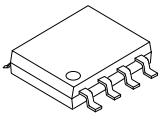
UT4411

Power MOSFET

P-CHANNEL ENHANCEMENT MODE



SOP-8

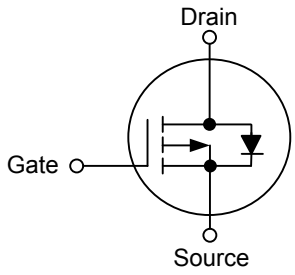
■ DESCRIPTION

The **UT4411** 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

* $R_{DS(ON)}$ < 32mΩ @ V_{GS} = -10 V, I_D = -8 A
* Low capacitance
* Optimized gate charge
* Fast switching capability
* Avalanche energy specified

■ SYMBOL



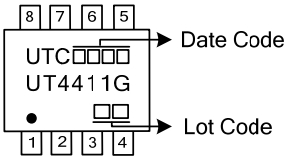
■ ORDERING INFORMATION

Ordering Number	Package	Pin Assignment								Packing
		1	2	3	4	5	6	7	8	
UT4411G-S08-R	SOP-8	S	S	S	G	D	D	D	D	Tape Reel

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

UT4411G-S08-R (1)Packing Type	(1) R: Tape Reel
(2)Package Type	(2) S08: SOP-8
(3)Green Package	(3) G: Halogen Free and Lead Free

■ MARKING



■ 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	-8	A
Pulsed Drain Current	I_{DM}	-40	A
Power Dissipation	P_D	3	W
Junction Temperature	T_J	+150	°C
Strong Temperature	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 DATA

PARAMETER	SYMBOL	MIN	TYP	MAX	UNIT
Junction-to-Ambient	θ_{JA}		54	75	°C/W

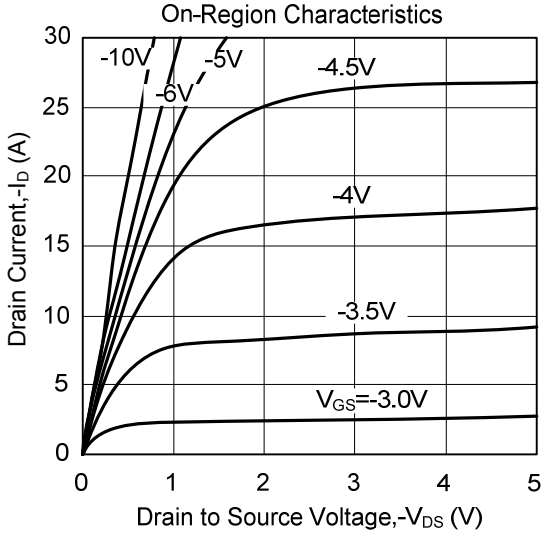
■ ELECTRICAL CHARACTERISTICS (T_J =25°C, unless otherwise specified)

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
OFF CHARACTERISTICS						
Drain-Source Breakdown Voltage	BV_{DSS}	V_{GS} =0 V, I_D =-250 μA	-30			V
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS} =-24 V, V_{GS} =0 V			-1	μA
Gate-Body Leakage Current	I_{GSS}	V_{DS} =0 V, V_{GS} = ±20 V			±100	nA
ON CHARACTERISTICS						
Gate Threshold Voltage	$V_{GS(TH)}$	V_{DS} =V_{GS}, I_D =-250 μA	-1.2		-2.4	V
On State Drain Current	$I_{D(ON)}$	V_{DS} =-5V, V_{GS} =-10 V	-40			A
Static Drain-Source On-Resistance	$R_{DS(ON)}$	V_{GS} =-10 V, I_D =-8 A		26	32	mΩ
		V_{GS} =-4.5 V, I_D =-5 A		50	55	
DYNAMIC PARAMETERS						
Input Capacitance	C_{ISS}	V_{DS} =-15V, V_{GS} =0V, f=1MHz		1200	1400	pF
Output Capacitance	C_{OSS}			170		
Reverse Transfer Capacitance	C_{RSS}			122		
SWITCHING PARAMETERS						
Total Gate Charge	Q_G	V_{DS} =-15V, V_{GS} =-10V, I_D =-8A		18.4	23	nC
Gate Source Charge	Q_{GS}			2.7		
Gate Drain Charge	Q_{GD}			4.9		
Turn-ON Delay Time	$t_{D(ON)}$	V_{GS}=-10V,V_{DS}=-10V, I_D =-0.25A, R_{GEN} =25Ω		38		ns
Turn-ON Rise Time	t_R			47		
Turn-OFF Delay Time	$t_{D(OFF)}$			300		
Turn-OFF Fall-Time	t_F			130		
SOURCE- DRAIN DIODE RATINGS AND CHARACTERISTICS						
Diode Forward Voltage	V_{SD}	I_S=-1A,V_{GS}=0V		-0.76	-1	V
Maximum Body-Diode Continuous Current	I_S				-4.2	A

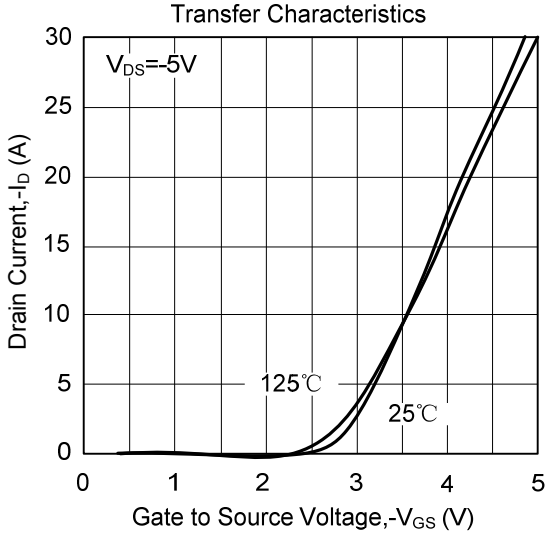
Notes: 1. Pulse width limited by $T_{J(MAX)}$
2. Pulse width ≤300us, duty cycle ≤0.5% max.
3. Surface mounted on 1 in ^{2} copper pad of FR4 board, t≤10s.

■ TYPICAL CHARACTERISTICS

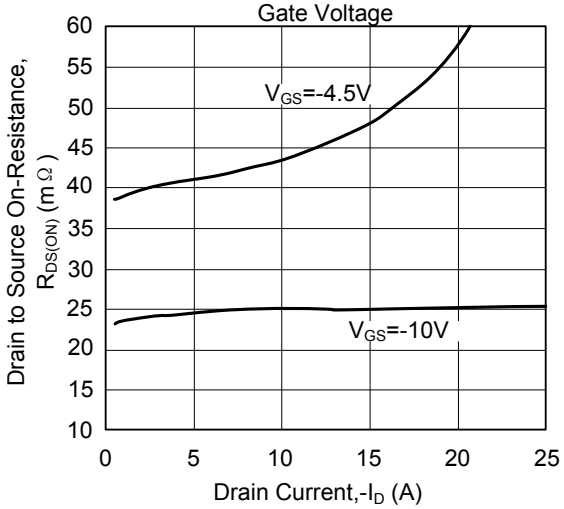
On-Region Characteristics



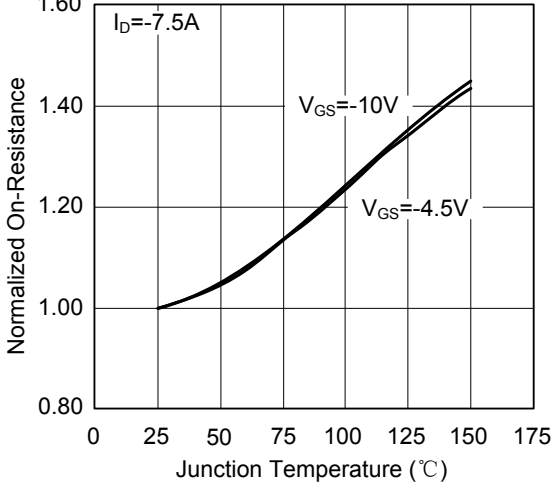
Transfer Characteristics



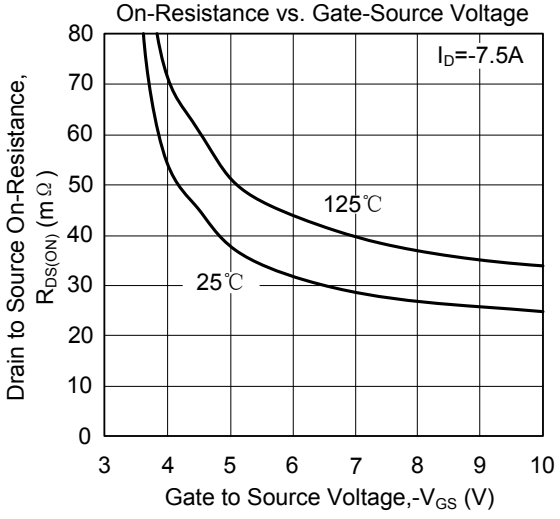
On-Resistance vs. Drain Current and Gate Voltage



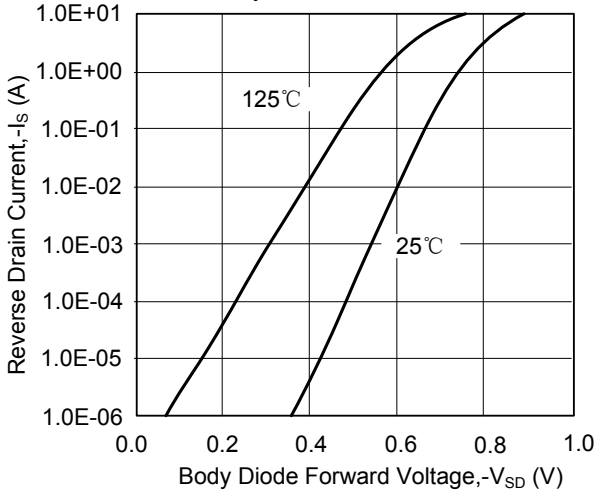
On-Resistance vs. Junction Temperature



On-Resistance vs. Gate-Source Voltage



Body-Diode Characteristics



■ TYPICAL CHARACTERISTICS(Cont.)