



## UT4812

Power MOSFET

### DUAL N-CHANNEL ENHANCEMENT MODE

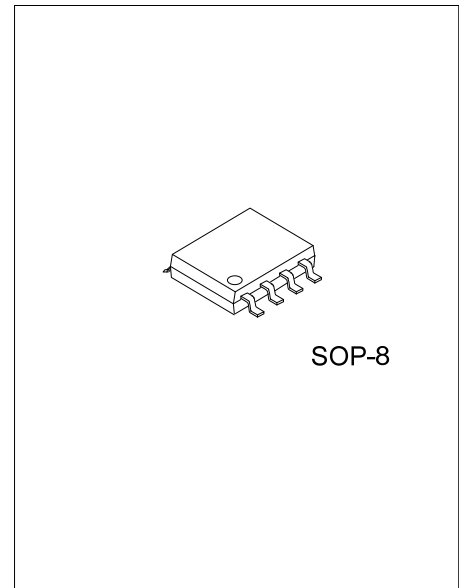
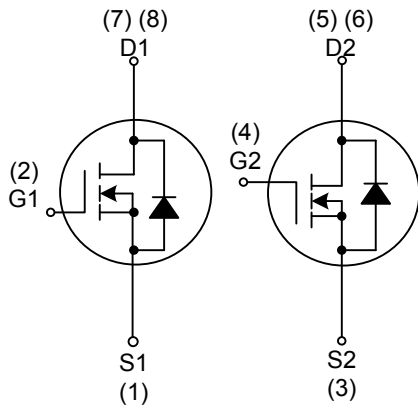
#### DESCRIPTION

The **UT4812** can provide excellent  $R_{DS(ON)}$  and low gate charge by using advanced trench technology. The **UT4812** is suitable for using as a load switch or in PWM applications.

#### FEATURES

- \* 30V/6.9A
- \* Low  $R_{DS(ON)}$
- \* Reliable and Rugged

#### SYMBOL



SOP-8

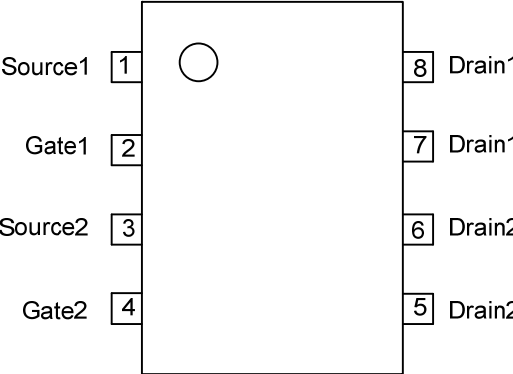
Lead-free: UT4812L  
Halogen-free: UT4812G

#### ORDERING INFORMATION

	Ordering Number			Package	Packing
	Normal	Lead Free Plating	Halogen-Free		
UT4812-S08-R	UT4812L-S08-R	UT4812G-S08-R	SOP-8	Tape Reel	
UT4812-S08-T	UT4812L-S08-T	UT4812G-S08-T	SOP-8	Tube	

<p>UT4812L-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 Plating, Blank: Pb/Sn</p>
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■ PIN CONFIGURATION



■ ABSOLUTE MAXIMUM RATINGS ( $T_A = 25^\circ\text{C}$ , unless otherwise specified)

PARAMETER	SYMBOL	RATINGS	UNIT
Drain-Source Voltage	$V_{DSS}$	30	V
Gate-Source Voltage	$V_{GSS}$	$\pm 20$	
Continuous Drain Current (Note3)	$I_D$	6.9	A
Pulsed Drain Current (Note1)	$I_{DM}$	30	
Power Dissipation	$P_D$	2	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

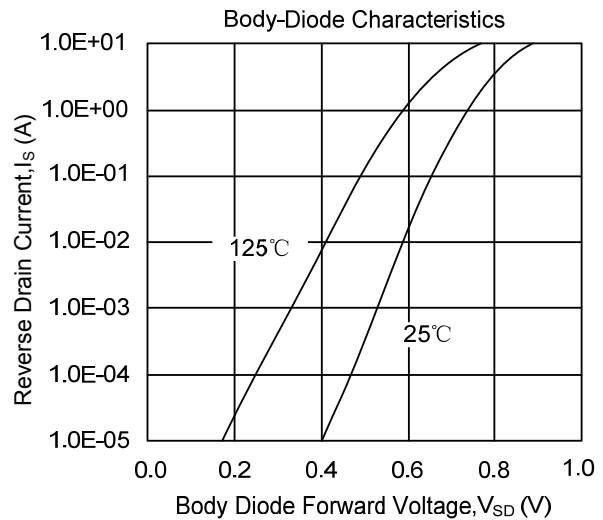
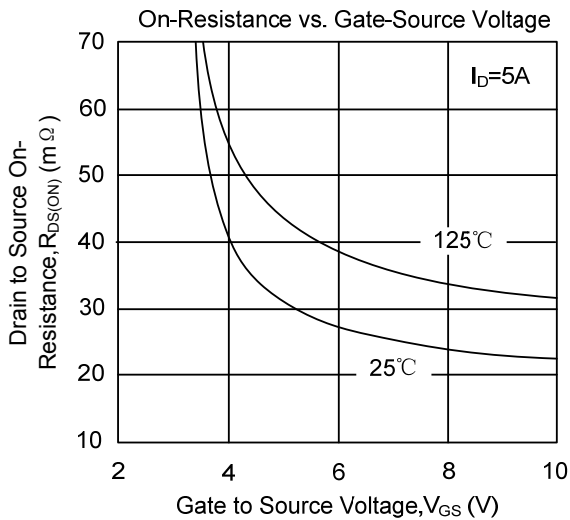
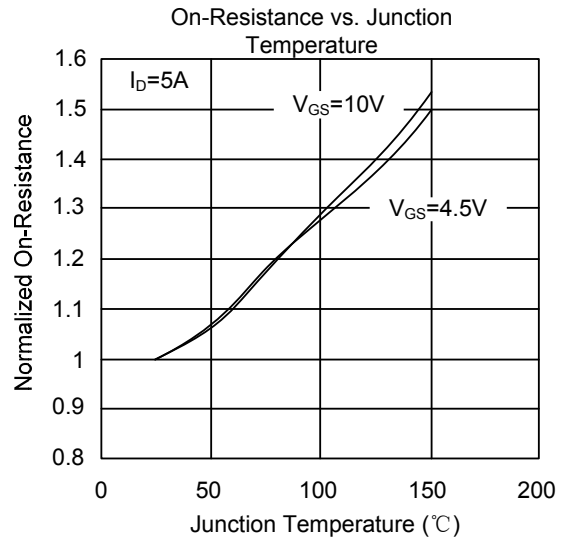
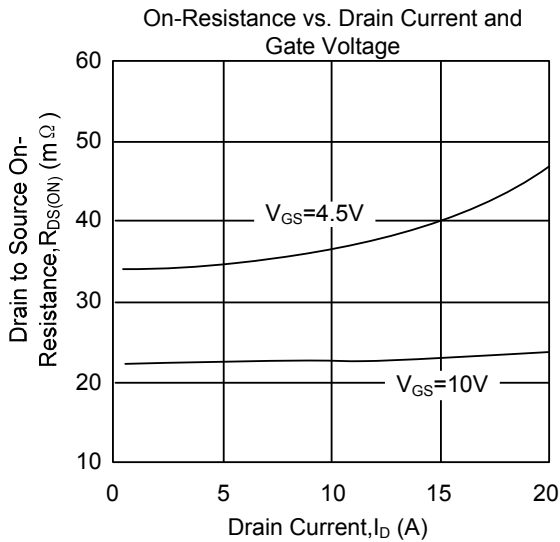
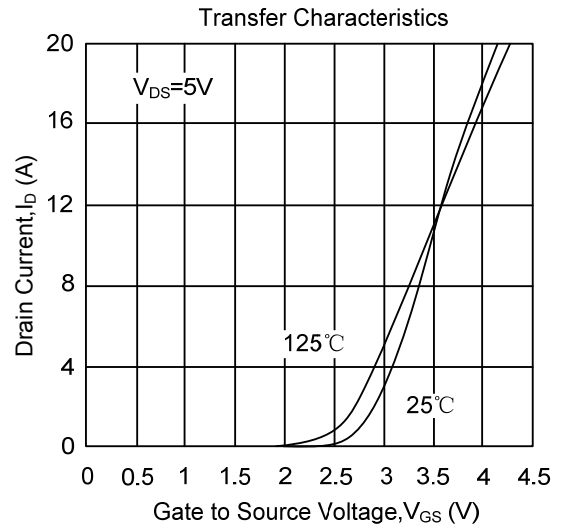
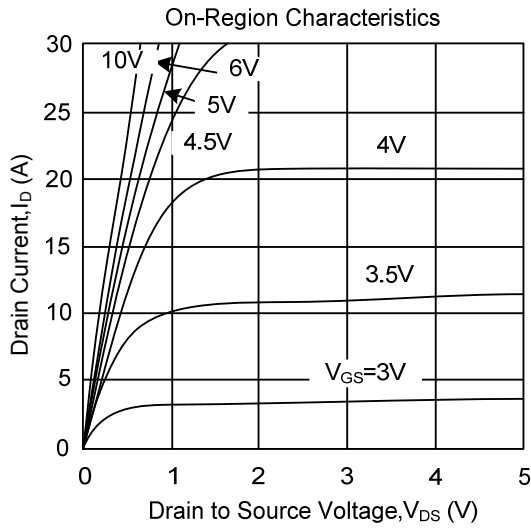
PARAMETER	SYMBOL	MIN	TYP	MAX	UNIT
Junction-to-Ambient	$\theta_{JA}$		74	110	$^\circ\text{C/W}$

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

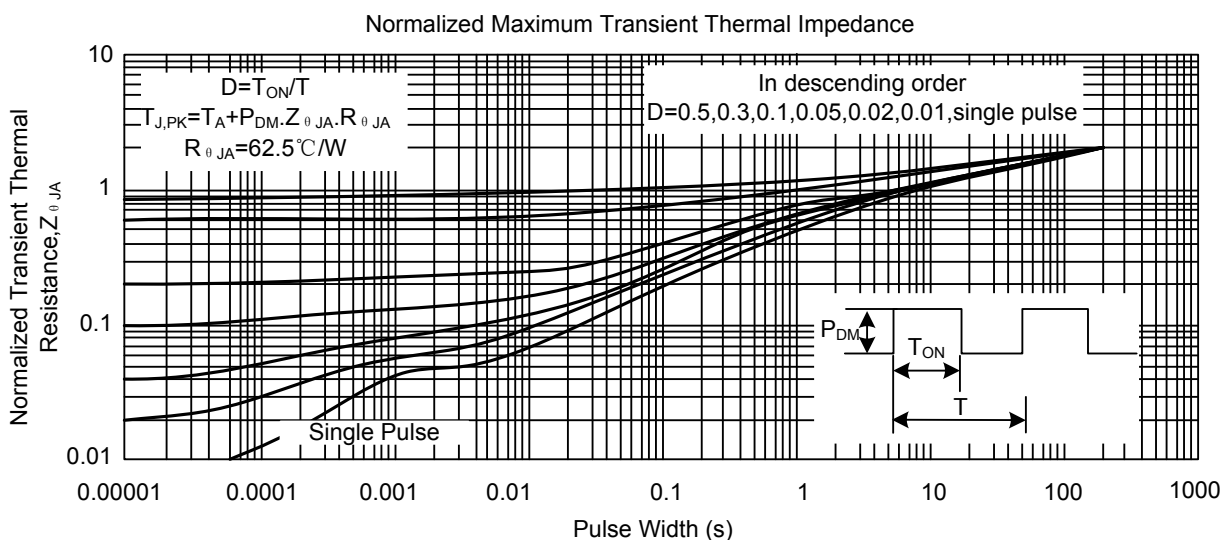
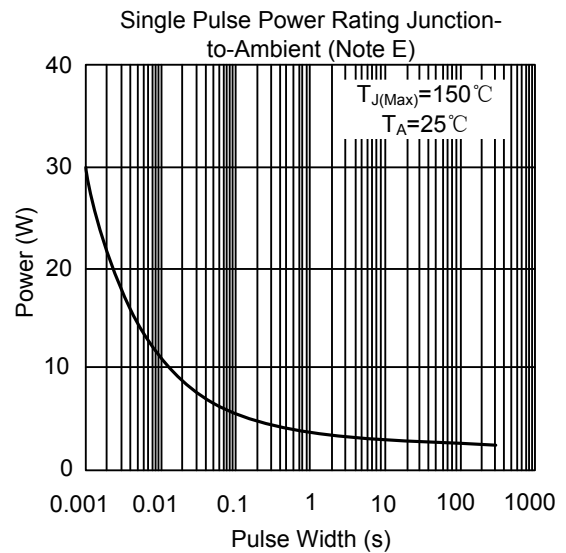
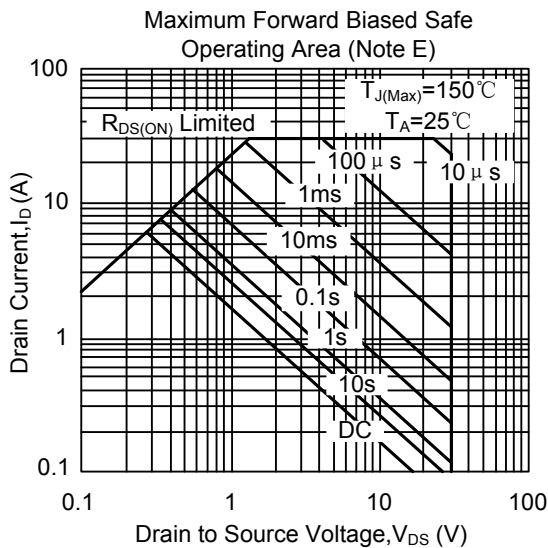
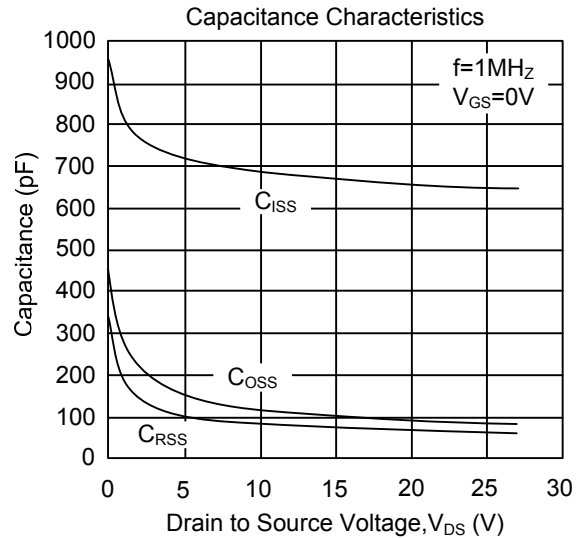
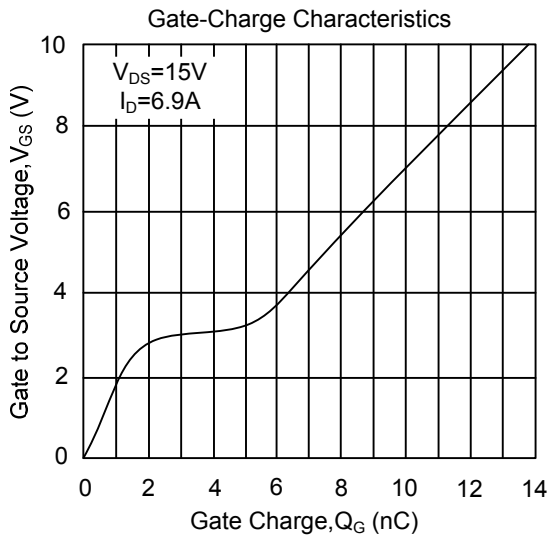
PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
<b>OFF CHARACTERISTICS</b>						
Drain-Source Breakdown Voltage	$BV_{DSS}$	$V_{GS} = 0\text{ V}, I_D = 250\mu\text{A}$	30			V
Drain-Source Leakage Current	$I_{DSS}$	$V_{DS} = 30\text{V}, V_{GS} = 0\text{ V}$			1	$\mu\text{A}$
Gate-Source Leakage Current	$I_{GSS}$	$V_{DS} = 0\text{ V}, V_{GS} = \pm 20\text{V}$			100	nA
<b>ON CHARACTERISTICS</b>						
Gate Threshold Voltage	$V_{GS(TH)}$	$V_{DS} = V_{GS}, I_D = 250\mu\text{A}$	1	1.9	3	V
Drain-Source On-State Resistance (Note2)	$R_{DS(ON)}$	$V_{GS} = 10\text{V}, I_D = 6.9\text{A}$		22.5	28	m $\Omega$
		$V_{GS} = 4.5\text{V}, I_D = 5.0\text{A}$		34.5	42	m $\Omega$
<b>DYNAMIC PARAMETERS</b>						
Input Capacitance	$C_{ISS}$	$V_{DS} = 15\text{ V}, V_{GS} = 0\text{V}, f = 1\text{MHz}$		680	820	pF
Output Capacitance	$C_{OSS}$		102			
Reverse Transfer Capacitance	$C_{RSS}$		77	108		
<b>SWITCHING PARAMETERS</b>						
Turn-ON Delay Time	$t_{D(ON)}$	$V_{GS} = 10\text{V}, V_{DS} = 15\text{V}, R_L = 2.2\Omega, R_{GEN} = 3\Omega$		4.6	7	ns
Turn-ON Rise Time	$t_R$		4.1	6.2		
Turn-OFF Delay Time	$t_{D(OFF)}$		20.6	30		
Turn-OFF Fall-Time	$t_F$		5.2	7.5		
Total Gate Charge	$Q_G$	$V_{DS} = 15\text{V}, V_{GS} = 10\text{V}, I_D = 6.9\text{A}$		13.84	17	nC
Gate Source Charge	$Q_{GS}$		1.82			
Gate Drain Charge	$Q_{GD}$		3.2			
<b>SOURCE-DRAIN DIODE RATINGS AND CHARACTERISTICS</b>						
Drain-Source Diode Forward Voltage(Note2)	$V_{SD}$	$I_S = 1\text{A}$		0.76	1	V
Maximum Continuous Drain-Source Diode Forward Current	$I_S$				3	A
Body Diode Reverse Recovery Time	$t_{RR}$	$I_F = 6.9\text{ A}, dI/dt = 100\text{A}/\mu\text{s}$		16.5	20	ns
Body Diode Reverse Recovery Charge	$Q_{RR}$	$I_F = 6.9\text{ A}, dI/dt = 100\text{A}/\mu\text{s}$		7.8	10	nC

- Notes: 1. Pulse width limited by  $T_{J(MAX)}$   
 2. Pulse width  $\leq 300\mu\text{s}$ , duty cycle  $\leq 2\%$ .  
 3. Surface Mounted on  $1\text{in}^2$  pad area,  $t \leq 10\text{sec}$ .

## TYPICAL CHARACTERISTICS



## TYPICAL CHARACTERISTICS(Cont.)



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