



UT4812Z

Power MOSFET

30V, 6.9A DUAL N-CANNEL ENHANCEMENT MODE

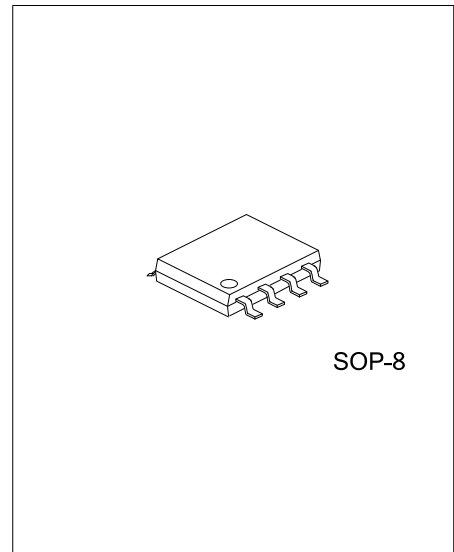
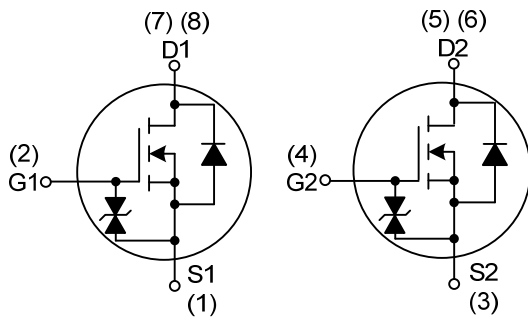
■ DESCRIPTION

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
- * Halogen Free

■ SYMBOL



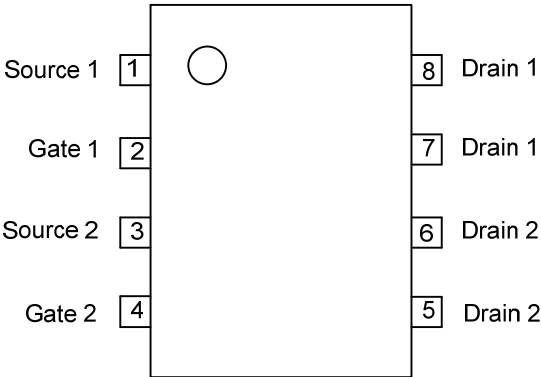
■ ORDERING INFORMATION

Ordering Number		Package	Packing
Lead Free	Halogen Free		
UT4812ZL-S08-R	UT4812ZG-S08-R	SOP-8	Tube
UT4812ZL-S08-T	UT4812ZG-S08-T	SOP-8	Tape Reel

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

<p>UT4812ZL-S08-R</p> <p>(1) Packing Type</p> <p>(2) Package Type</p> <p>(3) Lead Free</p>	<p>(1) R: Tape Reel, T: Tube</p> <p>(2) S08: SOP-8</p> <p>(3) G: Halogen Free, L: Lead Free</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}	± 20	V
Continuous Drain Current (Note 2)	I_D	6.9	A
Pulsed Drain Current (Note 3)	I_{DM}	30	A
Power Dissipation	P_D	2	W
Junction Temperature	T_J	+150	$^\circ\text{C}$
Storage Temperature	T_{STG}	-55 ~ + 150	$^\circ\text{C}$

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^2 pad area, $t \leq 10\text{sec}$

3. Pulse width limited by $T_{J(\text{MAX})}$

■ THERMAL DATA

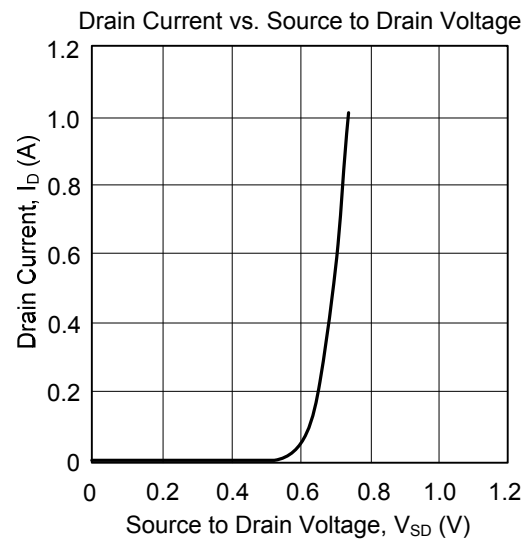
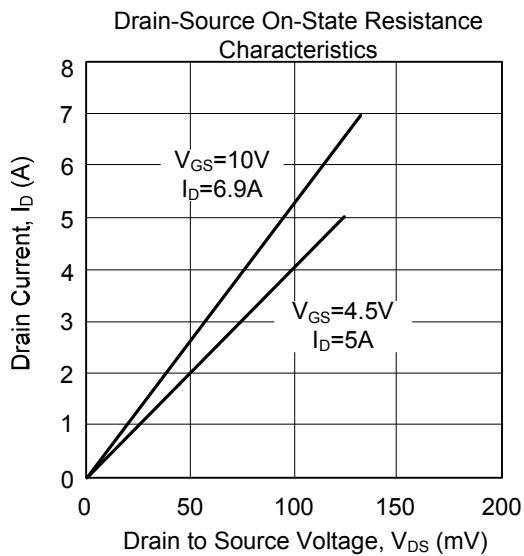
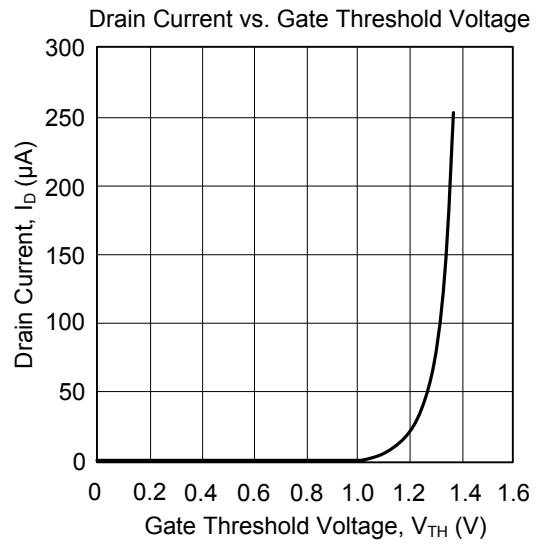
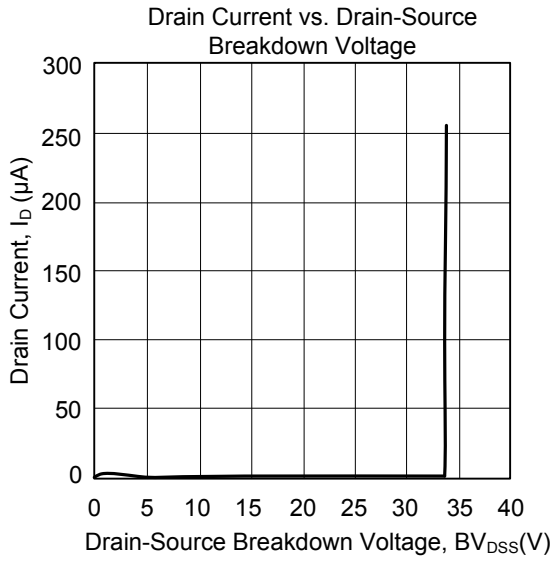
PARAMETER	SYMBOL	RATINGS	UNIT
Junction to Ambient	θ_{JA}	110	$^\circ\text{C/W}$

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

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
OFF CHARACTERISTICS						
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	μA
Gate-Source Leakage Current	I_{GSS}	$V_{DS} = 0\text{V}, V_{GS} = \pm 20\text{V}$			5	μA
ON CHARACTERISTICS						
Gate Threshold Voltage	$V_{GS(\text{TH})}$	$V_{DS} = V_{GS}, I_D = 250\mu\text{A}$	1	1.9	3	V
Drain-Source On-State Resistance (Note)	$R_{DS(\text{ON})}$	$V_{GS} = 10\text{V}, I_D = 6.9\text{A}$		22.5	28	$\text{m}\Omega$
		$V_{GS} = 4.5\text{V}, I_D = 5.0\text{A}$		34.5	42	$\text{m}\Omega$
DYNAMIC PARAMETERS						
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		pF
Reverse Transfer Capacitance	C_{RSS}			77	108	pF
SWITCHING PARAMETERS						
Turn-ON Delay Time	$t_{D(\text{ON})}$	$V_{GS} = 10\text{V}, V_{DS} = 15\text{V}, R_L = 2.2\Omega, R_{GEN} = 3\Omega$		4.6	7	ns
Turn-ON Rise Time	t_R			4.1	6.2	ns
Turn-OFF Delay Time	$t_{D(\text{OFF})}$			20.6	30	ns
Turn-OFF Fall-Time	t_F			5.2	7.5	ns
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		nC
Gate Drain Charge	Q_{GD}			3.2		nC
SOURCE-DRAIN DIODE RATINGS AND CHARACTERISTICS						
Drain-Source Diode Forward Voltage (Note)	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

Note: Pulse width $\leq 300\mu\text{s}$, duty cycle $\leq 2\%$.

■ TYPICAL CHARACTERISTICS



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