



# UT4812Z

*Power MOSFET*

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

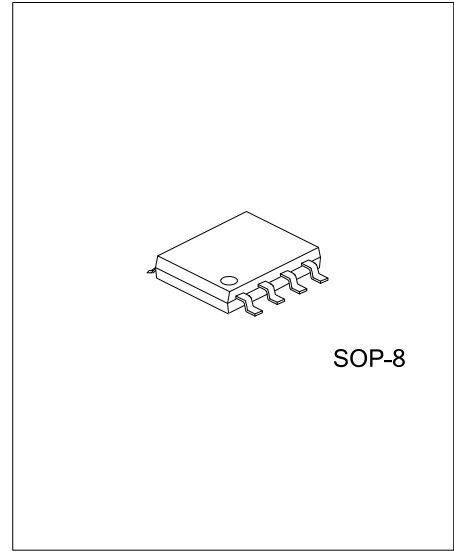
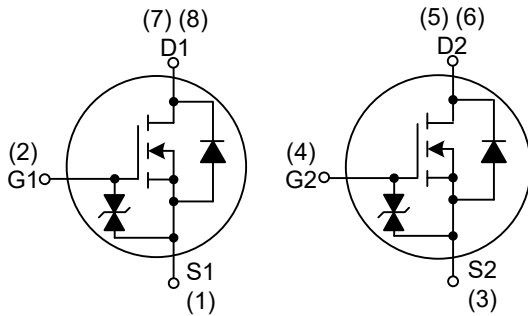
■ DESCRIPTION

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



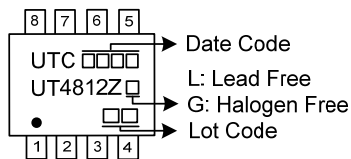
■ ORDERING INFORMATION

Ordering Number		Package	Pin Assignment								Packing
Lead Free	Halogen Free		1	2	3	4	5	6	7	8	
UT4812ZL-S08-R	UT4812ZG-S08-R	SOP-8	S1	G1	S2	G2	D2	D2	D1	D1	Tape Reel

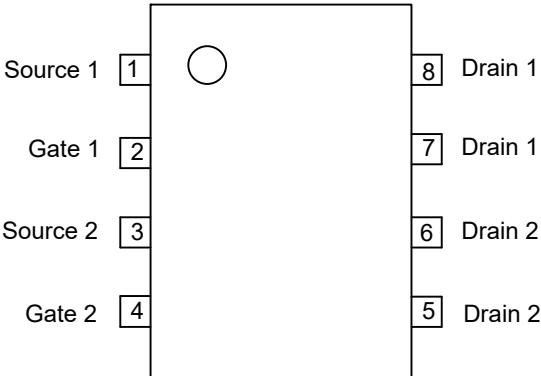
Note: Pin Assignment: G: Gate D: Drain S: Source

<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, L: Lead Free</li> </ul>
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■ 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	P <sub>D</sub>	2	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. Pulse width limited by T<sub>J(MAX)</sub>

■ THERMAL DATA

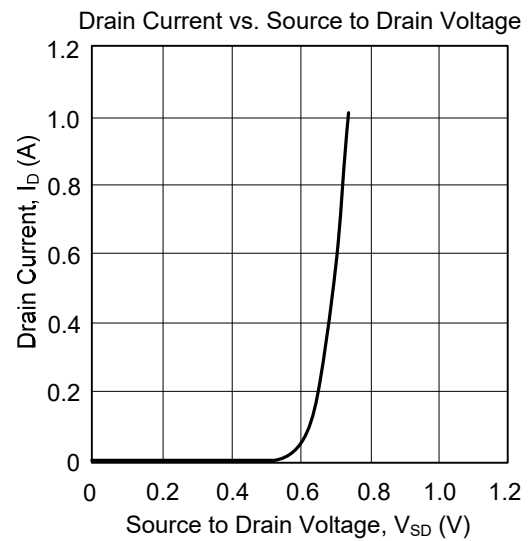
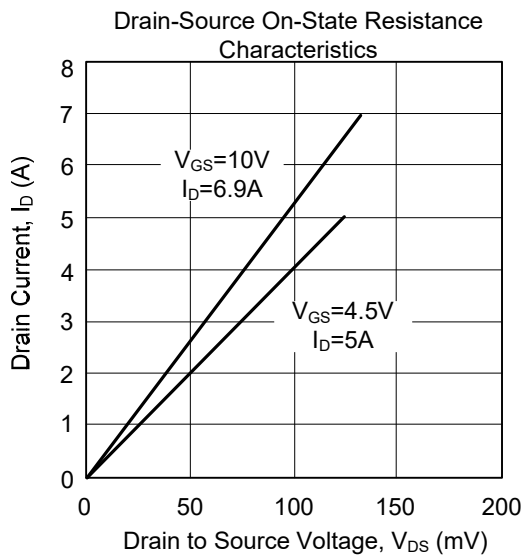
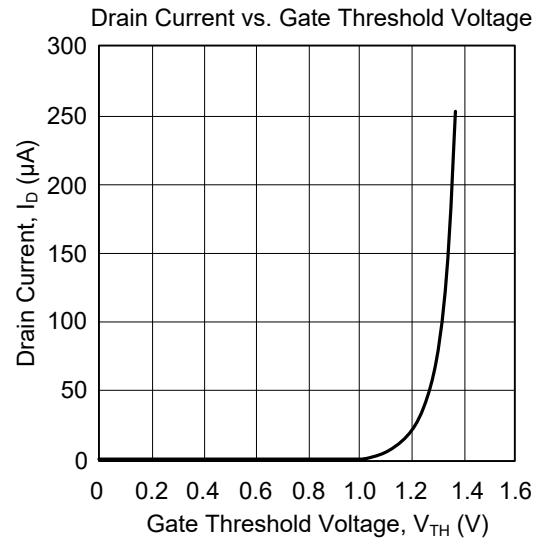
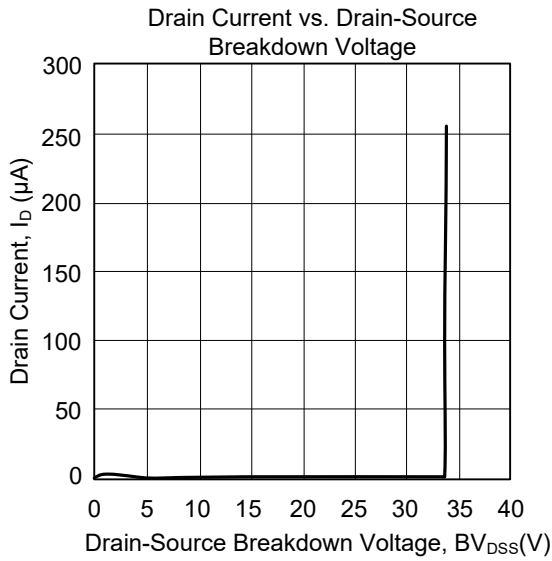
PARAMETER	SYMBOL	RATINGS	UNIT
Junction to Ambient	θ <sub>JA</sub>	110	°C /W

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

PARAMETER	SYMBOL	TESTCONDITIONS	MIN	TYP	MAX	UNIT
<b>OFF CHARACTERISTICS</b>						
Drain-Source Breakdown Voltage	BV <sub>DSS</sub>	V <sub>GS</sub> =0V, I <sub>D</sub> =250μA	30			V
Drain-Source Leakage Current	I <sub>DSS</sub>	V <sub>DS</sub> =30V, V <sub>GS</sub> =0V			1	μA
Gate-Source Leakage Current	I <sub>GSS</sub>	V <sub>DS</sub> =0V, V <sub>GS</sub> =±20V			10	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> =250μA	1.0	1.9	3.0	V
Drain-Source On-State Resistance (Note)	R <sub>DS(ON)</sub>	V <sub>GS</sub> =10V, I <sub>D</sub> =6.9A		22.5	28	mΩ
		V <sub>GS</sub> =4.5V, I <sub>D</sub> =5.0A		34.5	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	820	pF
Output Capacitance	C <sub>OSS</sub>			102		pF
Reverse Transfer Capacitance	C <sub>RSS</sub>			77	108	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	17	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>GEN</sub> =3Ω		4.6	7	ns
Turn-ON Rise Time	t <sub>R</sub>			4.1	6.2	ns
Turn-OFF Delay Time	t <sub>D(OFF)</sub>			20.6	30	ns
Turn-OFF Fall-Time	t <sub>F</sub>			5.2	7.5	ns
<b>SOURCE-DRAIN DIODE RATINGS AND CHARACTERISTICS</b>						
Drain-Source Diode Forward Voltage (Note)	V <sub>SD</sub>	I <sub>S</sub> =1A		0.76	1	V
Maximum Continuous Drain-Source Diode Forward Current	I <sub>S</sub>				3	A
Body Diode Reverse Recovery Time	t <sub>rr</sub>	I <sub>F</sub> =6.9A, dI/dt=100A/μs		16.5	20	ns
Body Diode Reverse Recovery Charge	Q <sub>rr</sub>	I <sub>F</sub> =6.9A, dI/dt=100A/μs		7.8	10	nC

Note: Pulse width ≤ 300μs, duty cycle ≤ 2%.

## ■ TYPICAL CHARACTERISTICS



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