

**UT4446-H**

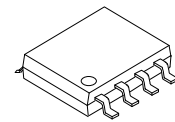
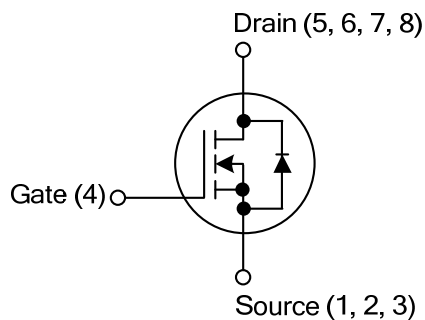
Preliminary

*Power MOSFET***15A, 30V N-CHANNEL
ENHANCEMENT MODE****DESCRIPTION**

The **UT4446-H** 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

- * $R_{DS(ON)} < 13m\Omega$ @ $V_{GS}=10V$, $I_D=15A$
- * $R_{DS(ON)} < 18m\Omega$ @ $V_{GS}=4.5V$, $I_D=11A$
- * Low capacitance
- * Low gate charge
- * Fast switching capability
- * Avalanche energy specified

SYMBOL

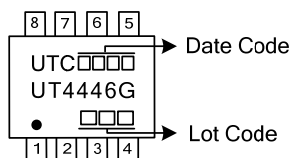
SOP-8

ORDERING INFORMATION

Ordering Number	Package	Pin Assignment								Packing
		1	2	3	4	5	6	7	8	
UT4446G-S08-R	SOP-8	S	S	S	G	D	D	D	D	Tape Reel

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

UT4446G-S08-R (1) Packing Type (2) Package Type (3) Green Package	(1) R: Tape Reel (2) S08: SOP-8 (3) G: Halogen Free and Lead Free
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MARKING

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

PARAMETER	SYMBOL	RATINGS	UNIT
Drain-Source Voltage	V_{DS}	30	V
Gate-Source Voltage	V_{GS}	± 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 $L=0.1\text{mH}$	E_{AR}	25	mJ
Power Dissipation	P_D	1.6	W
Junction Temperature	T_J	+150	$^{\circ}\text{C}$
Storage Temperature	T_{STG}	-55 ~ +150	$^{\circ}\text{C}$

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. Pulse width limited by $T_{J(MAX)}$

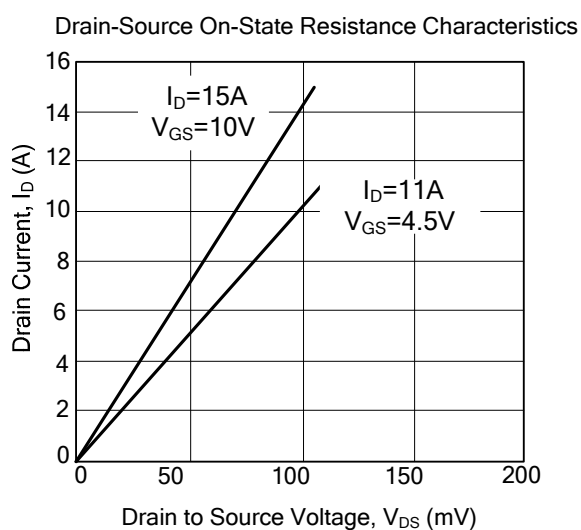
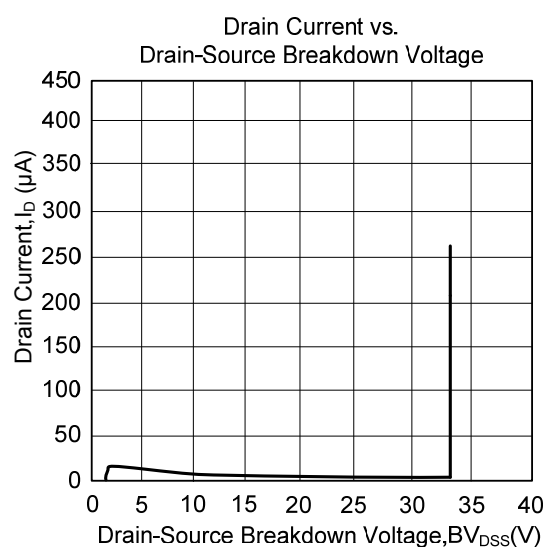
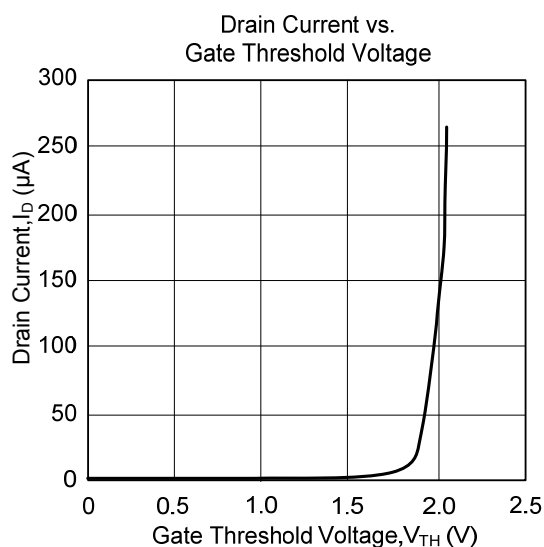
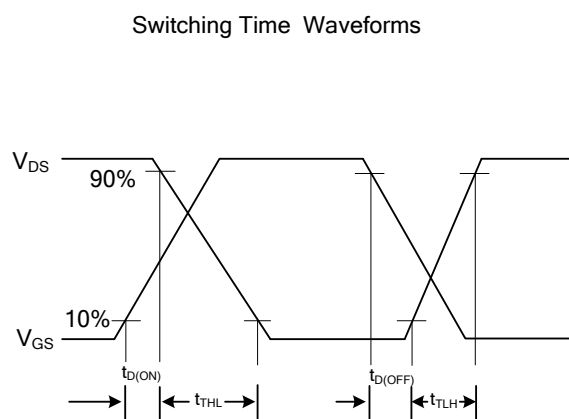
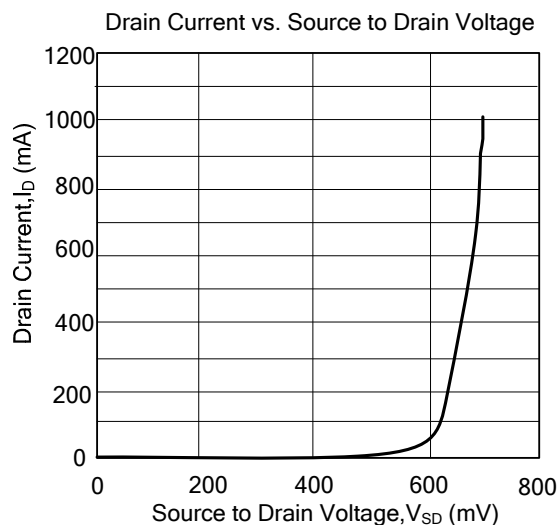
■ **THERMAL DATA**

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

■ **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} =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	2.2	3	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			13	mΩ
		V _{GS} =4.5V, I _D =11A			18	
Forward Transconductance	g _{FS}	V _{DS} =5 V, I _D =15 A		27		S
DYNAMIC PARAMETERS						
Input Capacitance	C _{ISS}	V _{DS} =25V, V _{GS} =0V, f=1MHz		800		pF
Output Capacitance	C _{OSS}			120		pF
Reverse Transfer Capacitance	C _{RSS}			60		pF
SWITCHING PARAMETERS						
Total Gate Charge	Q _G	V _{GS} =30V, V _{DS} =10V, I _D =1A, I _G =100μA		50		nC
Gate Source Charge	Q _{GS}			1.0		nC
Gate Drain Charge	Q _{GD}			5.5		nC
Turn-ON Delay Time	t _{D(ON)}	V _{GS} =10V, V _{DS} =30V, I _D =0.5A, R _G =25Ω		63		ns
Turn-ON Rise Time	t _R			61		ns
Turn-OFF Delay Time	t _{D(OFF)}			96		ns
Turn-OFF Fall-Time	t _F			48		ns
SOURCE- DRAIN DIODE RATINGS AND CHARACTERISTICS						
Diode Forward Voltage	V _{SD}	I _S =1A, V _{GS} =0V		0.71	1	V
Maximum Body-Diode Continuous Current	I _S				4	A
Body Diode Reverse Recovery Time	t _{RR}	I _F =15A, dI/dt=100A/μs		24	30	ns
Body Diode Reverse Recovery Charge	Q _{RR}	I _F =15A, dI/dt=100A/μs		19		nC

■ TYPICAL CHARACTERISTICS



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