



# UT4812Z

*Power MOSFET*

## 30V, 6.9A DUAL N-CHANNEL ENHANCEMENT MODE

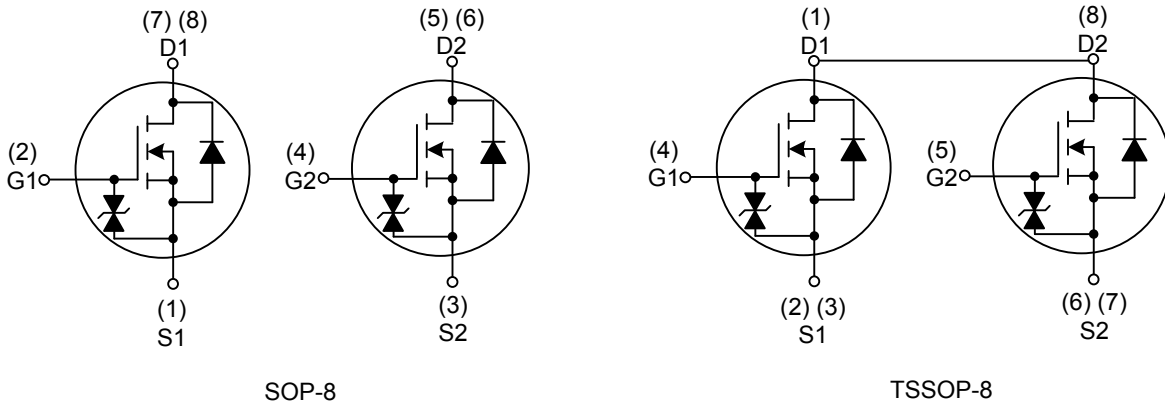
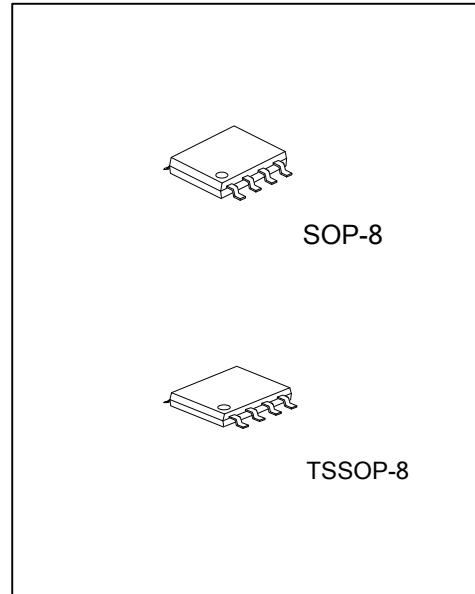
■ DESCRIPTION

The UTC **UT4812Z** can provide excellent  $R_{DS(ON)}$  and low gate charge by using advanced trench technology. The UTC **UT4812Z** is suitable for using as a load switch or in PWM applications.

■ FEATURES

- \* Low  $R_{DS(ON)}$
- \* Reliable and Rugged

■ SYMBOL



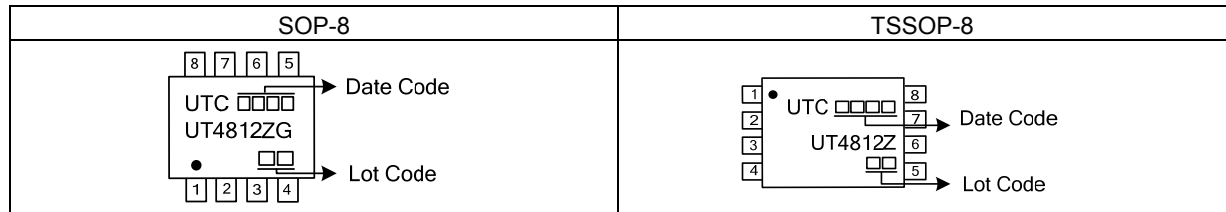
■ ORDERING INFORMATION

Ordering Number	Package	Pin Assignment								Packing
		1	2	3	4	5	6	7	8	
UT4812ZG-S08-R	SOP-8	S	G	S	G	D	D	D	D	Tape Reel
UT4812ZG-P08-R	TSSOP-8	D	S	S	G	G	S	S	D	Tape Reel

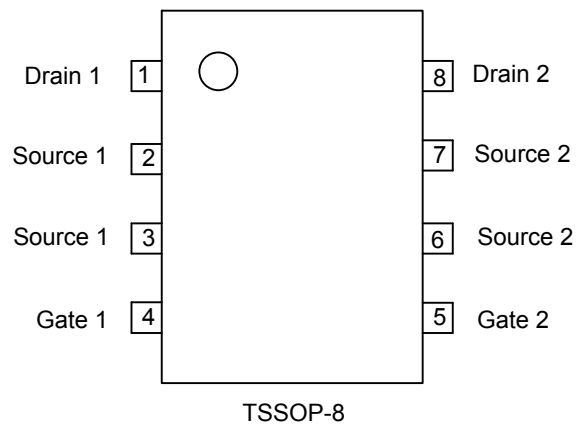
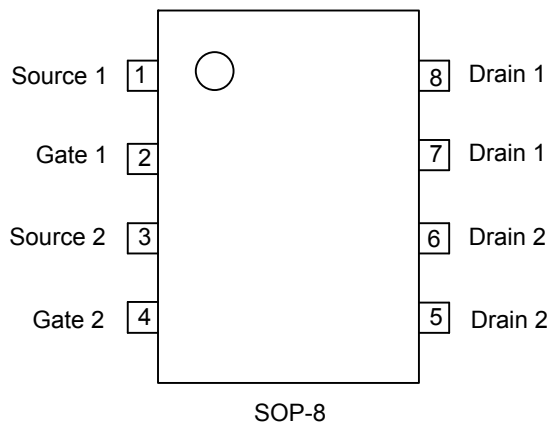
Note: Pin Assignment: G: Gate D: Drain S: Source

<p>UT4812ZG-S08-R</p> <ul style="list-style-type: none"> <li>(1) Packing Type</li> <li>(2) Package Type</li> <li>(3) Green Package</li> </ul>	<ul style="list-style-type: none"> <li>(1) R: Tape Reel</li> <li>(2) S08: SOP-8</li> <li>(3) G: Halogen Free and Lead Free</li> </ul>
---	---

■ MARKING



■ PIN CONFIGURATION



■ ABSOLUTE MAXIMUM RATINGS (T<sub>A</sub> = 25°C, unless otherwise specified)

PARAMETER	SYMBOL	RATINGS	UNIT
Drain-Source Voltage	V <sub>DSS</sub>	30	V
Gate-Source Voltage	V <sub>GSS</sub>	±20	V
Continuous Drain Current (Note 2)	I <sub>D</sub>	6.9	A
Pulsed Drain Current (Note 3)	I <sub>DM</sub>	30	A
Power Dissipation	SOP-8	2	W
	TSSOP-8	1.5	W
Junction Temperature	T <sub>J</sub>	+150	°C
Storage Temperature	T <sub>STG</sub>	-55 ~ + 150	°C

Notes: 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. Surface Mounted on 1in<sup>2</sup> pad area, t ≤ 10sec.

3. Repetitive Rating: Pulse width limited by maximum junction temperature.

■ THERMAL DATA

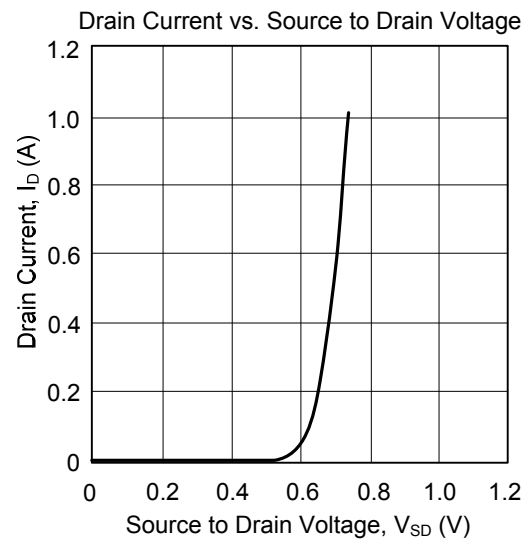
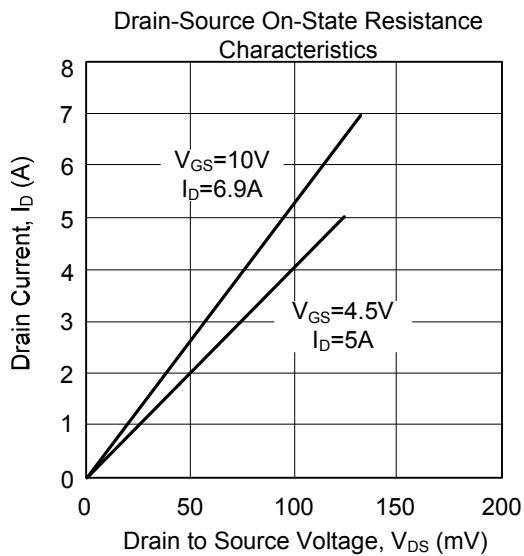
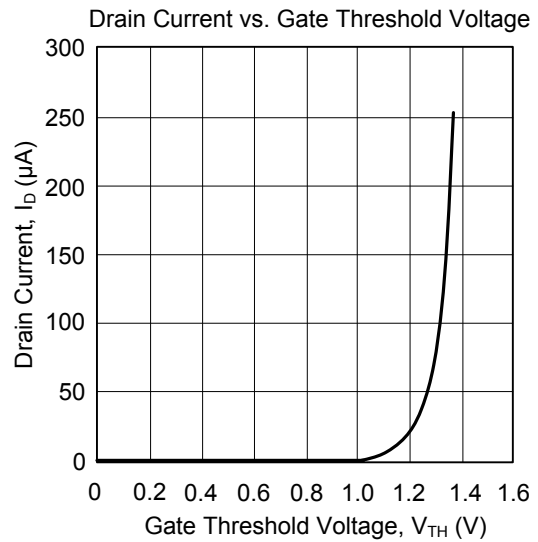
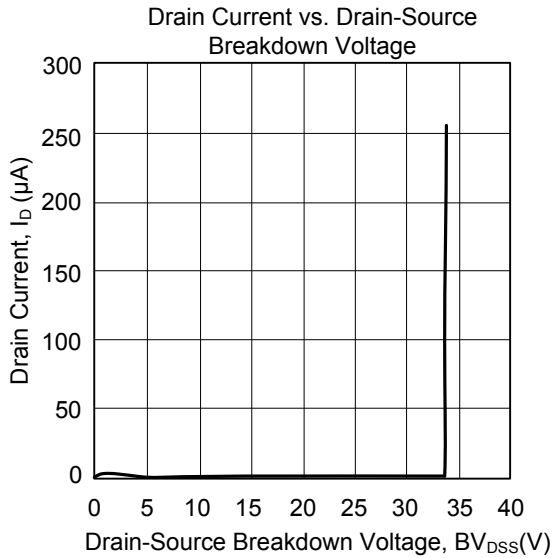
PARAMETER	SYMBOL	RATINGS	UNIT
Junction to Ambient	θ <sub>JA</sub>	110	°C/W

■ ELECTRICAL CHARACTERISTICS (T<sub>J</sub> = 25°C, unless otherwise specified)

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
<b>OFF CHARACTERISTICS</b>						
Drain-Source Breakdown Voltage	BV <sub>DSS</sub>	V <sub>GS</sub> =0 V, I <sub>D</sub> =250μA	30			V
Drain-Source Leakage Current	I <sub>DSS</sub>	V <sub>DS</sub> =30V, V <sub>GS</sub> =0 V			1	μA
Gate-Source Leakage Current	I <sub>GSS</sub>	V <sub>DS</sub> =0 V, V <sub>GS</sub> = ±20V			5	μA
<b>ON CHARACTERISTICS</b>						
Gate Threshold Voltage	V <sub>GS(TH)</sub>	V <sub>DS</sub> =V <sub>GS</sub> , I <sub>D</sub> =250 μA	1		3	V
Drain-Source On-State Resistance (Note)	R <sub>DS(ON)</sub>	V <sub>GS</sub> =10V, I <sub>D</sub> =6.9A			28	mΩ
		V <sub>GS</sub> =4.5V, I <sub>D</sub> =5.0A			42	mΩ
<b>DYNAMIC PARAMETERS</b>						
Input Capacitance	C <sub>ISS</sub>	V <sub>DS</sub> =15V, V <sub>GS</sub> =0V, f=1MHz		680		pF
Output Capacitance	C <sub>OSS</sub>			102		pF
Reverse Transfer Capacitance	C <sub>RSS</sub>			77		pF
<b>SWITCHING PARAMETERS</b>						
Total Gate Charge	Q <sub>G</sub>	V <sub>DS</sub> =15V, V <sub>GS</sub> =10V, I <sub>D</sub> =6.9A		13.84		nC
Gate Source Charge	Q <sub>GS</sub>			1.82		nC
Gate Drain Charge	Q <sub>GD</sub>			3.2		nC
Turn-ON Delay Time	t <sub>D(ON)</sub>	V <sub>GS</sub> =10V, V <sub>DS</sub> =15V, R <sub>L</sub> =2.2Ω, R <sub>G</sub> =3Ω		4.6		ns
Turn-ON Rise Time	t <sub>R</sub>			4.1		ns
Turn-OFF Delay Time	t <sub>D(OFF)</sub>			20.6		ns
Turn-OFF Fall-Time	t <sub>F</sub>			5.2		ns
<b>SOURCE-DRAIN DIODE RATINGS AND CHARACTERISTICS</b>						
Maximum Continuous Drain-Source Diode Forward Current	I <sub>S</sub>				3	A
Drain-Source Diode Forward Voltage (Note)	V <sub>SD</sub>	I <sub>S</sub> =1.0A			1	V
Body Diode Reverse Recovery Time	t <sub>rr</sub>	I <sub>F</sub> =6.9A, dI <sub>F</sub> /dt=100A/μs		16.5		ns
Body Diode Reverse Recovery Charge	Q <sub>rr</sub>				7.8	

Note: Pulse width ≤ 300μs, 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.