



UT4411

Power MOSFET

P-CHANNEL ENHANCEMENT MODE

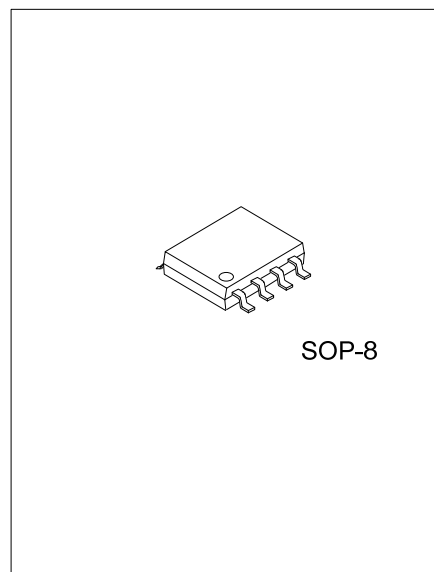
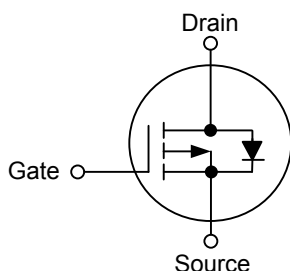
DESCRIPTION

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

- * $R_{DS(ON)} = 32m\Omega @ V_{GS} = 10V$
- * Low capacitance
- * Optimized gate charge
- * Fast switching capability
- * Avalanche energy specified

SYMBOL



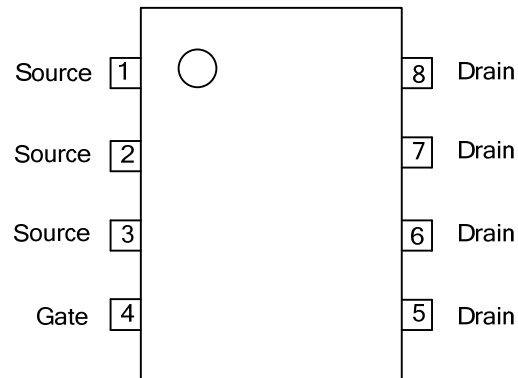
Lead-free: UT4411L
Halogen-free : UT4411G

ORDERING INFORMATION

Normal	Ordering Number		Package	Packing
	Lead Free Plating	Halogen Free		
UT4411-S08-R	UT4411L-S08-R	UT4411G-S08-R	SOP-8	Tape Reel
UT4411-S08-T	UT4411L-S08-T	UT4411G-S08-T	SOP-8	Tube

UT4411L-S08-R	(1)Packing Type	(1) R: Tape Reel, T: Tube
	(2)Package Type	(2) S08: SOP-8
	(3)Lead Plating	(3) G: Halogen Free, L: Lead Free, Blank: Pb/Sn

■ PIN CONFIGURATION



■ 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	-8	A
Pulsed Drain Current	I_{DM}	-40	A
Power Dissipation	P_D	3	W
Junction Temperature	T_J	+150	$^\circ\text{C}$
Storage Temperature	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 DATA

PARAMETER	SYMBOL	MIN	TYP	MAX	UNIT
Junction-to-Ambient	θ_{JA}		54	75	$^\circ\text{C}/\text{W}$

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

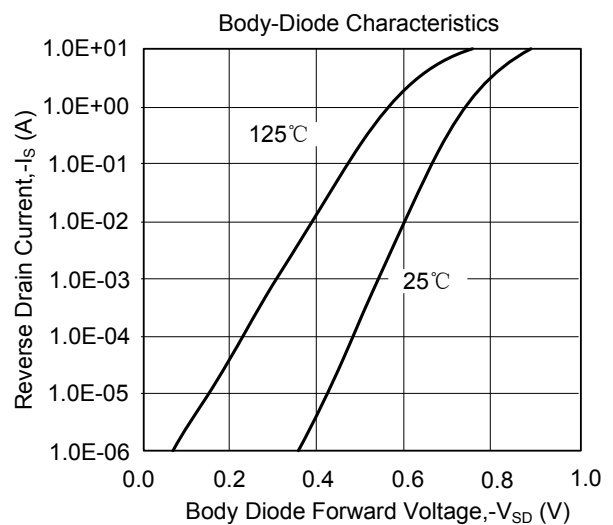
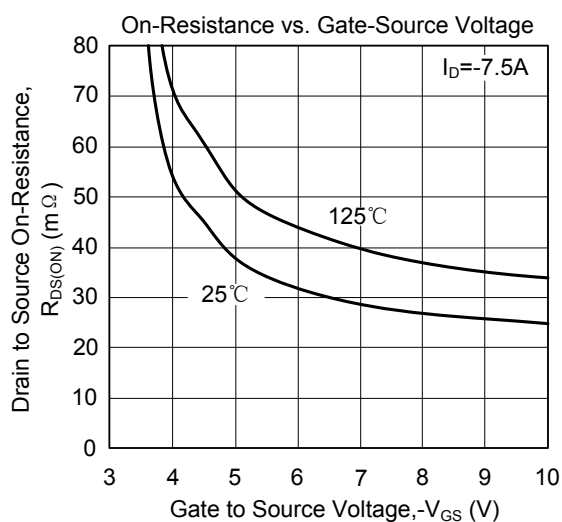
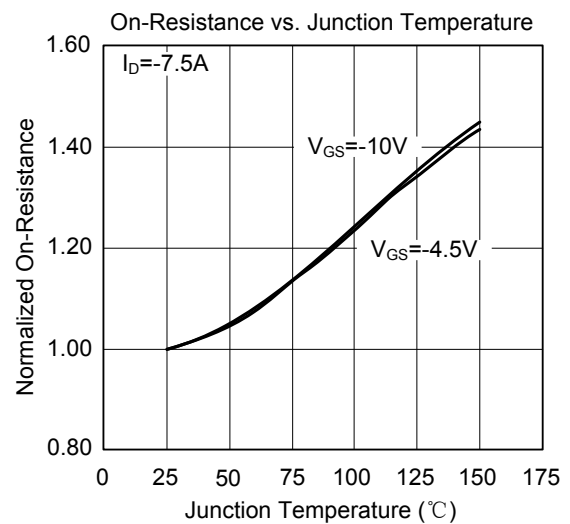
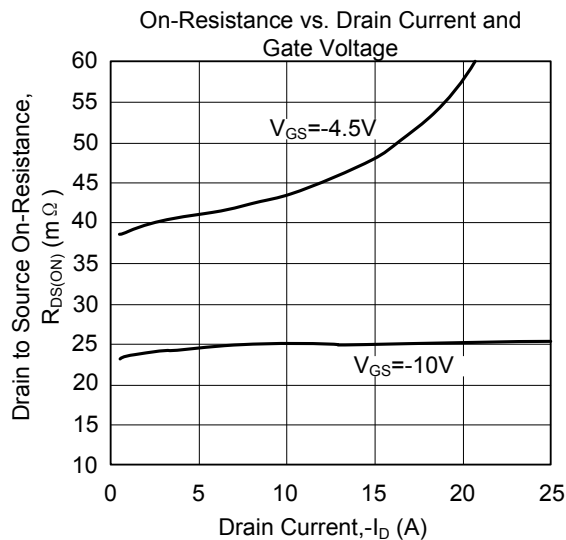
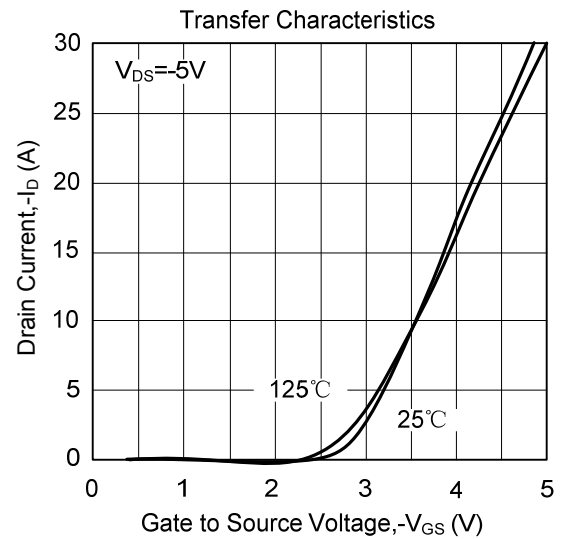
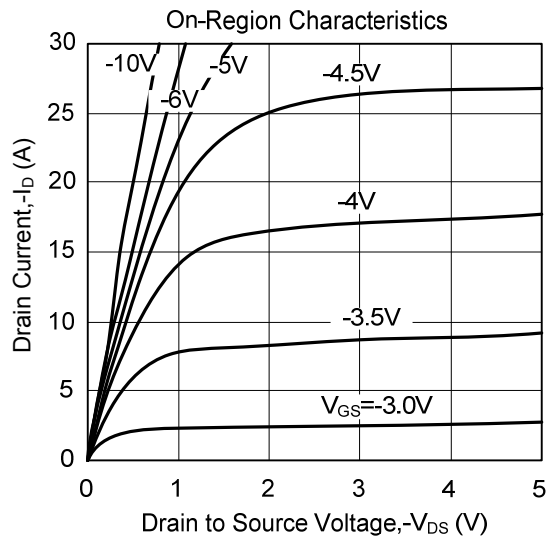
PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
OFF CHARACTERISTICS						
Drain-Source Breakdown Voltage	BV _{DSS}	V _{GS} =0 V, I _D =-250 μA	-30			V
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} =-24 V, V _{GS} =0 V			-1	μA
Gate-Body Leakage Current	I _{GSS}	V _{DS} =0 V, V _{GS} = ±20 V			±100	nA
ON CHARACTERISTICS						
Gate Threshold Voltage	V _{GS(TH)}	V _{DS} =V _{GS} , I _D =-250 μA	-1.2	-2	-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		24.5	32	mΩ
		V _{GS} =-4.5 V, I _D =-5 A		41	55	
DYNAMIC PARAMETERS						
Input Capacitance	C _{ISS}	V _{DS} =-15V, V _{GS} =0V, f=1MHz		920	1120	pF
Output Capacitance	C _{OSS}			190		
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} =-15V, R _L =1.8Ω, R _{GEN} =3Ω		7.1		ns
Turn-ON Rise Time	t _R			3.4		
Turn-OFF Delay Time	t _{D(OFF)}			18.9		
Turn-OFF Fall-Time	t _F			8.4		
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
Body Diode Reverse Recovery Time	t _{RR}	I _F =-8A, dI/dt=100A/μs		21.5	27	ns
Body Diode Reverse Recovery Charge	Q _{RR}	I _F =-8 A, dI/dt=100A/μs		12.5		nC

Notes: 1. Pulse width limited by $T_{J(MAX)}$

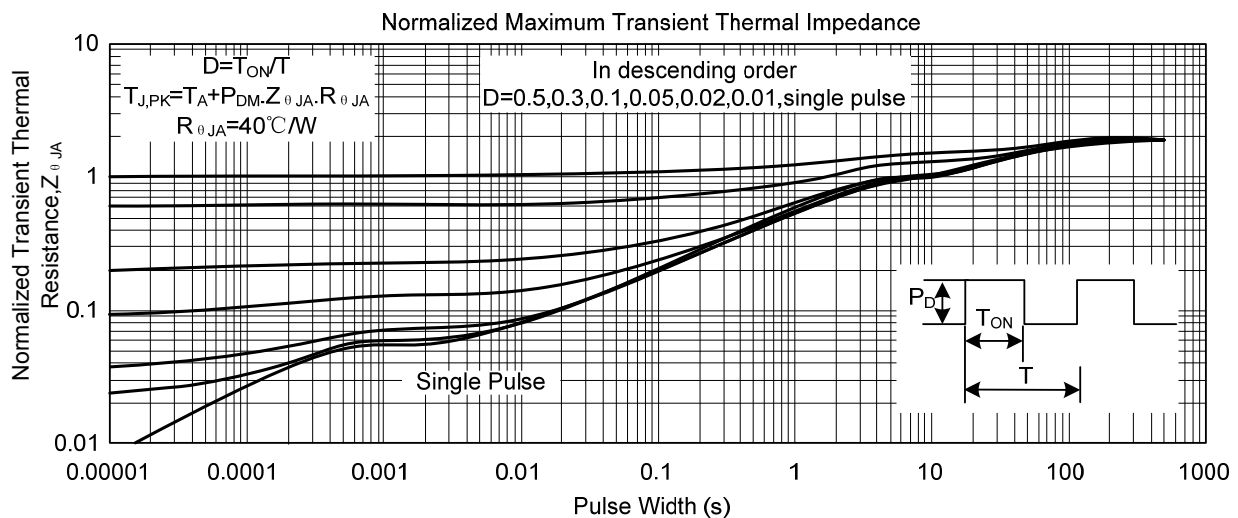
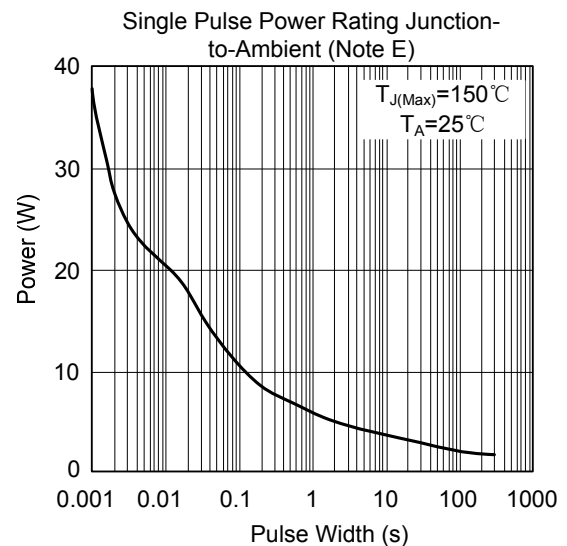
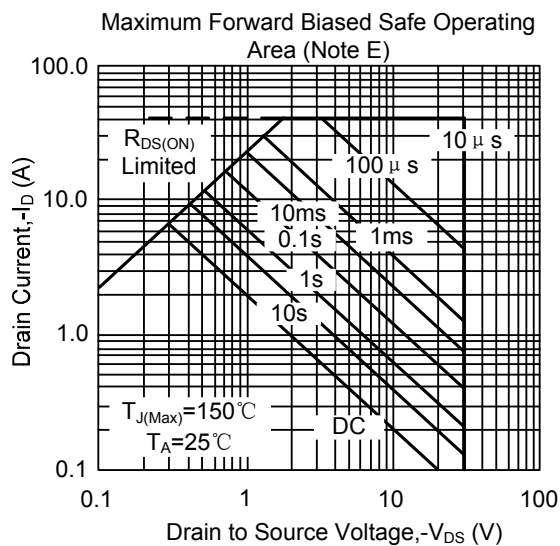
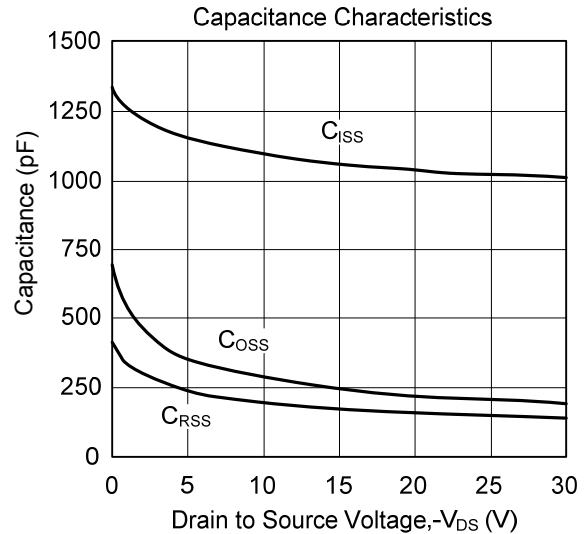
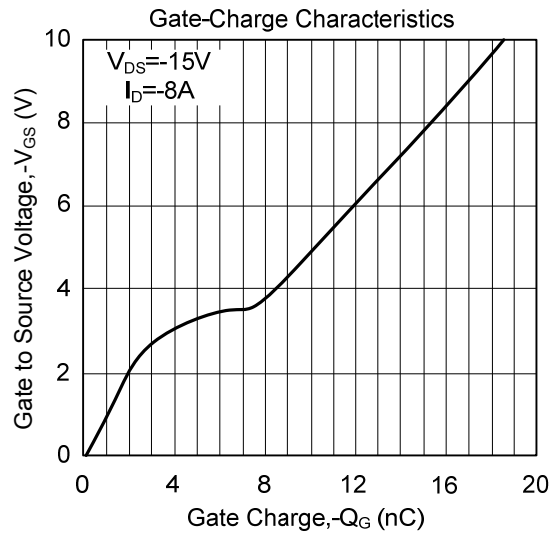
2. Pulse width $\leq 300\text{ }\mu\text{s}$, duty cycle $\leq 0.5\%$ max.

3. Surface mounted on 1 in² copper pad of FR4 board, $t \leq 10\text{ s}$.

■ TYPICAL CHARACTERISTICS



TYPICAL CHARACTERISTICS(Cont.)



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