



UTT15N03

Power MOSFET

15A, 30V N-CHANNEL ENHANCEMENT MODE

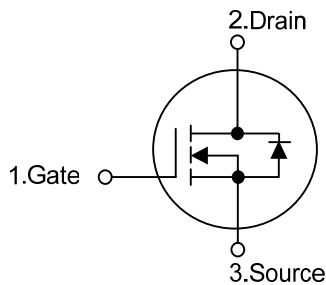
DESCRIPTION

The **UTT15N03** uses UTC's advanced trench technology to provide excellent $R_{DS(ON)}$, low gate charge and operation with low gate voltages. This device is suitable for use as a load switch or in PWM applications.

FEATURES

- * $R_{DS(ON)} < 12 \text{ m}\Omega$ @ $V_{GS}=10\text{V}$, $I_D=15\text{A}$
- * Low capacitance
- * Low gate charge
- * Fast switching capability
- * Avalanche energy specified

SYMBOL

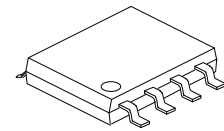


ORDERING INFORMATION

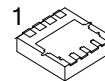
Ordering Number		Package	Pin Assignment								Packing
Lead Free	Halogen Free		1	2	3	4	5	6	7	8	
UTT15N03L-S08-R	UTT15N03G-S08-R	SOP-8	S	S	S	G	D	D	D	D	Tape Reel
UTT15N03L-K08-3030-R	UTT15N03G-K08-3030-R	DFN3030-8	S	S	S	G	D	D	D	D	Tape Reel

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

UTT15N03G-S08-R		(1) Packing Type	(1) R: Tape Reel
		(2) Package Type	(2) S08: SOP-8, K08-3030: DFN3030-8
		(3) Green Package	(3) G: Halogen Free and Lead Free, L: Lead Free

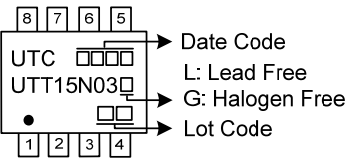
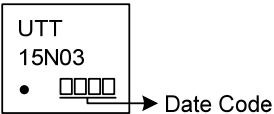


SOP-8



DFN3030-8

■ MARKING

SOP-8	DFN3030-8
 UTC □□□□ → Date Code UTT15N03 □ → L: Lead Free • □□ → G: Halogen Free □□ → Lot Code	 UTT 15N03 • □□□□ → Date Code

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

PARAMETER		SYMBOL	RATINGS	UNIT
Drain-Source Voltage		V _{DSS}	30	V
Gate-Source Voltage		V _{GSS}	±20	V
Continuous Drain Current		I _D	15	A
Pulsed Drain Current		I _{DM}	40	A
Avalanche Current		I _{AR}	20	A
Repetitive avalanche energy L=0.1mH		E _{AR}	50	mJ
Power Dissipation	SOP-8	P _D	1.6	W
	DFN3030-8		2.0	W
Junction Temperature		T _J	+150	°C
Storage Temperature		T _{STG}	-55 ~ +150	°C

Note: 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.

■ THERMAL DATA

PARAMETER		SYMBOL	RATINGS	UNIT
Junction-to-Ambient	SOP-8	θ _{JA}	78	°C/W
	DFN3030-8		62.5	°C/W

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

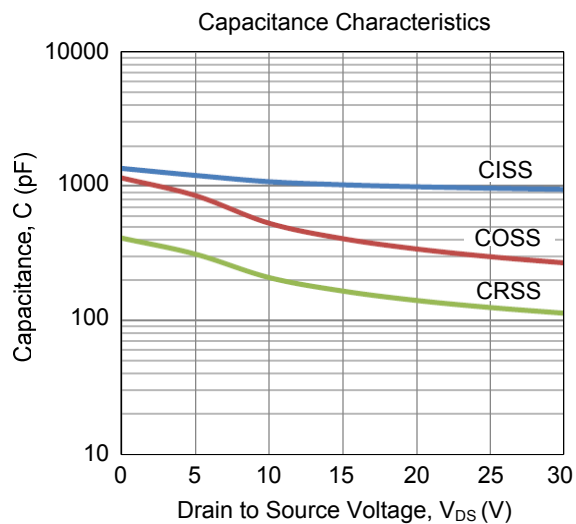
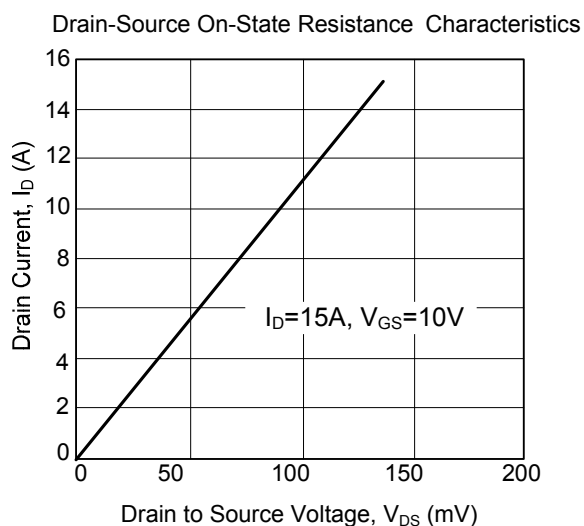
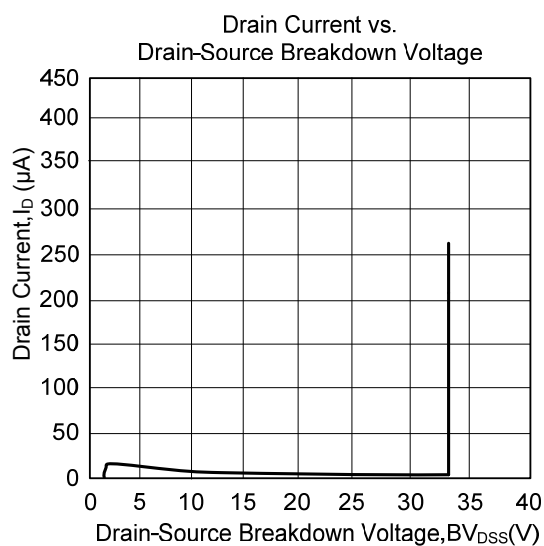
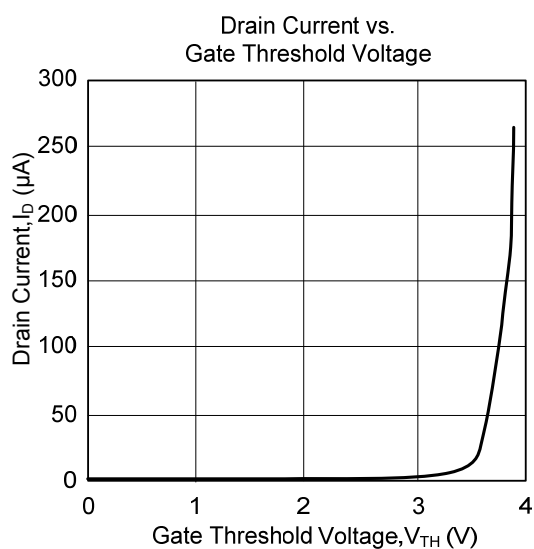
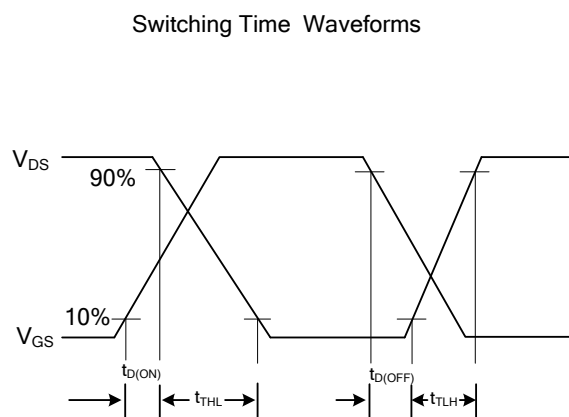
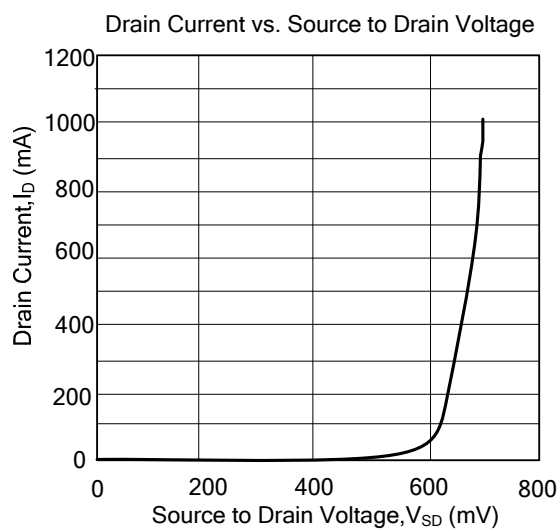
■ ELECTRICAL CHARACTERISTICS (T_J=25°C, unless otherwise specified)

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
OFF CHARACTERISTICS						
Drain-Source Breakdown Voltage	BV _{DSS}	V _{GS} =0V, I _D =250μA	30			V
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} =24V, V _{GS} =0V			1	μA
Gate-Body Leakage Current	I _{GSS}	V _{DS} =0V, V _{GS} =±20V			100	nA
ON CHARACTERISTICS						
Gate Threshold Voltage	V _{GS(TH)}	V _{DS} =V _{GS} , I _D =250μA	1.0		3.0	V
On State Drain Current	I _{D(ON)}	V _{DS} =5V, V _{GS} =10V	40			A
Static Drain-Source On-Resistance	R _{DS(ON)}	V _{GS} =10V, I _D =15A			12	mΩ
DYNAMIC PARAMETERS						
Input Capacitance	C _{ISS}	V _{DS} =15V, V _{GS} =0V, f=1MHz		1024		pF
Output Capacitance	C _{OSS}			400		pF
Reverse Transfer Capacitance	C _{RSS}			165		pF
SWITCHING PARAMETERS						
Total Gate Charge	Q _G	V _{DS} =15V, V _{GS} =10V, I _D =1A		130		nC
Gate Source Charge	Q _{GS}			23		nC
Gate Drain Charge	Q _{GD}			82		nC
Turn-ON Delay Time	t _{D(ON)}	V _{GS} =10V, V _{DS} =15V, R _L =15Ω, R _G =3Ω		68		ns
Turn-ON Rise Time	t _R			104		ns
Turn-OFF Delay Time	t _{D(OFF)}			344		ns
Turn-OFF Fall-Time	t _F			221		ns
SOURCE- DRAIN DIODE RATINGS AND CHARACTERISTICS						
Maximum Body-Diode Continuous Current	I _S				4	A
Diode Forward Voltage	V _{SD}	I _S =1A, V _{GS} =0V		0.71	1	V
Body Diode Reverse Recovery Time	t _{rr}	I _F =15A, dI/dt=100A/μs		210		ns
Body Diode Reverse Recovery Charge	Q _{rr}	I _F =15A, dI/dt=100A/μs		0.58		μC

Notes: 1. The data tested by pulsed, pulse width≤300μs, duty cycle≤2%.

2. The power dissipation is limited by 150°C junction temperature.

■ TYPICAL CHARACTERISTICS



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