



-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

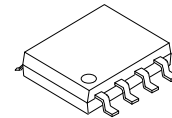
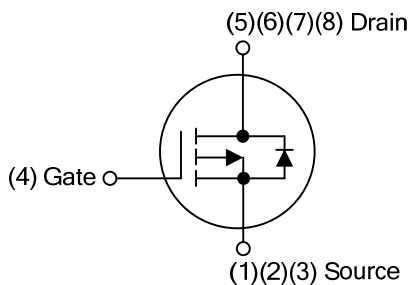
* $R_{DS(ON)} < 20m\Omega$ @ $V_{GS} = -10V$, $I_D = -8A$

$R_{DS(ON)} < 32m\Omega$ @ $V_{GS} = -4.5V$, $I_D = -5A$

* High switching speed

* Low gate charge

SYMBOL



SOP-8

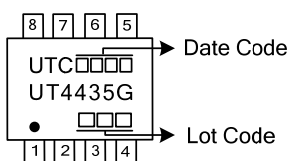
ORDERING INFORMATION

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

UT4435G-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** ($T_C=25^{\circ}\text{C}$, unless otherwise noted)

PARAMETER			SYMBOL	RATINGS	UNIT
Drain-Source Voltage			V _{DSS}	-30	V
Gate-Source Voltage			V _{GSS}	±20	V
Drain Current	Continuous	T _C =25°C	I _D	-8	A
		T _C =100°C		-5.1	A
	Pulsed (Note 1)		I _{DM}	-32	A
Power Dissipation	T _C =25°C		P _D	2.1	W
	Derate above 25°C			0.017	W/°C
Junction Temperature			T _J	-55 ~ +150	°C
Storage Temperature Range			T _{STG}	-55 ~ +150	°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	θ_{JA}	60	$^{\circ}\text{C/W}$

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

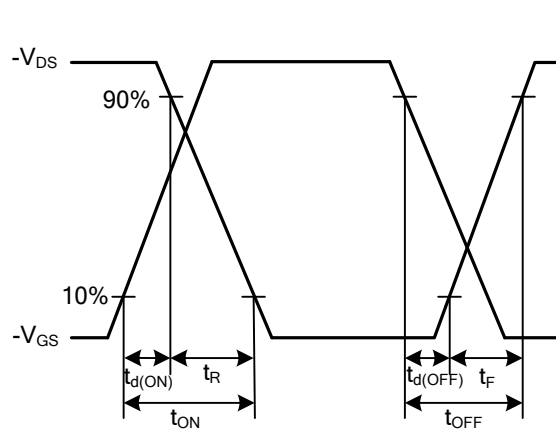
PARAMETER		SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
OFF CHARACTERISTICS							
Drain-Source Breakdown Voltage		BV_{DSS}	$I_D=-250\mu A$, $V_{GS}=0V$	-30			V
Breakdown Voltage Temperature Coefficient		$\Delta BV_{DSS}/\Delta T_J$	Reference to 25°C, $I_D=-1mA$		-0.03		V/°C
Drain-Source Leakage Current	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

Notes: 1. Repetitive Rating: Pulse width limited by maximum junction temperature

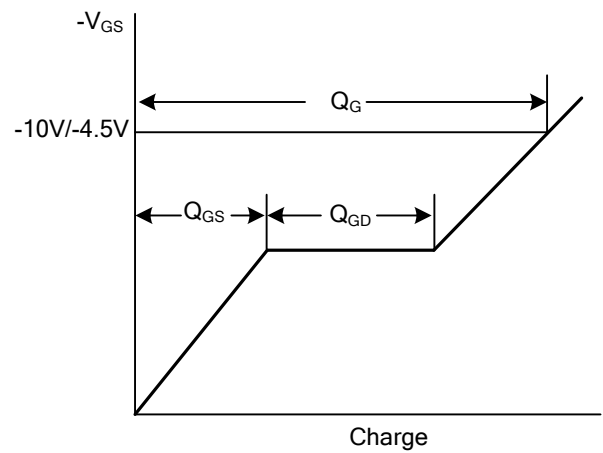
2. The data tested by pulsed , pulse width $\leq 300\mu\text{s}$, duty cycle $\leq 2\%$

3. Essentially independent of operating temperature

■ TEST CIRCUITS AND WAVEFORMS

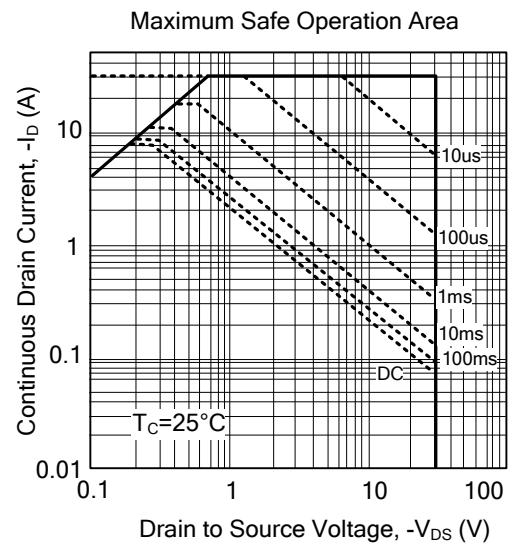
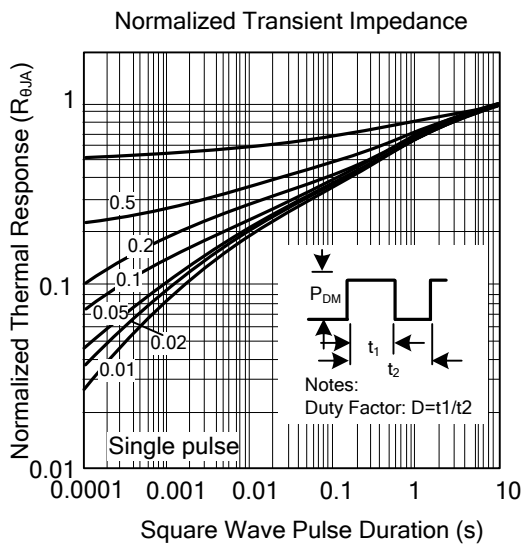
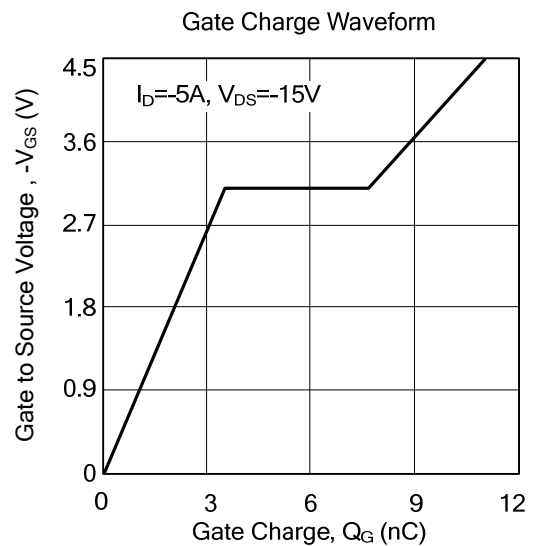
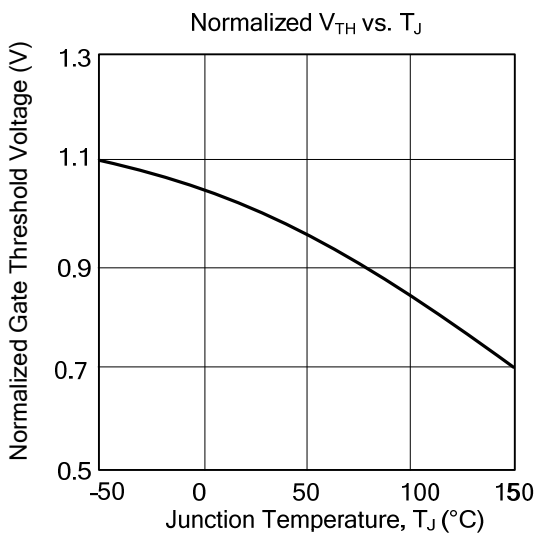
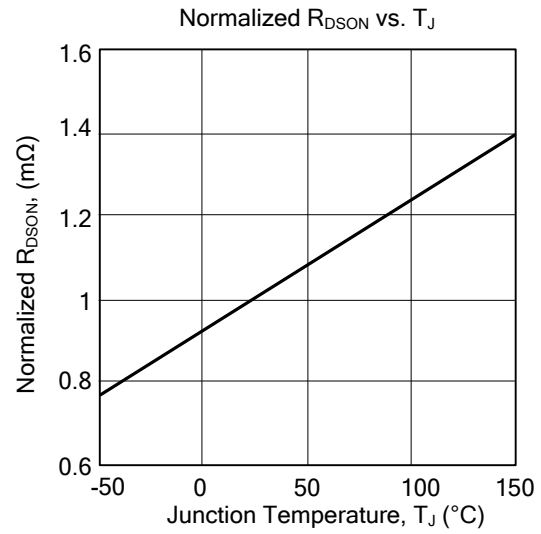
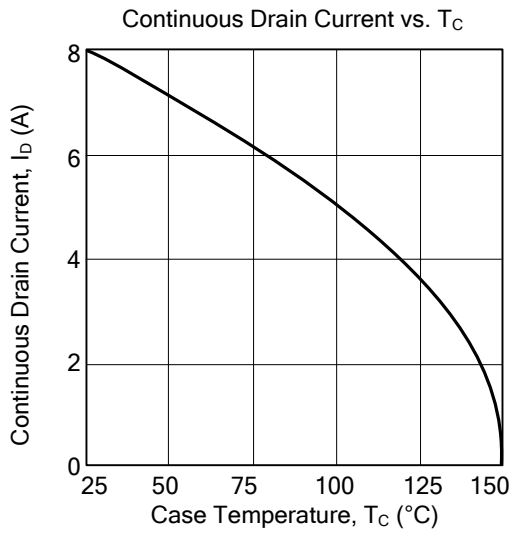


Resistive Switching Waveforms



Gate Charge Waveforms

■ TYPICAL CHARACTERISTICS



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