



## UT4957

Power MOSFET

### P-CHANNEL ENHANCEMENT MODE POWER MOSFET

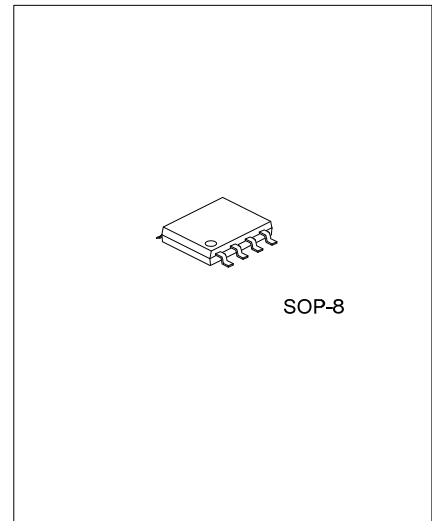
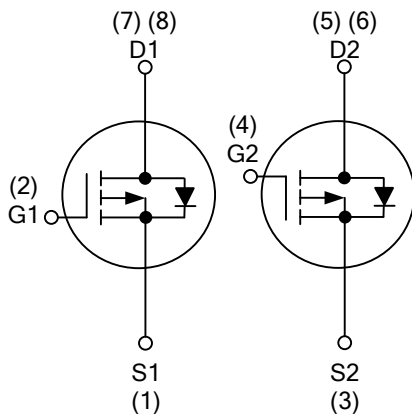
#### DESCRIPTION

The **UT4957** 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

- \*  $R_{DS(ON)} < 24m\Omega @ V_{GS} = -10V$
- \*  $R_{DS(ON)} < 36m\Omega @ V_{GS} = 4.5V$
- \* Low capacitance
- \* Low gate charge
- \* Fast switching capability
- \* Avalanche energy specified

#### SYMBOL



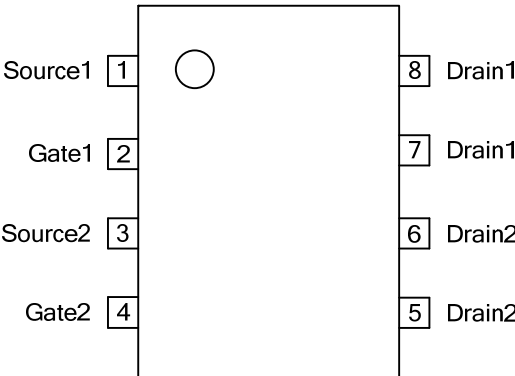
Lead-free: UT4957L  
Halogen-free: UT4957G

#### ORDERING INFORMATION

Ordering Number			Package	Packing
Normal	Lead Free	Halogen Free		
UT4957-S08-R	UT4957L-S08-R	UT4957G-S08-R	SOP-8	Tape Reel
UT4957-S08-T	UT4957L-S08-T	UT4957G-S08-T	SOP-8	Tube

<p>UT4957L-S08-R</p> <p>(1) Packing Type</p> <p>(2) Package Type</p> <p>(3) Lead Plating</p>	<p>(1) R: Tape Reel, T: Tube</p> <p>(2) S08: SOP-8</p> <p>(3) G: Halogen Free, L: Lead Free, Blank: Pb/Sn</p>
--	---

■ PIN CONFIGURATION



### ■ ABSOLUTE MAXIMUM RATINGS

PARAMETER	SYMBOL	RATINGS	UNIT
Drain-Source Voltage	$V_{DSS}$	-30	V
Gate-Source Voltage	$V_{GSS}$	$\pm 20$	V
Continuous Drain Current	$I_D$	-7.7	A
Pulsed Drain Current (Note 2)	$I_{DM}$	-30	A
Power Dissipation	$P_D$	2	W
Junction Temperature	$T_J$	+150	$^{\circ}C$
Storage Temperature	$T_{STG}$	-55 ~ +150	$^{\circ}C$

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

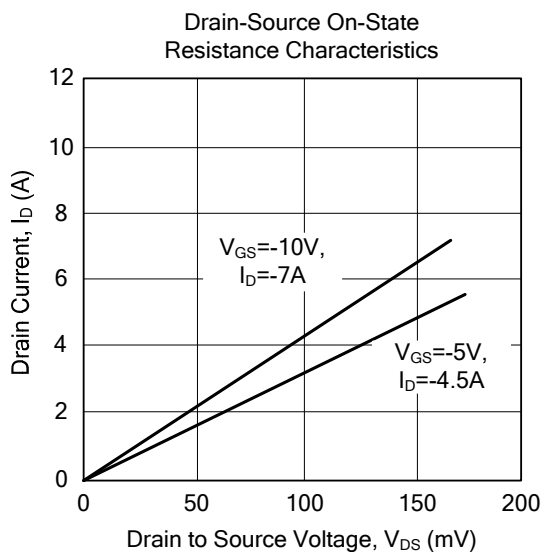
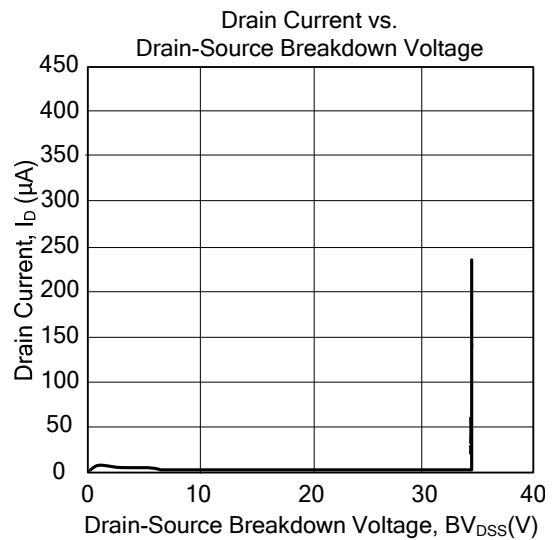
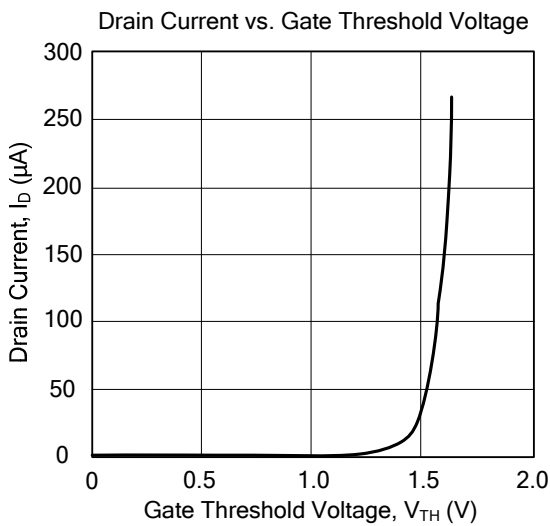
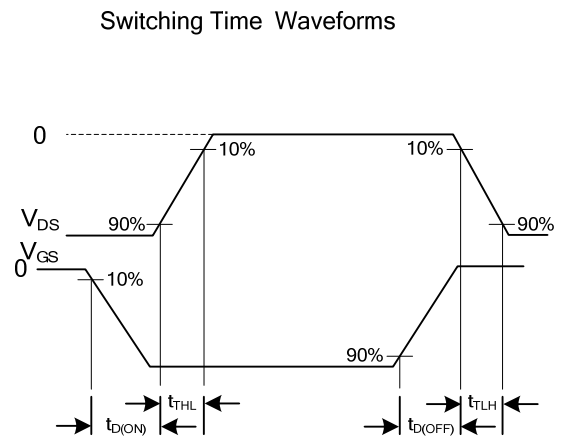
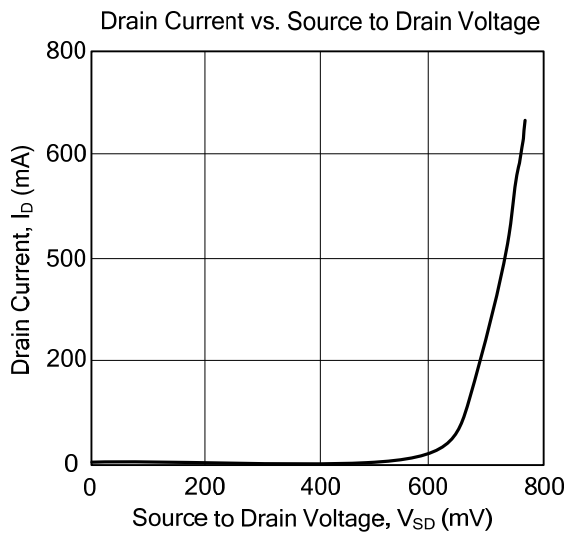
PARAMETER	SYMBOL	MIN	TYP	MAX	UNIT
Junction-to-Ambient	$\theta_{JA}$			62.5	$^{\circ}C/W$

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

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
<b>OFF CHARACTERISTICS</b>						
Drain-Source Breakdown Voltage	$BV_{DSS}$	$V_{GS}=0V, I_D=-250\mu A$	-30			V
Breakdown Voltage Temperature Coefficient	$\Delta BV_{DSS}/\Delta T_J$	Reference to $25^{\circ}C, I_D=-1mA$		-0.02		$V/^{\circ}C$
Drain-Source Leakage Current	$I_{DSS}$	$V_{DS}=-30V, V_{GS}=0V$			-1	$\mu A$
Gate-Source Leakage Current	$I_{GSS}$	$V_{GS}=\pm 20V, V_{DS}=0V$			$\pm 100$	nA
<b>ON CHARACTERISTICS</b>						
Gate Threshold Voltage	$V_{GS(TH)}$	$V_{DS}=V_{GS}, I_{DS}=-250\mu A$	-1		-3	V
Static Drain-Source On-Resistance (Note)	$R_{DS(ON)}$	$V_{GS}=-10V, I_D=-7A$ $V_{GS}=4.5V, I_D=-5A$		20 30	24 36	m $\Omega$
<b>DYNAMIC PARAMETERS</b>						
Input Capacitance	$C_{ISS}$	$V_{DS}=-25V, V_{GS}=0V, f=1.0MHz$		1670	2670	pF
Output Capacitance	$C_{OSS}$			530		pF
Reverse Transfer Capacitance	$C_{RSS}$			435		pF
<b>SWITCHING PARAMETERS</b>						
Turn-ON Delay Time (Note)	$t_{D(ON)}$	$V_{DS}=-15V, I_D=-1A, V_{GS}=-10V$ $R_G=3.3\Omega, R_D=15\Omega$		14		ns
Turn-ON Rise Time	$t_R$			11		ns
Turn-OFF Delay Time	$t_{D(OFF)}$			38		ns
Turn-OFF Fall-Time	$t_F$			25		ns
Total Gate Charge (Note)	$Q_G$	$V_{DS}=-24V, V_{GS}=-4.5V, I_D=-7A$		27	45	nC
Gate Source Charge	$Q_{GS}$			5		nC
Gate Drain Charge	$Q_{GD}$			18		nC
<b>SOURCE- DRAIN DIODE RATINGS AND CHARACTERISTICS</b>						
Diode Forward Voltage	$V_{SD}$	$I_S=-1.7A, V_{GS}=0V$			-1.2	V
Body Diode Reverse Recovery Time	$t_{RR}$	$I_S=-7A, V_{GS}=0V, di/dt=100A/\mu s$		35		ns
Body Diode Reverse Recovery Charge	$Q_{RR}$			34		nC

Note: Pulse width  $< 300\mu s$ , duty cycle  $< 2\%$ .

## TYPICAL CHARACTERISTICS



UTC assumes no responsibility for equipment failures that result from using products at values that exceed, even momentarily, rated values (such as maximum ratings, operating condition ranges, or other parameters) listed in products specifications of any and all UTC products described or contained herein. UTC products are not designed for use in life support appliances, devices or systems where malfunction of these products can be reasonably expected to result in personal injury. Reproduction in whole or in part is prohibited without the prior written consent of the copyright owner. The information presented in this document does not form part of any quotation or contract, is believed to be accurate and reliable and may be changed without notice.