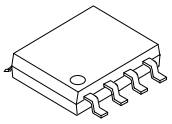
UT4435

Power MOSFET

30V P-CHANNEL POWER TRENCH MOSFET



SOP-8

Lead-free: UT4435L
Halogen-free: UT4435G

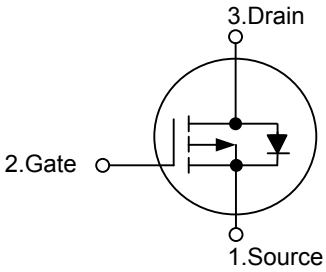
■ DESCRIPTION

The **UT4435** uses 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

* $R_{DS(ON)}$≤20mΩ @V_{GS}=-10V
* $R_{DS(ON)}$≤ 35mΩ @V_{GS}=-4.5V
* Low capacitance
* Low gate charge
* Fast switching capability
* Avalanche energy specified

■ SYMBOL

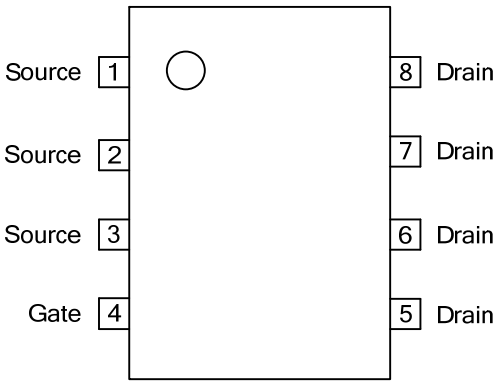


■ ORDERING INFORMATION

Ordering Number			Package	Packing
Normal	Lead Free Plating	Halogen Free		
UT4435-S08-R	UT4435L-S08-R	UT4435G-S08-R	SOP-8	Tape Reel

UT4435L-S08-R (1)Packing Type (2)Package Type (3)Lead Plating	(1) R: Tape Reel (2) S08: SOP-8 (3) G: Halogen Free, L: Lead Free, Blank: Pb/Sn

■ PIN CONFIGURATION



■ ABSOLUTE MAXIMUM RATINGS (T_a=25℃, unless otherwise specified)

PARAMETER	SYMBOL	RATINGS	UNIT
Drain-Source Voltage	V_{DSS}	-30	V
Gate-Source Voltage	V_{GSS}	±25	V
Continuous Drain Current (Note 2)	I_D	-8.8	A
Pulsed Drain Current (Note 2)	I_{DM}	-50	A
Power Dissipation	P_D	1	W
Junction Temperature	T_J	175	°C
Storage Temperature	T_{STG}	-55 ~ +175	°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	MIN	TYP	MAX	UNIT
Junction-to-Ambient	θ_{JA}		125		°C/W
Junction-to-Case	θ_{JC}		25		°C/W

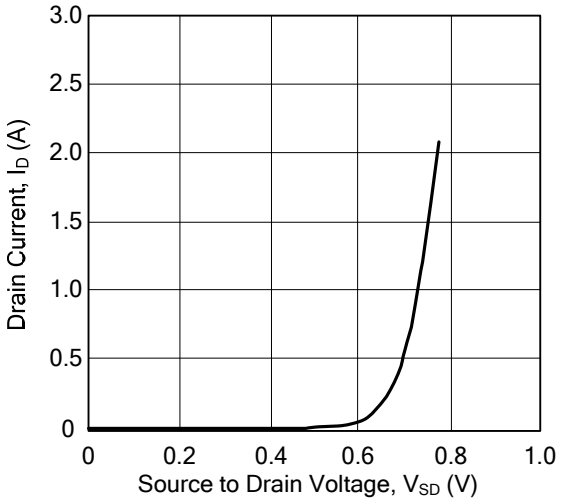
■ ELECTRICAL CHARACTERISTICS (T_a=25°C, unless otherwise specified)

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
OFF CHARACTERISTICS						
Drain-Source Breakdown Voltage	BV_{DSS}	V_{GS}=0 V, I_D=-250μA	-30			V
Drain-Source Leakage Current	I_{DSS}	V_{DS}=-24 V, V_{GS}=0V			-1	μA
Gate-Source Leakage Current	I_{GSS}	V_{GS}= ±25 V, V_{DS}=0V			±100	nA
ON CHARACTERISTICS(Note)						
Gate-Threshold Voltage	$V_{GS(TH)}$	V_{DS}=V_{GS}, I_{DS}=-250μA	-1	-1.7	-3	V
On State Drain Current	$I_{D(ON)}$	V_{GS}= -10V, V_{DS}=-5V	-50			A
Static Drain–Source On–Resistance	$R_{DS(ON)}$	V_{GS}=-10V, I_D=-8.8A		15	20	mΩ
		V_{GS}=4.5V, I_D=-6.7A		22	35	
Forward Transconductance	g_{FS}	V_{DS}=-5V, I_D=-8.8A		24		S
DYNAMIC PARAMETERS						
Input Capacitance	C_{ISS}	V_{DS}=-15V, V_{GS}=0V, f=1.0MHz		1604		pF
Output Capacitance	C_{OSS}			408		pF
Reverse Transfer Capacitance	C_{RSS}			202		pF
SWITCHING PARAMETERS(Note)						
Total Gate Charge	Q_G	V_{DS} =-15 V, V_{GS} =-5 V, I_D =-8.8 A		17	24	nC
Gate-Source Charge	Q_{GS}			5		nC
Gate-Drain Charge	Q_{GD}			6		nC
Turn-ON Delay Time	$t_{D(ON)}$	V_{DD}=-15V,I_D=-1 A,V_{GS}=-10 V R_G=6 Ω,		13	23	ns
Turn-ON Rise Time	t_R			13.5	24	ns
Turn-OFF Delay Time	$t_{D(OFF)}$			42	68	ns
Turn-OFF Fall-Time	t_F			25	40	ns
DRAIN-SOURCE DIODE CHARACTERISTICS AND MAXIMUM RATINGS						
Diode Forward Voltage(Note)	V_{SD}	I_S=-2.1A, V_{GS}=0V		-0.73	-1.2	V
Maximum Body-Diode Continuous Current	I_S				-2.1	A

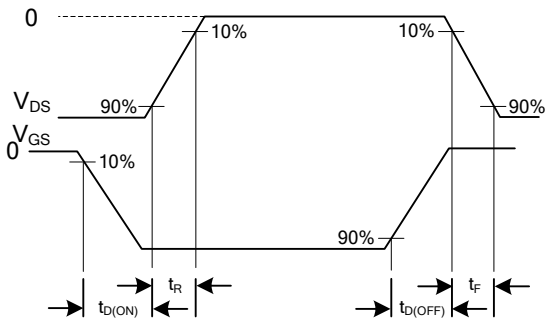
Note: Pulse Test: Pulse Width < 300ms, Duty Cycle < 2.0%

■ TYPICAL CHARACTERISTICS

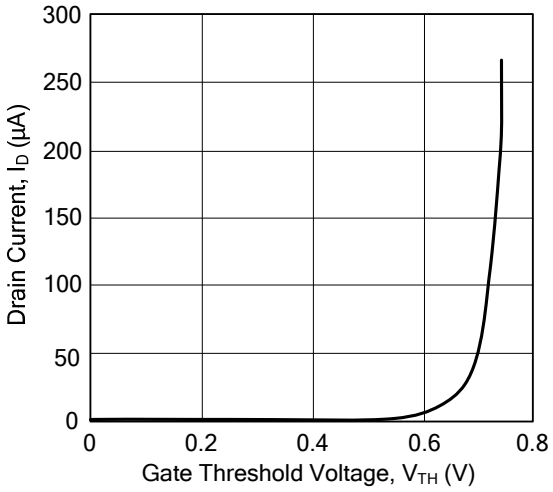
Drain Current vs. Source to Drain Voltage



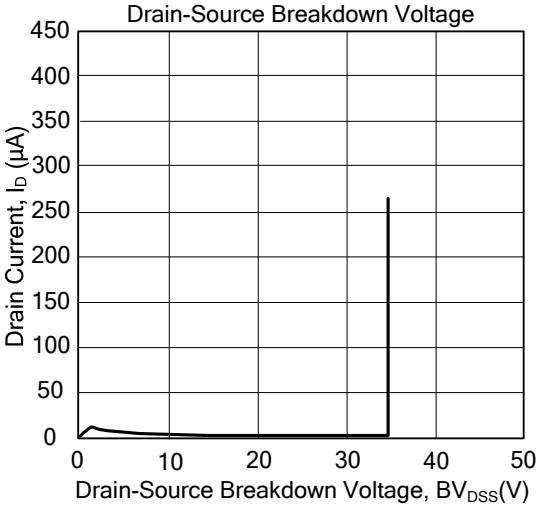
Switching Time Waveforms



Drain Current vs. Gate Threshold Voltage



Drain Current vs.
Drain-Source Breakdown Voltage



Drain-Source
On-State Resistance Characteristics