

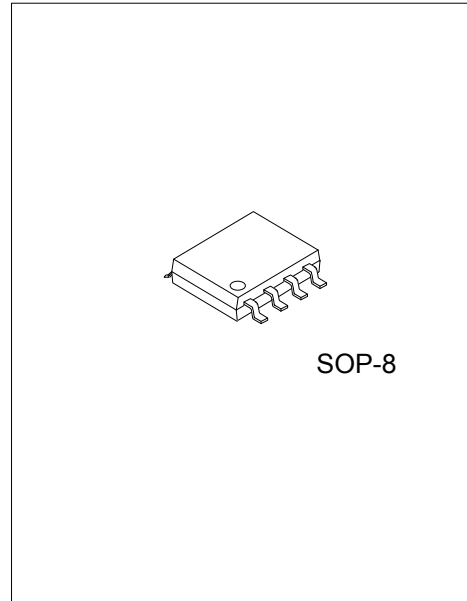


**UT4435-H**

Preliminary

*Power MOSFET*

**-8.0A, -30V P-CHANNEL  
POWER MOSFET**



■ DESCRIPTION

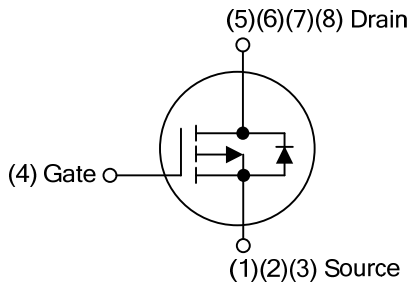
The UTC **UT4435-H** is a P-channel Power MOSFET, it uses UTC's advanced technology to provide the customers with high switching speed, low gate charge and a minimum on-state resistance.

The UTC **UT4435-H** is suitable for load switching, POL, LED applications, etc.

■ FEATURES

- \* $R_{DS(ON)} < 20m\Omega @ V_{GS}=-10V, I_D=-8A$
- $R_{DS(ON)} < 32m\Omega @ V_{GS}=-4.5V, I_D=-5A$
- \* High switching speed
- \* Low gate charge

■ SYMBOL



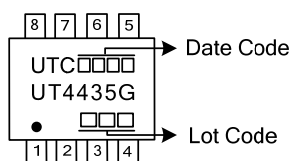
■ ORDERING INFORMATION

Ordering Number	Package	Pin Assignment								Packing
		1	2	3	4	5	6	7	8	
UT4435G-S08-R	SOP-8	S	S	S	G	D	D	D	D	Tape Reel

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

<p>UT4435G-S08-R</p> <ul style="list-style-type: none"> <li>(1)Packing Type</li> <li>(2)Package Type</li> <li>(3)Green Package</li> </ul>	<ul style="list-style-type: none"> <li>(1) R: Tape Reel</li> <li>(2) S08: SOP-8</li> <li>(3) G: Halogen Free and Lead Free</li> </ul>
---	---

■ MARKING



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

PARAMETER		SYMBOL	RATINGS	UNIT	
Drain-Source Voltage		$V_{DSS}$	-30	V	
Gate-Source Voltage		$V_{GSS}$	$\pm 20$	V	
Drain Current	Continuous	$I_D$	$T_C=25^\circ\text{C}$	-8	A
			$T_C=100^\circ\text{C}$	-5.1	A
		$I_{DM}$	-32	A	
Power Dissipation	$T_C=25^\circ\text{C}$	$P_D$	2.1	W	
	Derate above $25^\circ\text{C}$		0.017	W/ $^\circ\text{C}$	
Junction Temperature		$T_J$	-55 ~ +150	$^\circ\text{C}$	
Storage Temperature Range		$T_{STG}$	-55 ~ +150	$^\circ\text{C}$	

Note: 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.

■ THERMAL CHARACTERISTICS

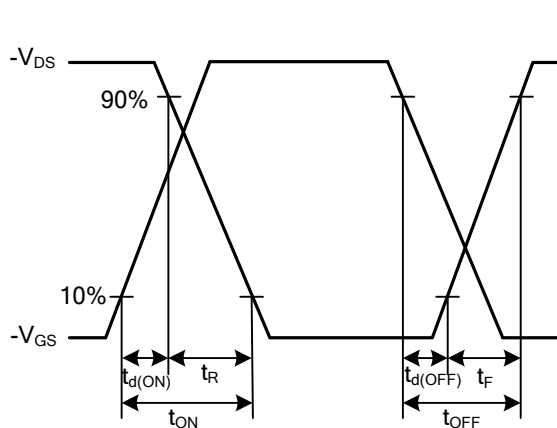
PARAMETER	SYMBOL	RATINGS	UNIT
Max. Junction to Ambient	$\theta_{JA}$	60	$^\circ\text{C}/\text{W}$

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

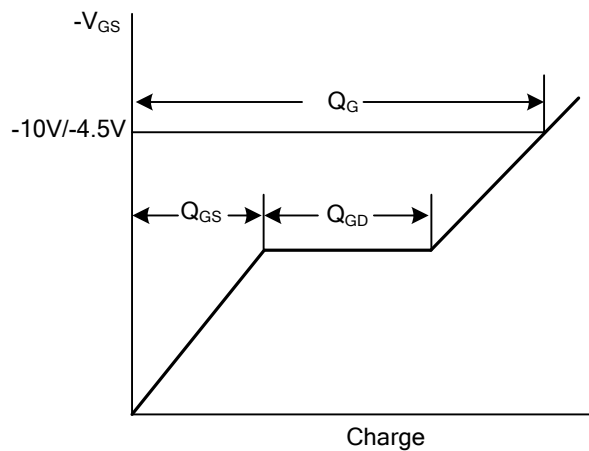
PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
<b>OFF CHARACTERISTICS</b>						
Drain-Source Breakdown Voltage	$BV_{DSS}$	$I_D=-250\mu\text{A}$ , $V_{GS}=0\text{V}$	-30			V
Breakdown Voltage Temperature Coefficient	$\Delta BV_{DSS}/\Delta T_J$	Reference to $25^\circ\text{C}$ , $I_D=-1\text{mA}$		-0.03		V/ $^\circ\text{C}$
Drain-Source Leakage Current	$I_{DSS}$	$V_{DS}=-30\text{V}$ , $V_{GS}=0\text{V}$ , $T_J=25^\circ\text{C}$			-1	$\mu\text{A}$
		$V_{DS}=-24\text{V}$ , $V_{GS}=0\text{V}$ , $T_J=125^\circ\text{C}$			-10	$\mu\text{A}$
Gate-Source Leakage Current	Forward	$I_{GSS}$	$V_{GS}=+20\text{V}$ , $V_{DS}=0\text{V}$		+100	nA
	Reverse			$V_{GS}=-20\text{V}$ , $V_{DS}=0\text{V}$		-100
<b>ON CHARACTERISTICS</b>						
Gate Threshold Voltage	$V_{GS(TH)}$	$V_{DS}=V_{GS}$ , $I_D=-250\mu\text{A}$	-1.0	-1.6	-2.5	V
$V_{GS(TH)}$ Temperature Coefficient	$\Delta V_{GS(TH)}$			4		mV/ $^\circ\text{C}$
Static Drain-Source On-State Resistance	$R_{DS(ON)}$	$V_{GS}=-10\text{V}$ , $I_D=-8\text{A}$		16.5	20	m $\Omega$
		$V_{GS}=-4.5\text{V}$ , $I_D=-5\text{A}$		25.6	32	m $\Omega$
Forward Transconductance	$g_{FS}$	$V_{DS}=-10\text{V}$ , $I_D=-3\text{A}$		6.8		S
<b>DYNAMIC PARAMETERS</b>						
Input Capacitance	$C_{ISS}$	$V_{GS}=0\text{V}$ , $V_{DS}=-15\text{V}$ , $f=1.0\text{MHz}$		1250	1820	pF
Output Capacitance	$C_{OSS}$			160	235	pF
Reverse Transfer Capacitance	$C_{RSS}$			90	130	pF
<b>SWITCHING PARAMETERS</b>						
Total Gate Charge (Note 2, 3)	$Q_G$	$V_{GS}=-4.5\text{V}$ , $V_{DS}=-15\text{V}$ , $I_D=-5\text{A}$		11	17	nC
Gate to Source Charge (Note 2, 3)	$Q_{GS}$			3.4	6	nC
Gate to Drain Charge (Note 2, 3)	$Q_{GD}$			4.2	8	nC
Turn-ON Delay Time (Note 2, 3)	$t_{D(ON)}$	$V_{DD}=-15\text{V}$ , $I_D=-1\text{A}$ , $R_G=6\Omega$ , $V_{GS}=-10\text{V}$		5.8	11	ns
Rise Time (Note 2, 3)	$t_R$			18.8	36	ns
Turn-OFF Delay Time (Note 2, 3)	$t_{D(OFF)}$			46.9	89	ns
Fall-Time (Note 2, 3)	$t_F$			12.3	23	ns
<b>SOURCE- DRAIN DIODE RATINGS AND CHARACTERISTICS</b>						
Maximum Body-Diode Continuous Current	$I_S$	$V_G=V_D=0\text{V}$ , force current			-8	A
Maximum Body-Diode Pulsed Current	$I_{SM}$				-16	A
Drain-Source Diode Forward Voltage	$V_{SD}$	$I_S=-1\text{A}$ , $V_{GS}=0\text{V}$ , $T_J=25^\circ\text{C}$			-1	V

Notes: 1. Repetitive Rating: Pulse width limited by maximum junction temperature  
 2. The data tested by pulsed , pulse width $\leq 300\mu\text{s}$ , duty cycle  $\leq 2\%$   
 3. Essentially independent of operating temperature

■ TEST CIRCUITS AND WAVEFORMS

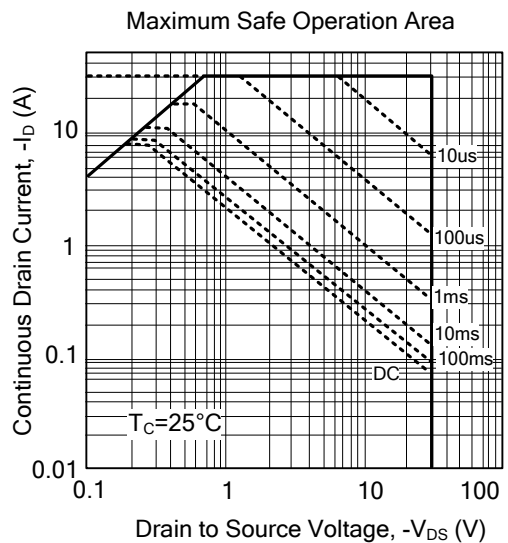
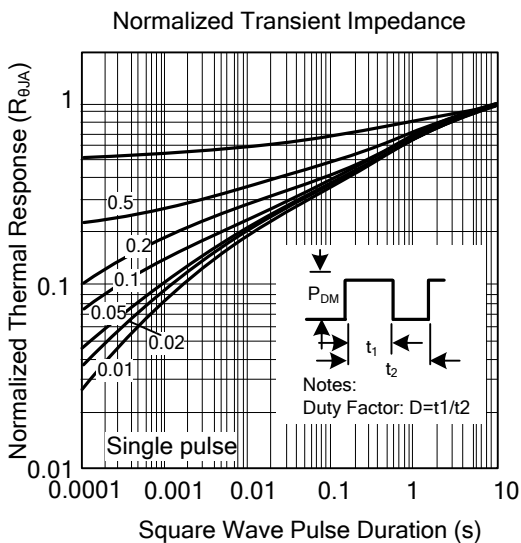
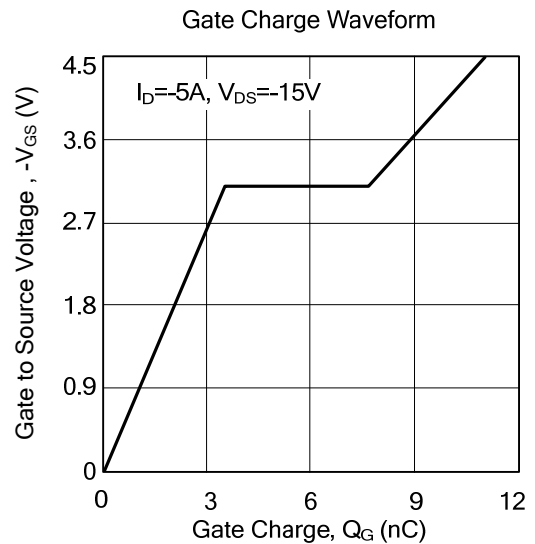
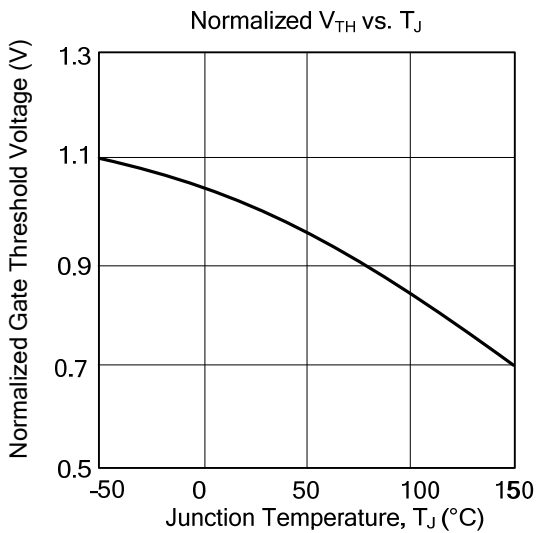
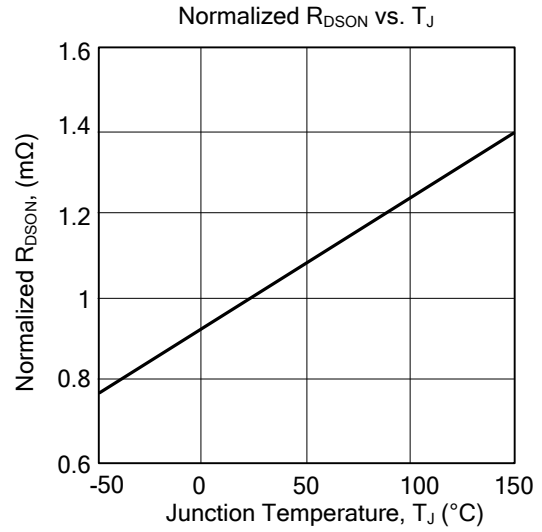
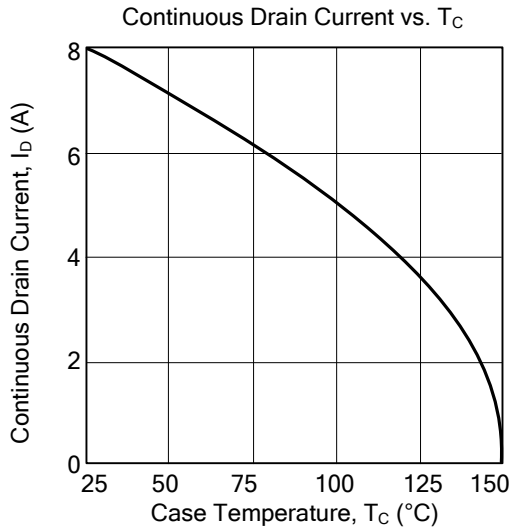


Resistive Switching Waveforms



Gate Charge 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. The information presented in this document does not form part of any quotation or contract, is believed to be accurate and reliable and may be changed without notice.