



## UT4957

Power MOSFET

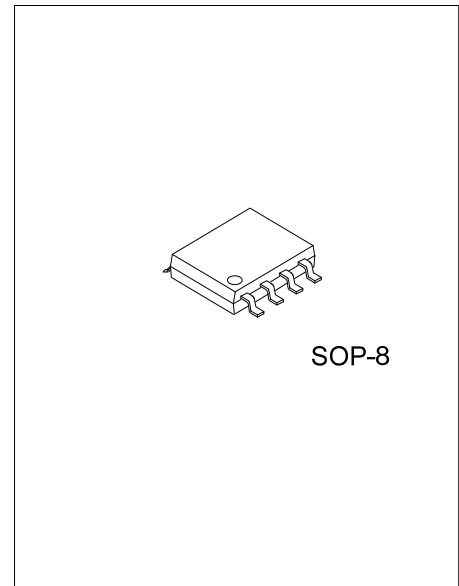
### P-CHANNEL ENHANCEMENT MODE POWER MOSFET

#### DESCRIPTION

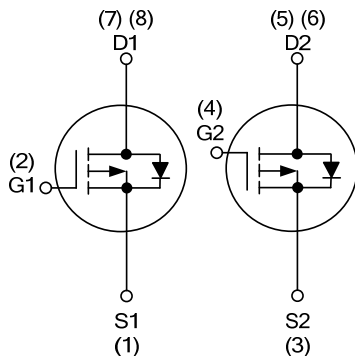
The **UT4957** uses advanced trench technology to provide excellent  $R_{DS(ON)}$ , low gate charge and operation with low gate voltages. This device is suitable for use as a load switch or in PWM applications.

#### FEATURES

- \*  $R_{DS(ON)} \leq 24m\Omega @ V_{GS}=-10V, I_D=-7A$
- \*  $R_{DS(ON)} \leq 36m\Omega @ V_{GS}=-4.5V, I_D=-5A$
- \* Low capacitance
- \* Low gate charge
- \* Fast switching capability
- \* Avalanche energy specified



#### SYMBOL



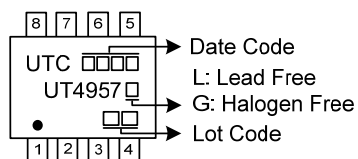
#### ORDERING INFORMATION

Ordering Number		Package	Pin Assignment								Packing
Lead Free	Halogen Free		1	2	3	4	5	6	7	8	
UT4957L-S08-R	UT4957G-S08-R	SOP-8	S1	G1	S2	G2	D2	D2	D1	D1	Tape Reel

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

<p>UT4957G-S08-R</p> <p>(1) Packing Type</p> <p>(2) Package Type</p> <p>(3) Green Package</p>	<p>(1) R: Tape Reel</p> <p>(2) S08: SOP-8</p> <p>(3) G: Halogen Free and Lead Free, L: Lead Free</p>
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#### MARKING



## ■ 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	RATINGS	UNIT
Junction-to-Ambient	$\theta_{JA}$	62.5 (Note)	$^{\circ}C/W$

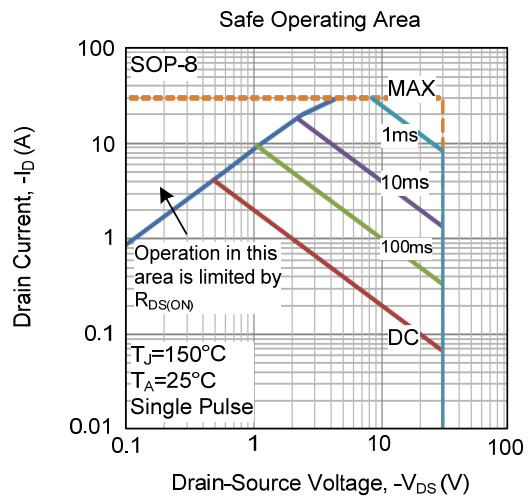
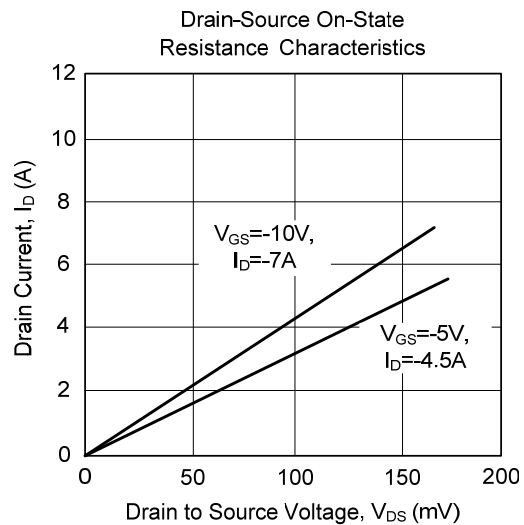
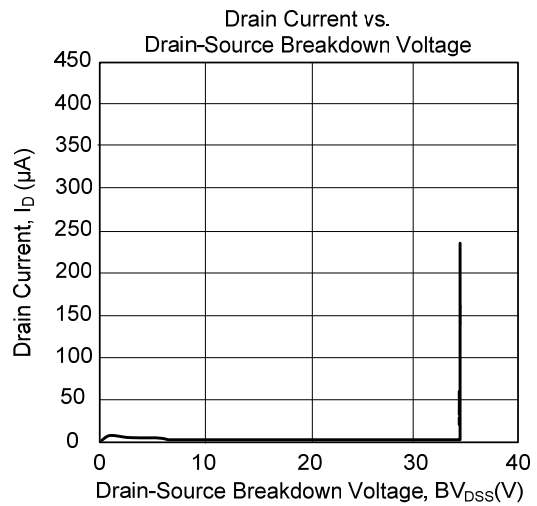
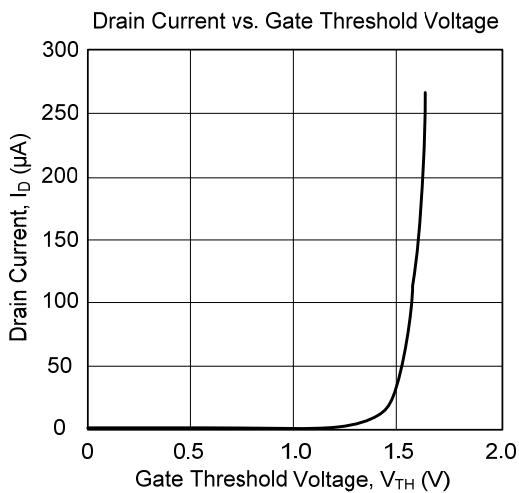
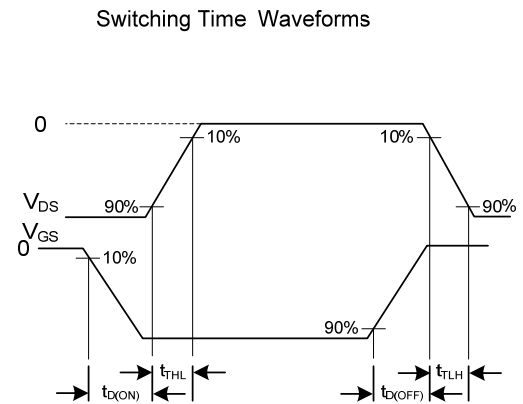
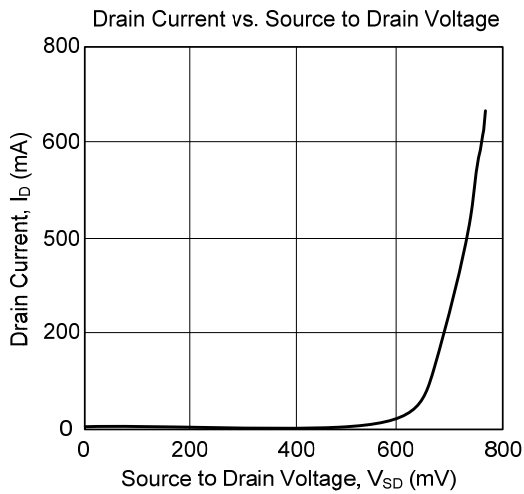
Note: Device mounted on FR-4 substrate PC board, 2oz copper, with 1inch square copper plate.

## ■ 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)	$R_{DS(ON)}$	$V_{GS}=-10V, I_D=-7A$		20	24	m $\Omega$
		$V_{GS}=-4.5V, I_D=-5A$		30	36	
<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>						
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
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
<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 <300us , duty cycle < 2%.

## TYPICAL CHARACTERISTICS



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