



UTT26N03-H

Power MOSFET

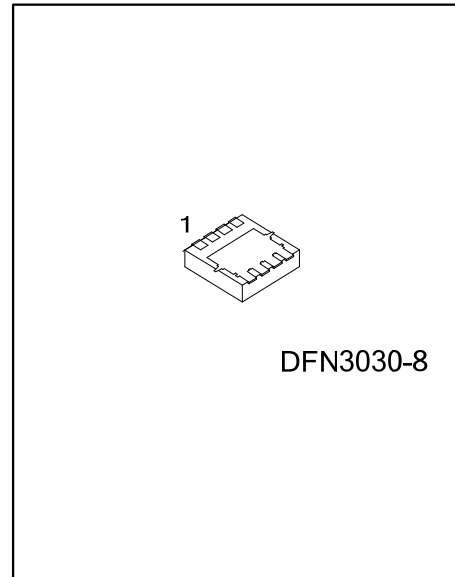
26A, 30V N-CHANNEL POWER MOSFET

DESCRIPTION

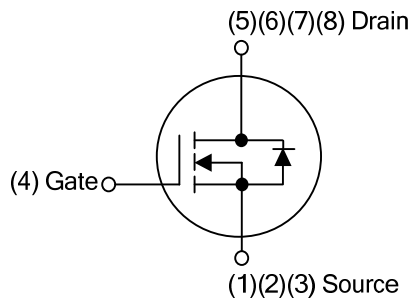
The UTC **UTT26N03-H** is a N-channel power MOSFET using UTC's advanced technology to provide the customers with high switching speed and a minimum on-state resistance. It can also withstand high energy in the avalanche.

FEATURES

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



SYMBOL



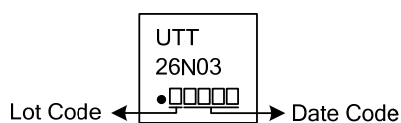
ORDERING INFORMATION

Ordering Number		Package	Pin Assignment								Packing
Lead Free	Halogen Free		1	2	3	4	5	6	7	8	
UTT26N03L-K08-3030-R	UTT26N03G-K08-3030-R	DFN3030-8	S	S	S	G	D	D	D	D	Tube

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

UTT26N03G-K08-3030-R	(1)Packing Type	(1) R: Tape Reel
	(2)Package Type	(2) K08-3030: DFN3030-8
	(3)Green Package	(3) G: Halogen Free and Lead Free, L: Lead Free

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.

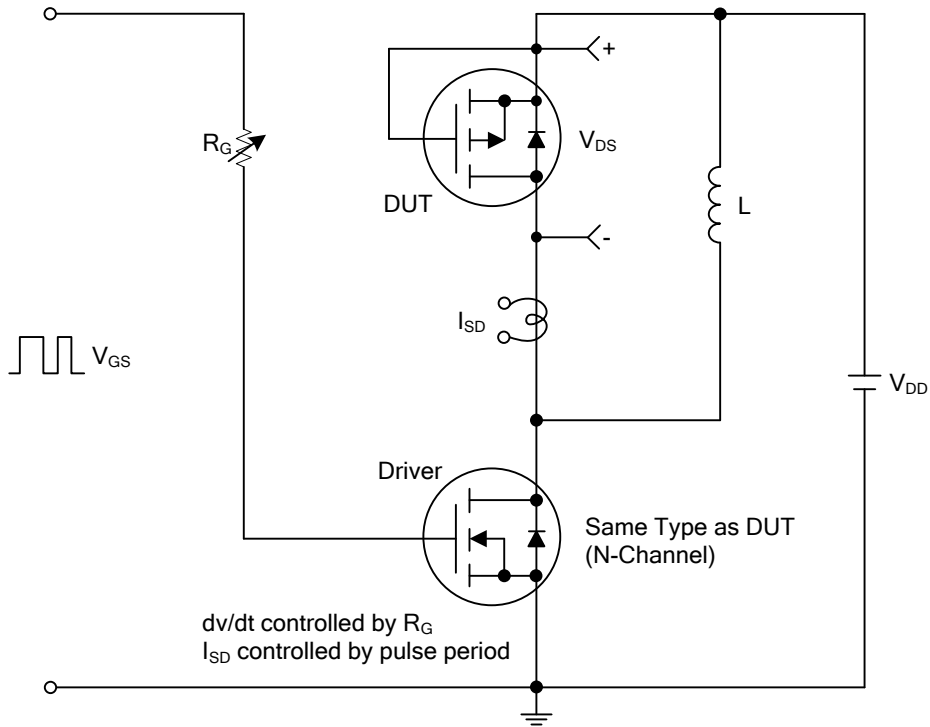
■ ELECTRICAL CHARACTERISTICS ($T_J=25^{\circ}\text{C}$, unless otherwise specified)

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	I_{GSS}	Forward $V_{DS}=0\text{V}$, $V_{GS}=+12\text{V}$			+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	$I_S=1.0\text{A}$, $V_{GS}=0\text{V}$ $di/dt=100\text{A}/\mu\text{s}$			26	A
Drain-Source Diode Forward Voltage (Note 1)	I_{SM}				104	A
Maximum Body-Diode Continuous Current	V_{SD}				1.0	V
Reverse Recovery Time	t_{rr}			250		nS
Reverse Recovery Charge	Q_{rr}			0.33		μC

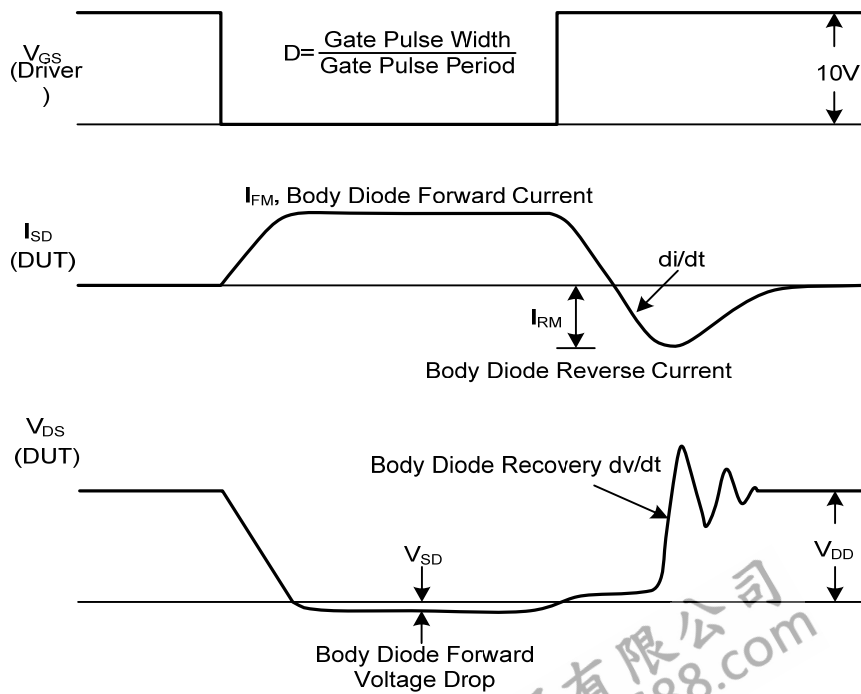
Note: 1. Pulse Test : Pulse width $\leq 300\mu\text{s}$, Duty cycle $\leq 2\%$.

2. Essentially independent of operating temperature.

■ TEST CIRCUITS AND WAVEFORMS

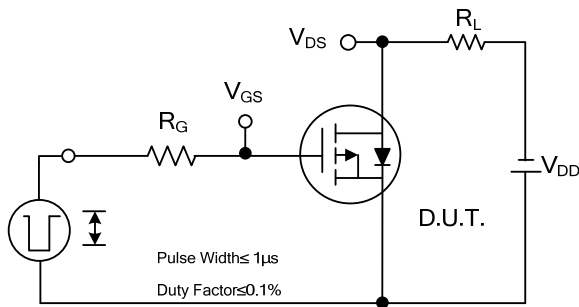


Peak Diode Recovery dv/dt Test Circuit

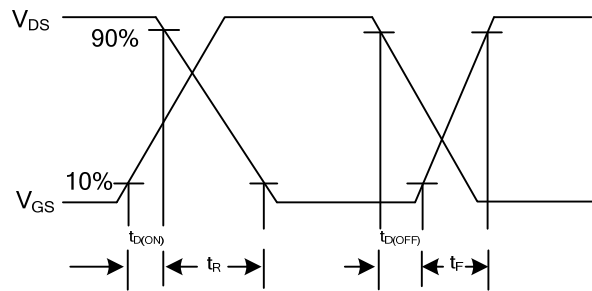


Peak Diode Recovery dv/dt Waveforms

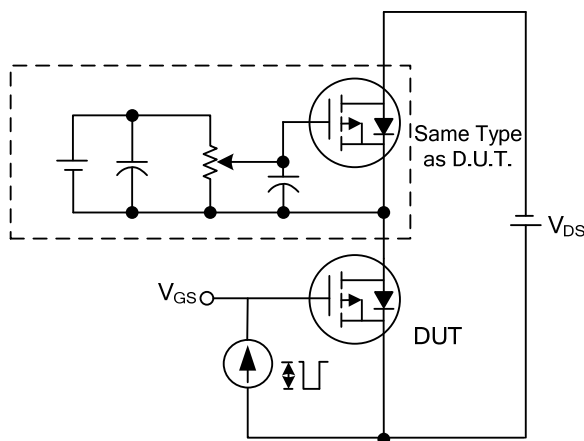
TEST CIRCUITS AND WAVEFORMS



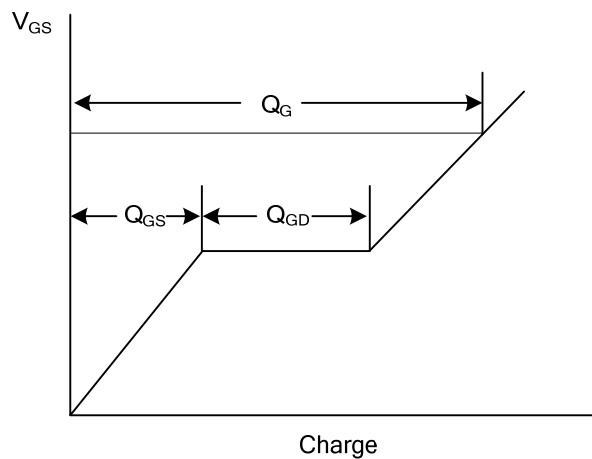
Switching Test Circuit



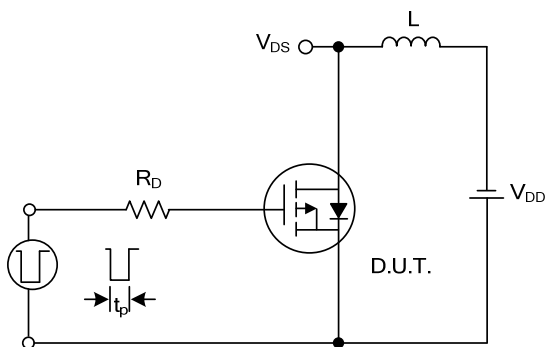
Switching Waveforms



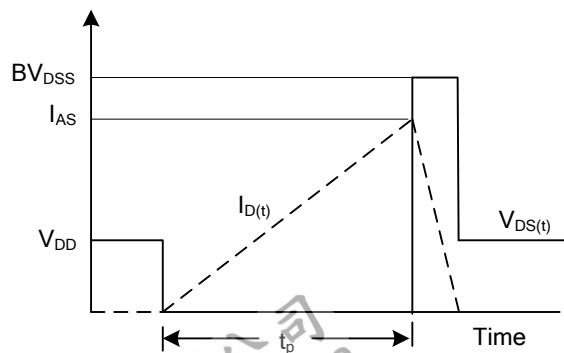
Gate Charge Test Circuit



Gate Charge Waveform

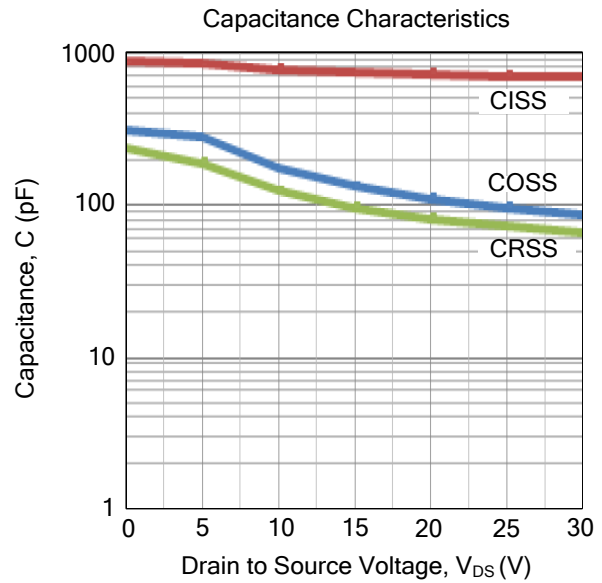
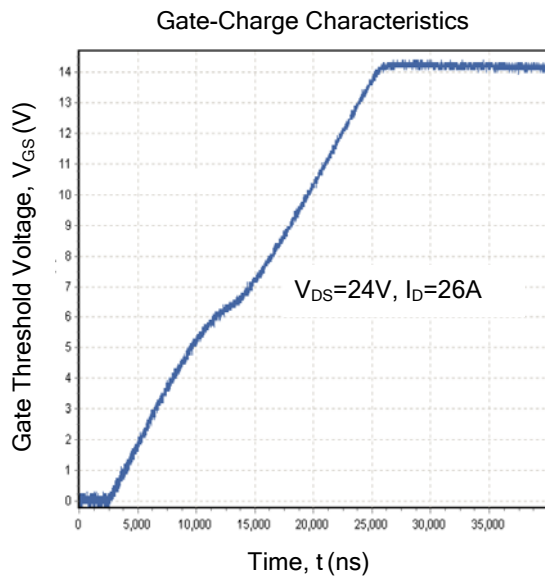


Unclamped Inductive Switching Test Circuit



Unclamped Inductive Switching Waveforms

TYPICAL CHARACTERISTICS



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