



UTT26N03-H

Power MOSFET

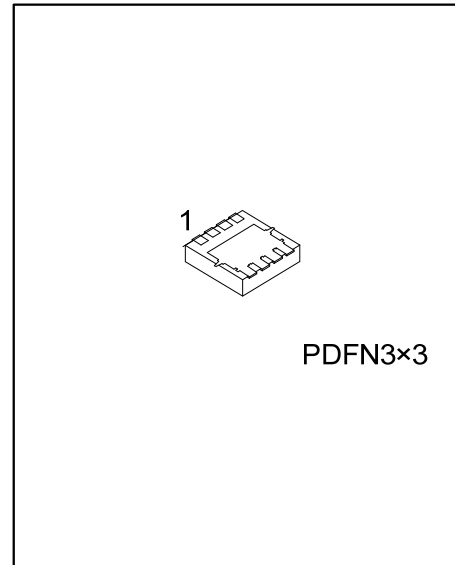
**26A, 30V N-CHANNEL
POWER MOSFET**

■ DESCRIPTION

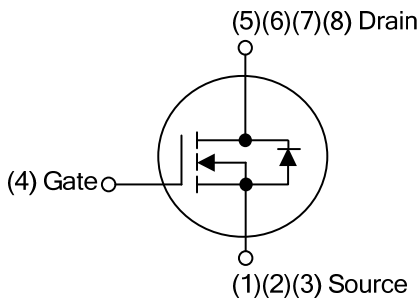
The UTC **UTT26N03-H** is a N-channel power MOSFET using UTC's advanced technology to provide the customers with high switching speed and a minimum on-state resistance. It can also withstand high energy in the avalanche.

■ FEATURES

- * $R_{DS(ON)} \leq 12 \text{ m}\Omega @ V_{GS}=10\text{V}, I_D=10\text{A}$
- $R_{DS(ON)} \leq 18 \text{ m}\Omega @ V_{GS}=4.5\text{V}, I_D=10\text{A}$
- * Improved dv/dt capability
- * Fast switching
- * Green device available



■ SYMBOL



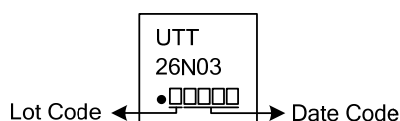
■ ORDERING INFORMATION

Ordering Number		Package	Pin Assignment								Packing
Lead Free	Halogen Free		1	2	3	4	5	6	7	8	
UTT26N03L-P3030-R	UTT26N03G-P3030-R	PDFN3x3	S	S	S	G	D	D	D	D	Tube

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

<p>UTT26N03G-P3030-R</p> <p>(1) Packing Type (2) Package Type (3) Green Package</p>	<p>(1) R: Tape Reel (2) P3030: PDFN3x3 (3) G: Halogen Free and Lead Free, K: Lead Free</p>
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■ MARKING



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

PARAMETER			SYMBOL	RATINGS	UNIT
Drain-Source Voltage			V_{DSS}	30	V
Gate-Source Voltage			V_{GSS}	± 12	V
Continuous Drain Current	Continuous	$T_C=25^{\circ}\text{C}$	I_D	26	A
Pulsed Drain Current	Pulsed (Note 2)		I_{DM}	104	A
Avalanche Energy, Single Pulsed (Note 3)			E_{AS}	16	mJ
Peak Diode Recovery dv/dt (Note4)			dv/dt	1.5	V/ns
Power Dissipation			P_D	35	W
Junction Temperature			T_J	+150	$^{\circ}\text{C}$
Storage Temperature Range			T_{STG}	-55 ~ +150	$^{\circ}\text{C}$

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. $L=0.1\text{mH}$, $I_{AS}=18\text{A}$, $V_{DD}=25\text{V}$, $R_G=25\ \Omega$, Starting $T_J=25^{\circ}\text{C}$

4. $I_{SD} \leq 26\text{A}$, $di/dt \leq 200\text{A}/\mu\text{s}$, $V_{DD} \leq BV_{DSS}$, Starting $T_J=25^{\circ}\text{C}$

■ THERMAL DATA

PARAMETER		SYMBOL	RATINGS	UNIT
Junction to Ambient		θ_{JA}	75	$^{\circ}\text{C}/\text{W}$
Junction to Case		θ_{JC}	3.7	$^{\circ}\text{C}/\text{W}$

Note: The data tested by surface mounted on a 1 inch² FR-4 board with 2OZ copper.

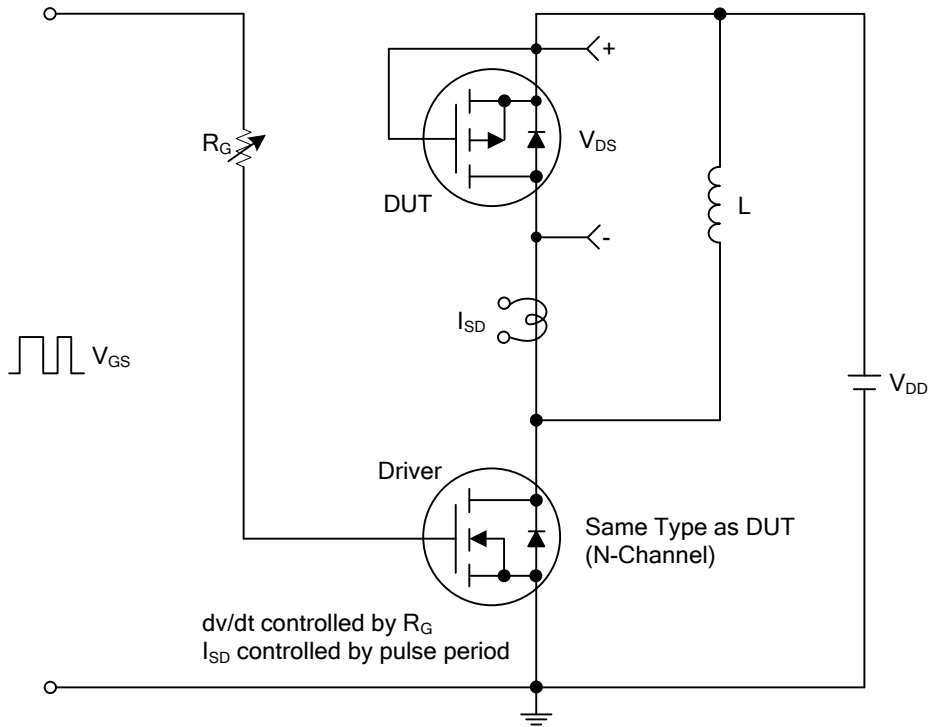
■ ELECTRICAL CHARACTERISTICS ($T_J=25^{\circ}\text{C}$, unless otherwise specified)

PARAMETER		SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
OFF CHARACTERISTICS							
Drain-Source Breakdown Voltage		BV_{DSS}	$V_{GS}=0\text{V}$, $I_D=250\mu\text{A}$	30			V
Drain-Source Leakage Current		I_{DSS}	$V_{DS}=30\text{V}$, $V_{GS}=0\text{V}$			1	μA
Gate-Source Leakage Current	Forward	I_{GSS}	$V_{DS}=0\text{V}$, $V_{GS}=+12\text{V}$			+100	nA
	Reverse		$V_{DS}=0\text{V}$, $V_{GS}=-12\text{V}$			-100	nA
ON CHARACTERISTICS							
Gate Threshold Voltage		$V_{GS(TH)}$	$V_{DS}=V_{GS}$, $I_D=250\mu\text{A}$	1.0		2.5	V
Drain-Source On-State Resistance		$R_{DS(ON)}$	$V_{GS}=10\text{V}$, $I_D=10\text{A}$			12	m Ω
			$V_{GS}=4.5\text{V}$, $I_D=10\text{A}$			18	m Ω
DYNAMIC PARAMETERS							
Input Capacitance		C_{ISS}	$V_{DS}=15\text{V}$, $V_{GS}=0\text{V}$, $f=1.0\text{MHz}$		750		pF
Output Capacitance		C_{OSS}			130		pF
Reverse Transfer Capacitance		C_{RSS}			95		pF
SWITCHING PARAMETERS							
Total Gate Charge (Note 1)		Q_G	$V_{DS}=24\text{V}$, $V_{GS}=10\text{V}$, $I_D=26\text{A}$ $I_G=1\text{mA}$ (Note 1, 2)		16		nC
Gate to Source Charge		Q_{GS}			8.8		nC
Gate to Drain Charge		Q_{GD}			1.6		nC
Turn-on Delay Time (Note 1)		$t_{D(ON)}$	$V_{DD}=15\text{V}$, $V_{GS}=10\text{V}$, $I_D=0.5\text{A}$, $R_G=25\Omega$ (Note 1, 2)		12		ns
Rise Time		t_R			5.2		ns
Turn-off Delay Time		$t_{D(OFF)}$			54		ns
Fall-Time		t_F			38		ns
SOURCE- DRAIN DIODE RATINGS AND CHARACTERISTICS							
Maximum Body-Diode Pulsed Current		I_S				26	A
Drain-Source Diode Forward Voltage (Note 1)		I_{SM}				104	A
Maximum Body-Diode Continuous Current		V_{SD}	$I_S=1.0\text{A}$, $V_{GS}=0\text{V}$			1.0	V
Reverse Recovery Time		t_{rr}	$V_{GS}=0\text{V}$, $I_S=26\text{A}$			250	ns
Reverse Recovery Charge		Q_{rr}	$dI_F/dt=100\text{A}/\mu\text{s}$			0.33	μC

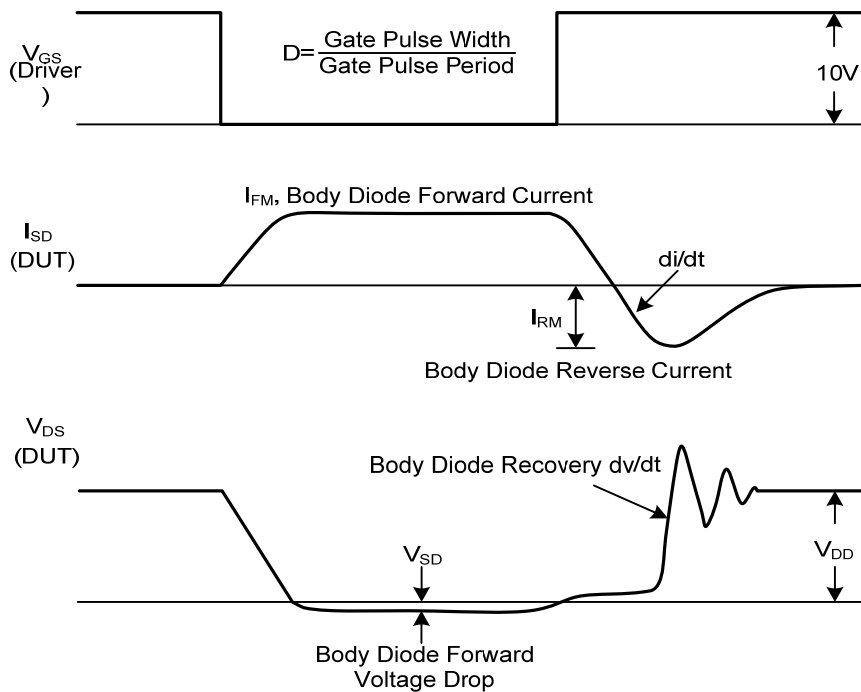
Note: 1. Pulse Test : Pulse width $\leq 300\mu\text{s}$, Duty cycle $\leq 2\%$.

2. Essentially independent of operating temperature.

■ TEST CIRCUITS AND WAVEFORMS

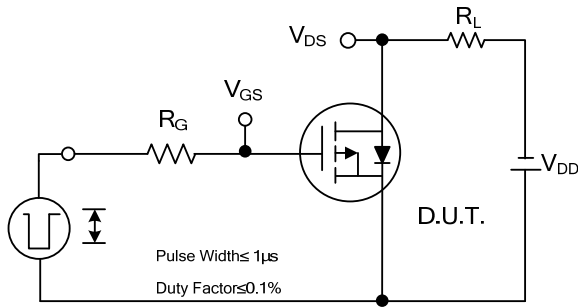


Peak Diode Recovery dv/dt Test Circuit

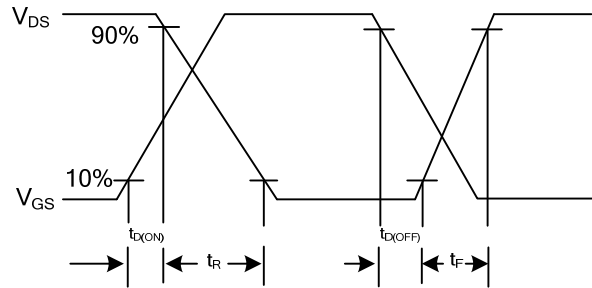


Peak Diode Recovery dv/dt Waveforms

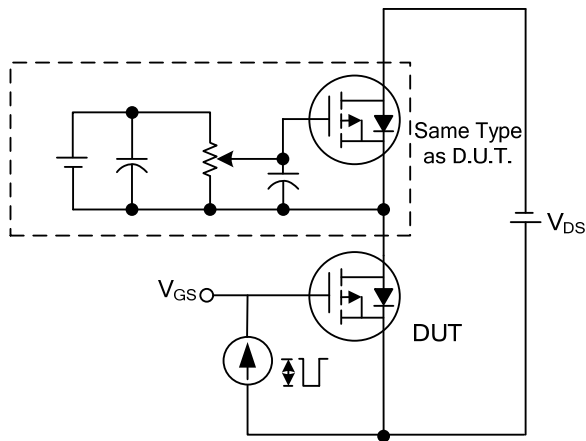
TEST CIRCUITS AND WAVEFORMS



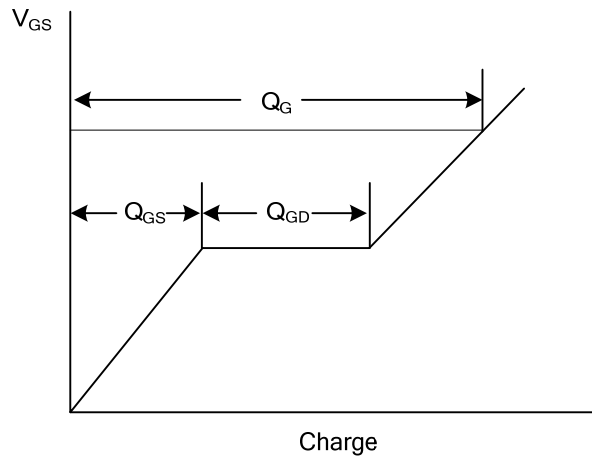
Switching Test Circuit



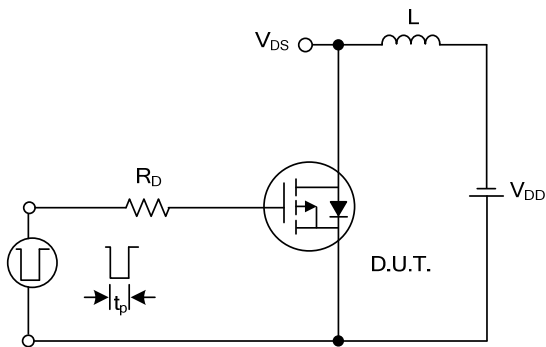
Switching Waveforms



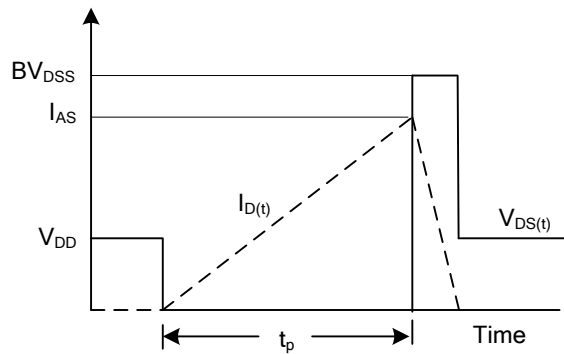
Gate Charge Test Circuit



Gate Charge Waveform

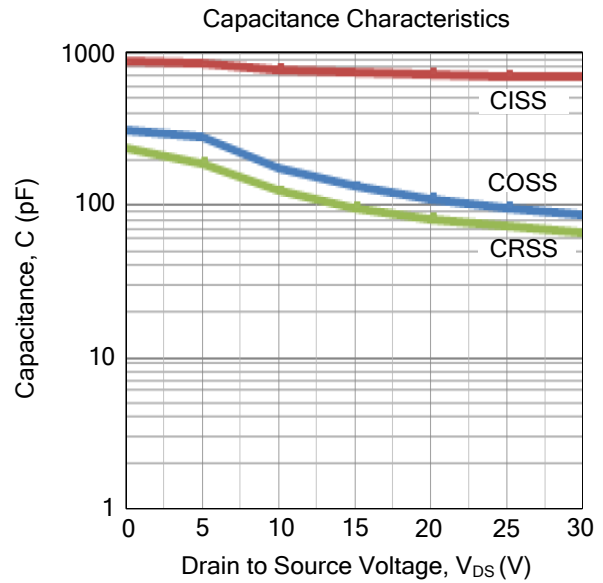
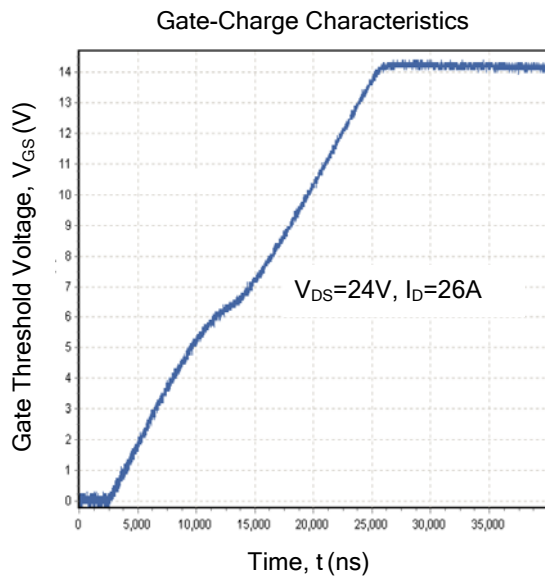


Unclamped Inductive Switching Test Circuit



Unclamped Inductive Switching Waveforms

TYPICAL CHARACTERISTICS



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