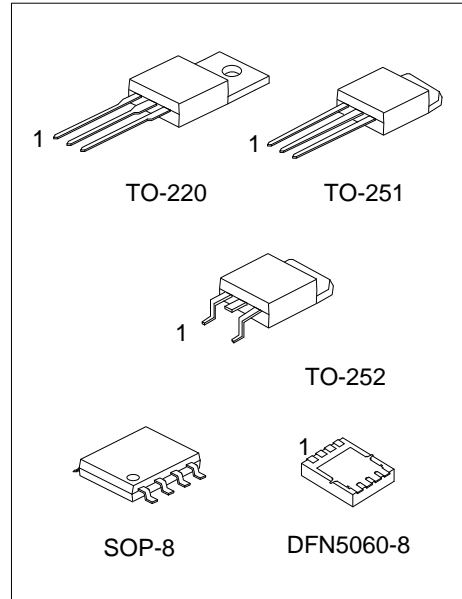
DESCRIPTION

The UTC **UTN6266** is a N-Channel trench mosfet, it uses UTC's advanced technology to provide customers with a minimum on-state resistance, high switching speed and low gate charge.

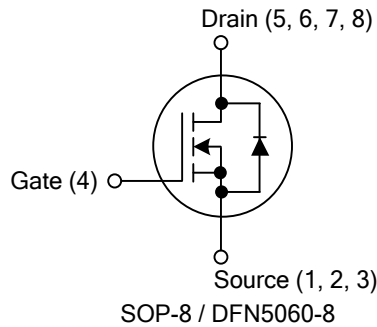
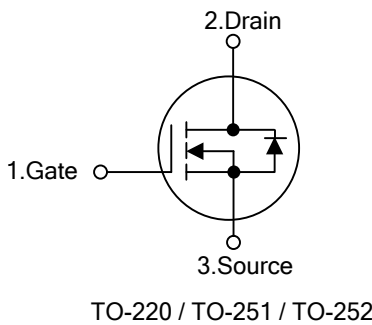
The UTC **UTN6266** is suitable for Synchronous Rectification in DC/DC and AC/DC Converters and industrial and Motor Drive applications.

FEATURES

- * $R_{DS(ON)} \leq 15\text{ m}\Omega$ @ $V_{GS}=10\text{V}$, $I_D=20\text{A}$
- * $R_{DS(ON)} \leq 19\text{ m}\Omega$ @ $V_{GS}=4.5\text{V}$, $I_D=18\text{A}$
- * Low gate charge
- * Low $R_{DS(ON)}$
- * High switching speed



SYMBOL



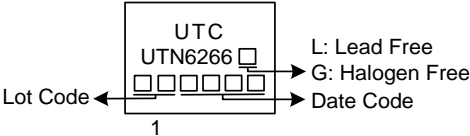
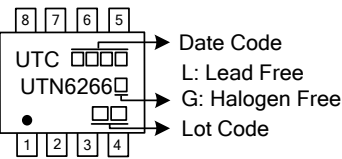
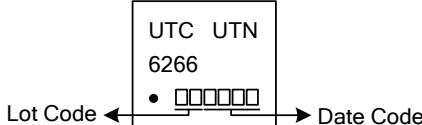
ORDERING INFORMATION

Ordering Number		Package	Pin Assignment								Packing
Lead Free	Halogen Free		1	2	3	4	5	6	7	8	
UTN6266L-TA3-T	UTN6266G-TA3-T	TO-220	G	D	S	-	-	-	-	-	Tube
UTN6266L-TM3-T	UTN6266G-TM3-T	TO-251	G	D	S	-	-	-	-	-	Tube
UTN6266L-TN3-R	UTN6266G-TN3-R	TO-252	G	D	S	-	-	-	-	-	Tape Reel
UTN6266L-S08-R	UTN6266G-S08-R	SOP-8	S	S	S	G	D	D	D	D	Tape Reel
UTN6266L-K08-5060-R	UTN6266G-K08-5060-R	DFN5060-8	S	S	S	G	D	D	D	D	Tape Reel

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

<p>UTN6266G-TA3-T</p> <p>(1) Packing Type</p> <p>(2) Package Type</p> <p>(3) Green Package</p>	<p>(1) T: Tube, R: Tape Reel</p> <p>(2) TA3: TO-220, TM3: TO-251, TN3: TO-252</p> <p>S08: SOP-8, K08-5060: DFN5060-8</p> <p>(3) G: Halogen Free and Lead Free, L: Lead Free</p>
--	---

MARKING

Package	Marking
TO-220 TO-251 TO-252	
SOP-8	
DFN5060-8	

FLYING 汎翔國際有限公司
 www.flying1688.com

■ ABSOLUTE MAXIMUM RATINGS (T_A=25°C, unless otherwise noted)

PARAMETER		SYMBOL	RATINGS	UNIT
Drain-Source Voltage		V _{DSS}	60	V
Gate-Source Voltage		V _{GSS}	±20	V
Drain Current	Continuous	I _D	30	A
	Pulsed	I _{DM}	90	A
Avalanche Current (Note 3)		I _{AS}	20	A
Avalanche Energy (Note 2, 3)		E _{AS}	280	mJ
Power Dissipation	TO-220	P _D	2	W
	TO-251/TO-252		1.2	W
	SOP-8		1.5	W
	DFN5060-8		1.92	W
Junction Temperature		T _J	+150	°C
Storage Temperature Range		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. Single pulse width by junction temperature T_{J(max)}=150°C.

3. L = 1.4mH, I_{AS} = 20A, V_{DD} = 50V, R_G = 25 Ω, Starting T_J = 25°C

■ THERMAL CHARACTERISTICS

PARAMETER		SYMBOL	RATINGS	UNIT
Junction to Ambient	TO-220	θ _{JA}	62.5	°C/W
	TO-251		110	°C/W
	TO-252 (Note 2)		60	°C/W
	SOP-8 (Note 2)		85	°C/W
	DFN5060-8 (Note 2)		65	°C/W
Junction-to-Case	TO-220	θ _{JC}	1.4	°C/W
	TO-251/TO-252		2.6	°C/W
	SOP-8		24	°C/W
	DFN5060-8		12	°C/W

Notes: 1. The θ_{JA} is the sum of the thermal impedance from junction to case θ_{JC} and case to ambient.

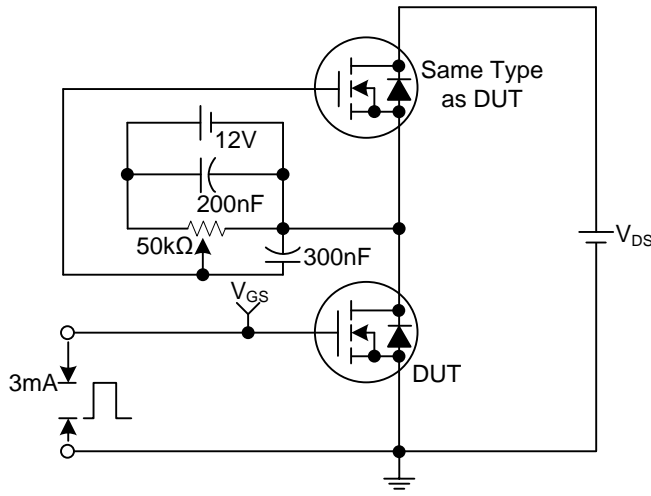
2. The value of θ_{JA} is measured with the device mounted on 1in2 FR-4 board with 2oz. Copper.

■ ELECTRICAL CHARACTERISTICS (T_J=25°C, unless otherwise noted)

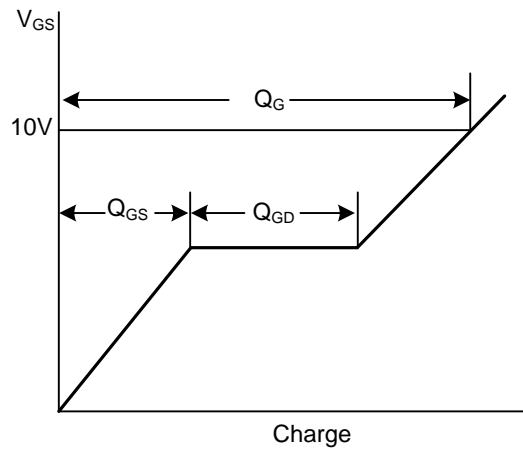
PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
OFF CHARACTERISTICS						
Drain-Source Breakdown Voltage	BV _{DSS}	I _D =250μA, V _{GS} =0V	60			V
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} =60V, V _{GS} =0V			1	μA
		V _{DS} =60V, V _{GS} =0V, T _J =55°C			5	μA
Gate-Body Leakage Current	Forward	I _{GSS}				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	1.5	2.0	2.5	V
Static Drain-Source On-State Resistance	R _{DS(ON)}	V _{GS} =10V, I _D =20A		12	15	mΩ
		V _{GS} =10V, I _D =20A, T _J =125°C		20.5	25	mΩ
		V _{GS} =4.5V, I _D =18A		15	19	mΩ
DYNAMIC PARAMETERS						
Input Capacitance	C _{ISS}	V _{GS} =0V, V _{DS} =30V, f=1.0MHz		2800		pF
Output Capacitance	C _{OSS}			190		pF
Reverse Transfer Capacitance	C _{RSS}			140		pF
Gate Resistance	R _G	f=1.0MHz		2.4		Ω
SWITCHING PARAMETERS						
Total Gate Charge	Q _G	V _{GS} =10V, V _{DS} =30V, I _D =20A		62		nC
Gate to Source Charge	Q _{GS}			8		nC
Gate to Drain Charge	Q _{GD}			10		nC
Turn-ON Delay Time	t _{D(ON)}	V _{GS} =10V, V _{DS} =30V, R _L =1.5Ω, R _{GEN} =3Ω		12		ns
Rise Time	t _R			16		ns
Turn-OFF Delay Time	t _{D(OFF)}			52		ns
Fall-Time	t _F			22		ns
SOURCE- DRAIN DIODE RATINGS AND CHARACTERISTICS						
Maximum Body-Diode Continuous Current	I _S				30	A
Drain-Source Diode Forward Voltage (Note2)	V _{SD}	I _S =1A, V _{GS} =0V	0.72	1		V

- Notes: 1. Pulse width limited by T_{J(MAX)}
 2. Pulse width ≤ 300us, duty cycle ≤ 2%.
 3. Surface Mounted on 1in² pad area.

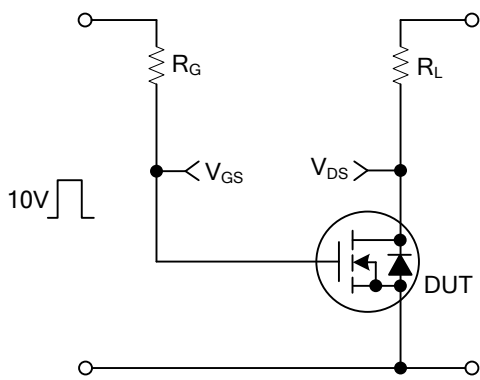
■ TEST CIRCUITS AND WAVEFORMS



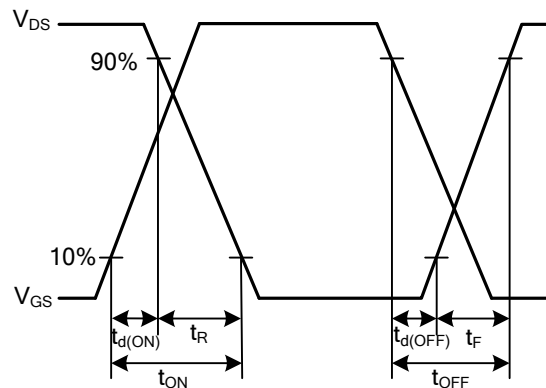
Gate Charge Test Circuit



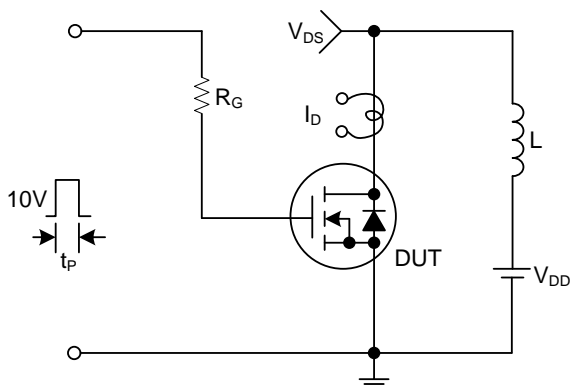
Gate Charge Waveforms



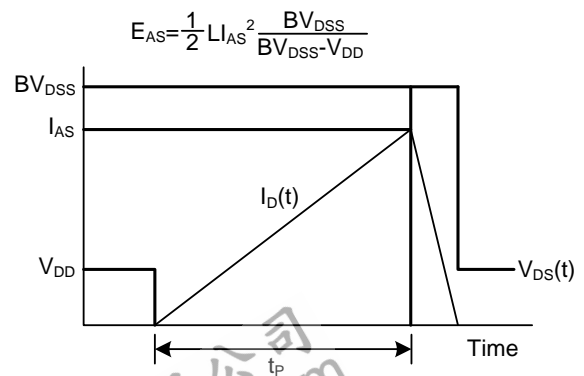
Resistive Switching Test Circuit



Resistive Switching Waveforms

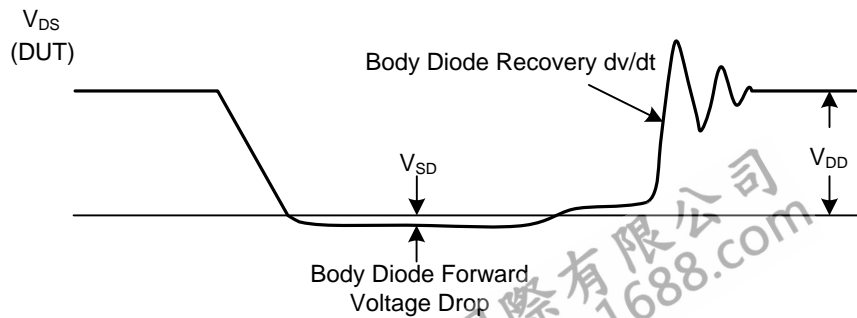
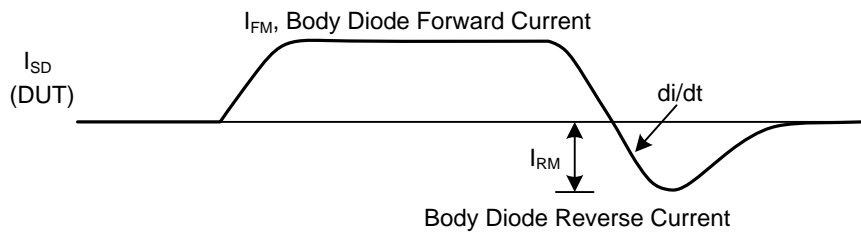
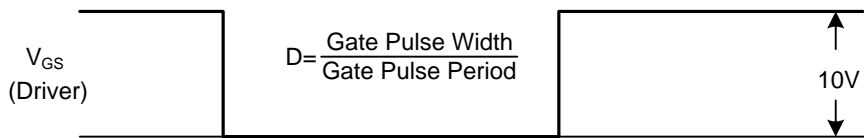
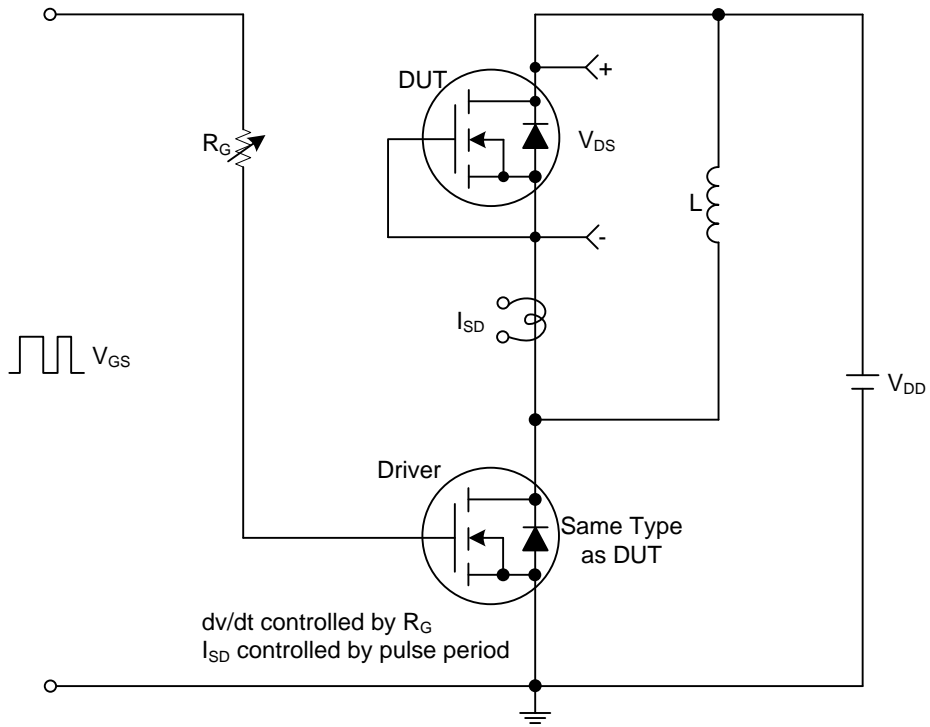


Unclamped Inductive Switching Test Circuit



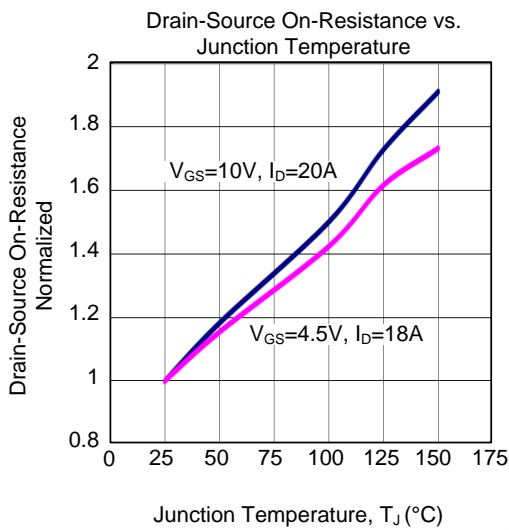
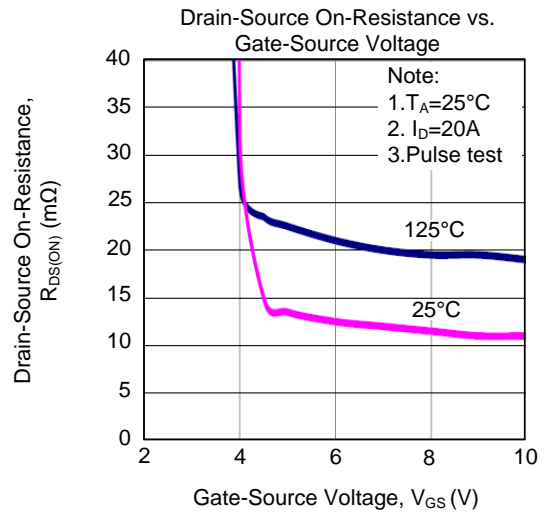
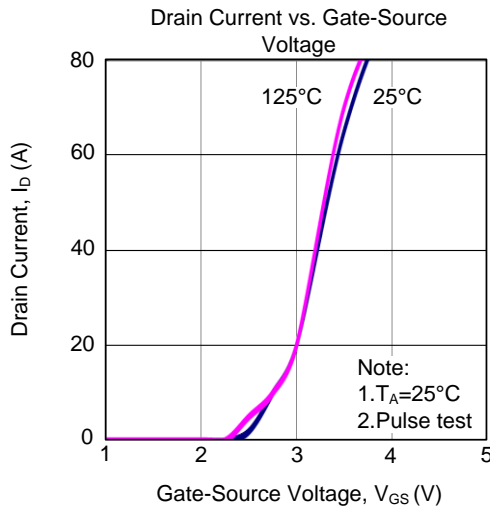
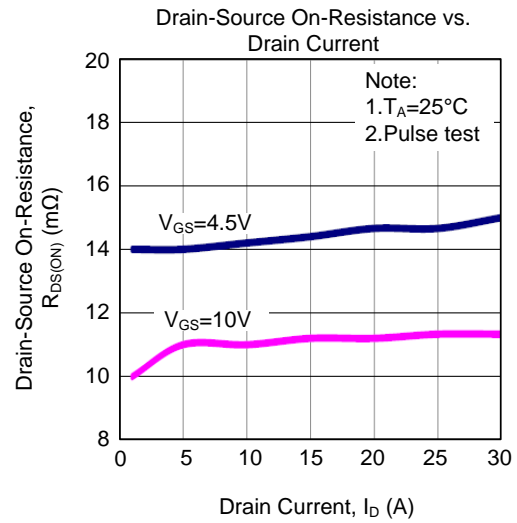
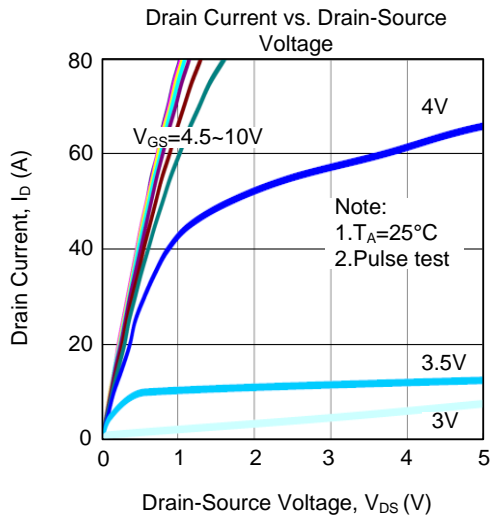
Unclamped Inductive Switching Waveforms

■ 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.