



**UTT08N02Z**

Preliminary

**Power MOSFET**

**N-CHANNEL LOGIC LEVEL  
ENHANCEMENT MODE**

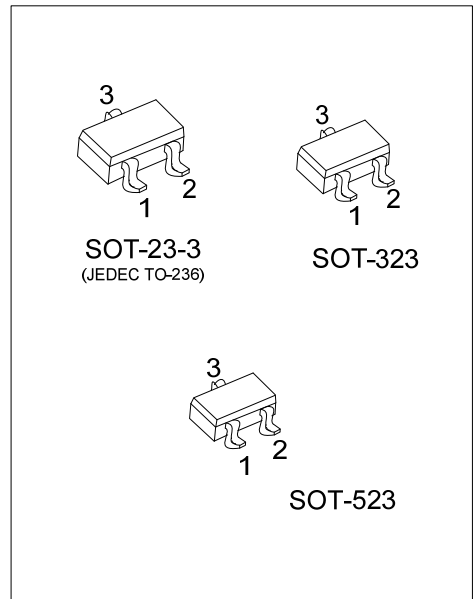
■ DESCRIPTION

The **UTT08N02Z** employs advanced MOSFET technology and features low gate charge while maintaining low on-resistance.

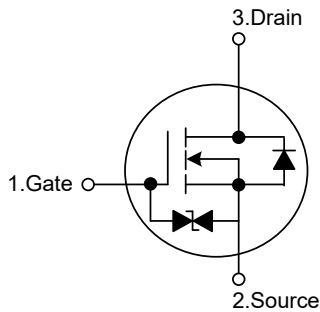
Optimized for switching applications, this device improves the overall efficiency of DC/DC converters and allows operation to higher switching frequencies.

■ FEATURES

- \*  $R_{DS(ON)} \leq 312\text{ m}\Omega$  @  $V_{GS}=4.5V, I_D=450mA$
- $R_{DS(ON)} \leq 461\text{ m}\Omega$  @  $V_{GS}=2.5V, I_D=450mA$
- $R_{DS(ON)} \leq 888\text{ m}\Omega$  @  $V_{GS}=1.8V, I_D=350mA$
- \* Low Capacitance
- \* Low Gate Charge
- \* Fast Switching Capability
- \* Avalanche Energy Specified
- \* With ESD protection



■ SYMBOL



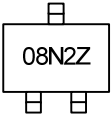
■ ORDERING INFORMATION

Ordering Number		Package	Pin Assignment			Packing
Lead Free	Halogen Free		1	2	3	
UTT08N02ZL-AE2-R	UTT08N02ZG-AE2-R	SOT-23-3	G	S	D	Tape Reel
UTT08N02ZL-AL3-R	UTT08N02ZG-AL3-R	SOT-323	G	S	D	Tape Reel
UTT08N02ZL-AN3-R	UTT08N02ZG-AN3-R	SOT-523	G	S	D	Tape Reel

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

<p>UTT08N02ZG-AE2-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) AE2: SOT-23-3, AL3: SOT-323, AN3: SOT-523</li> <li>(3) G: Halogen Free and Lead Free, L: Lead Free</li> </ul>
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■ MARKING



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

PARAMETER		SYMBOL	RATINGS	UNIT
Drain-Source Voltage		V <sub>DSS</sub>	20	V
Gate-Source Voltage		V <sub>GSS</sub>	±8	V
Continuous Drain Current	DC	I <sub>D</sub>	0.8	A
	Pulse		1.6	A
Power Dissipation	SOT-23-3	P <sub>D</sub>	0.3	W
	SOT-323		0.2	W
	SOT-523		0.15	W
Junction Temperature		T <sub>J</sub>	+150	°C
Storage Temperature		T <sub>STG</sub>	-55 ~ +150	°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. Repetitive Rating: Pulse width limited by maximum junction temperature.

■ THERMAL DATA

PARAMETER		SYMBOL	RATINGS	UNIT
Junction to Ambient	SOT-23-3	θ <sub>JA</sub>	416	°C/W
	SOT-323		625	°C/W
	SOT-523		833	°C/W

Note: Device mounted on FR-4 substrate P<sub>c</sub> board, 2oz copper, with 1inch square copper plate.

■ 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> =0V, I <sub>D</sub> =250μA	20			V
Zero Gate Voltage Drain Current	I <sub>DSS</sub>	V <sub>DS</sub> =20V, V <sub>GS</sub> =0V			1	μA
Gate-Body Leakage, Forward	I <sub>GSS</sub>	V <sub>DS</sub> =0V, V <sub>GS</sub> =±8V			±10	uA
<b>ON CHARACTERISTICS (Note)</b>						
Gate-Threshold Voltage	V <sub>GS(TH)</sub>	V <sub>DS</sub> =V <sub>GS</sub> , I <sub>D</sub> =250μA	0.3		1.2	V
Static Drain-Source On-Resistance	R <sub>DS(ON)</sub>	V <sub>GS</sub> =4.5V, I <sub>D</sub> =450mA			312	mΩ
		V <sub>GS</sub> =2.5V, I <sub>D</sub> =450mA			461	mΩ
		V <sub>GS</sub> =1.8V, I <sub>D</sub> =350mA			888	mΩ
<b>DYNAMIC PARAMETERS</b>						
Input Capacitance	C <sub>ISS</sub>	V <sub>DS</sub> =25V, V <sub>GS</sub> =0V, f=1MHz		27		pF
Output Capacitance	C <sub>OSS</sub>			14		pF
Reverse Transfer Capacitance	C <sub>RSS</sub>			9		pF
<b>SWITCHING PARAMETERS (Note)</b>						
Total Gate Charge	Q <sub>G</sub>	V <sub>DS</sub> =16V, V <sub>GS</sub> =8V, I <sub>D</sub> =0.8A		7		nC
Gate Source Charge	Q <sub>GS</sub>			1		nC
Gate Drain Charge	Q <sub>GD</sub>			1		nC
Turn-ON Delay Time	t <sub>D(ON)</sub>	V <sub>DS</sub> =10V, I <sub>D</sub> =0.8A, V <sub>GS</sub> =8V, R <sub>G</sub> =3Ω		2		ns
Turn-ON Rise Time	t <sub>R</sub>			19		ns
Turn-OFF Delay Time	t <sub>D(OFF)</sub>			35		ns
Turn-OFF Fall-Time	t <sub>F</sub>			31		ns
<b>SOURCE- DRAIN DIODE RATINGS AND CHARACTERISTICS</b>						
Max. Diode Forward Current	I <sub>S</sub>				0.8	A
Drain-Source Diode Forward Voltage	V <sub>SD</sub>	V <sub>GS</sub> =0V, I <sub>S</sub> =0.8A			1.6	V

Notes: 1. Pulse Test: Pulse width ≤ 300μs, Duty cycle ≤ 2%.  
 2. Essentially independent of operating temperature.

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