



UT4410

Power MOSFET

N-CHANNEL 30-V (D-S) MOSFET

DESCRIPTION

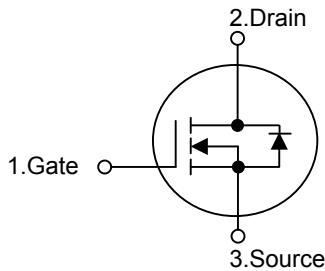
As advanced N-channel logic level enhancement MOSFET, the **UT4410** is produced using UTC's high cell density, DMOS trench technology. which has been specially tailored to minimize the on-resistance and maintain low gate charge for superior switching performance.

These devices can be particularly suited for such low voltage applications: cellular phone and notebook computer power management and other battery powered circuits where high-side switching and low in-line power loss are needed in a very small outline surface mount package.

FEATURES

- * $R_{DS(ON)} < 18m\Omega @V_{GS} = 4.5V$
- * $R_{DS(ON)} < 12m\Omega @V_{GS} = 10V$
- * Ultra low gate charge (typical 11 nC)
- * Low reverse transfer capacitance ($C_{RSS} =$ typical 35 pF)
- * Fast switching capability
- * Avalanche energy specified
- * Improved dv/dt capability, high ruggedness

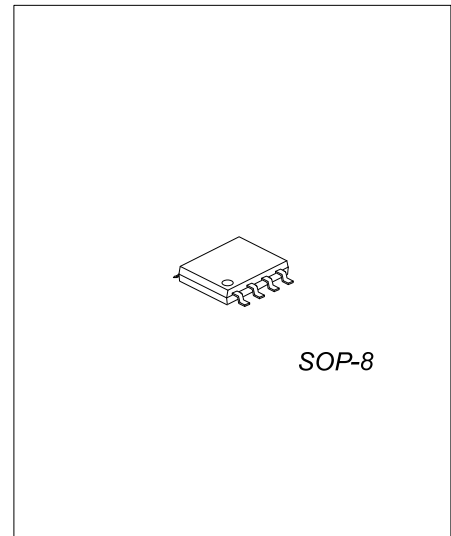
SYMBOL



ORDERING INFORMATION

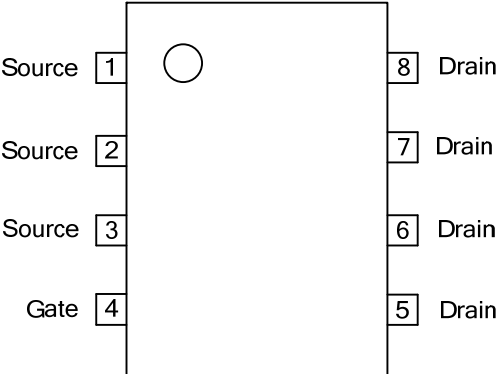
	Ordering Number		Package	Packing
	Normal	Lead Free Plating		
UT4410-S08-R	UT4410L-S08-R	UT4410G-S08-R	SOP-8	Tape Reel
UT4410-S08-T	UT4410L-S08-T	UT4410G-S08-T	SOP-8	Tube

<p>UT4410L-S08-R</p>	<p>(1) Packing Type (2) Package Type (3) Lead Plating</p>	<p>(1) R: Tape Reel, T: Tube (2) S08: SOP-8 (3) G: Halogen Free, L: Lead Free, Blank: Pb/Sn</p>
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Lead-free: UT4410L
Halogen-free: UT4410G

■ PIN CONFIGURATION



■ 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	11.6	A
Pulsed Drain Current	I _{DM}	46.4	A
Power Dissipation	P _D	3.6	W
Junction Temperature	T _J	-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}			60	°C/W

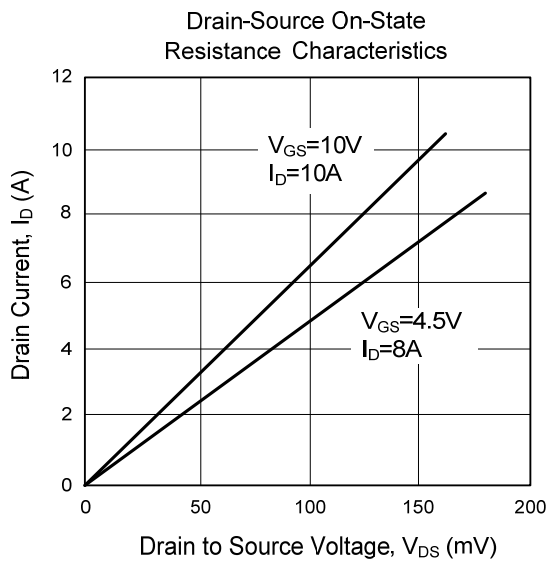
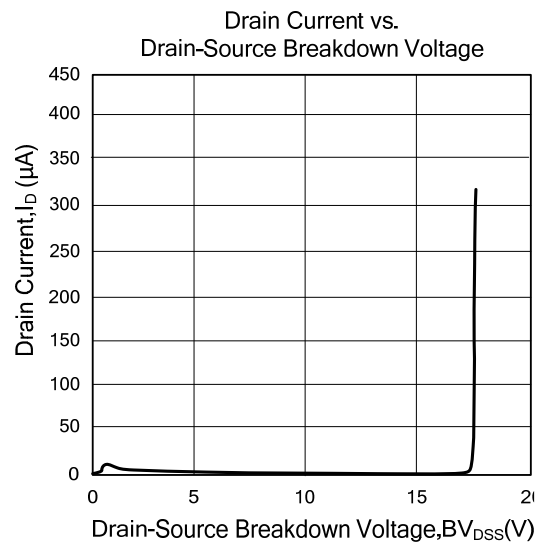
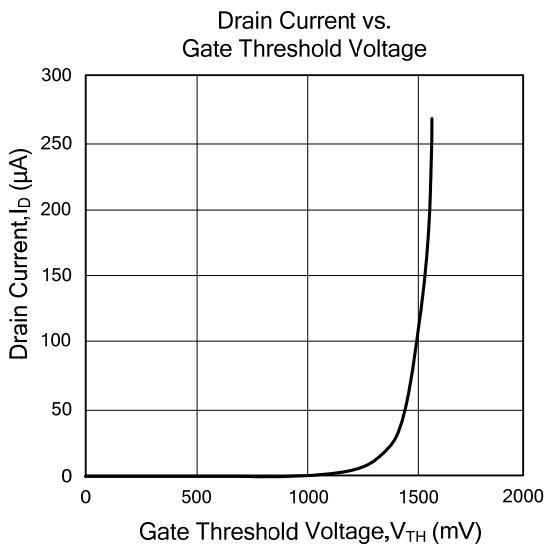
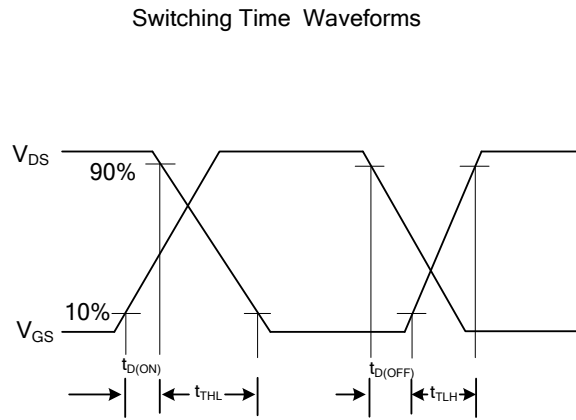
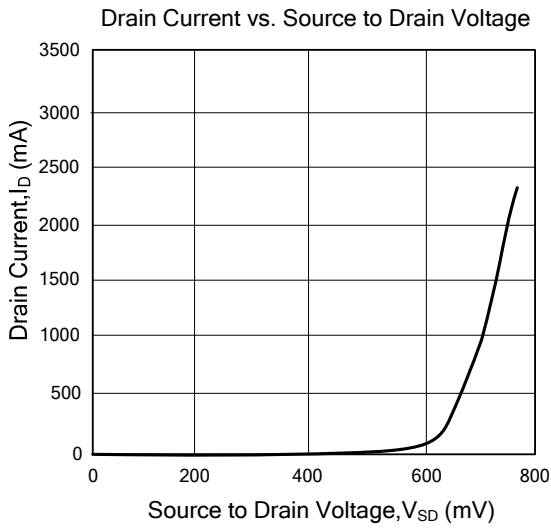
Notes: The device mounted on 1in² FR4 board with 2 oz copper

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

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
OFF CHARACTERISTICS						
Drain-Source Leakage Current	I _{DSS}	V _{DS} =30V, V _{GS} =0V	1			µA
Gate-Source Leakage Current	I _{GSS}	V _{GS} =±20V, V _{DS} =0V			±100	nA
ON CHARACTERISTICS						
Gate-Threshold Voltage	V _{GS(TH)}	V _{DS} =V _{GS} , I _D =250µA	1.3	1.6	3.0	V
Static Drain-Source On-Resistance(Note)	R _{DS(ON)}	V _{GS} =10V, I _D =10A		12	18	mΩ
		V _{GS} =4.5V, I _D =8A		17	20	
On-State Drain Current(Note)	I _{D(ON)}	V _{DS} = 5V, V _{GS} =10V	20			A
DYNAMIC PARAMETERS						
Input Capacitance	C _{ISS}	V _{DS} =15V, V _{GS} =0V, f=1.0MHz		700	800	pF
Output Capacitance	C _{OSS}			120		pF
Reverse Transfer Capacitance	C _{RSS}			35		pF
Gate Resistance	R _G	V _{DS} =0V, V _{GS} =0V, f=1.0MHz		0.9		Ω
SWITCHING PARAMETERS						
Turn-ON Delay Time	t _{D(ON)}	V _{DD} =25V, I _D =1A, R _L =25Ω V _{GEN} =10V, R _G =6Ω		14	32	ns
Turn-ON Rise Time	t _R			12	64	ns
Turn-OFF Delay Time	t _{D(OFF)}			43	280	ns
Turn-OFF Fall-Time	t _F			4	192	ns
Total Gate Charge	Q _G	V _{DS} =15V, V _{GS} =4.5V, I _D =10A		11	15	nC
Total Gate Charge	Q _{GT}	V _{DS} =15V, V _{GS} =10V, I _D =10A		20	26	nC
Gate Source Charge	Q _{GS}			5		nC
Gate Drain Charge	Q _{GD}			4.9		nC
SOURCE- DRAIN DIODE RATINGS AND CHARACTERISTICS						
Drain-Source Diode Forward Voltage	V _{SD}	I _S =2.3 A, V _{GS} =0V		0.7	1.1	V

Note: Pulse test; pulse width ≤ 300us, duty cycles ≤ 2%

■ TYPICAL CHARACTERISTICS



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