



UT3P01Z

Power MOSFET

P-CHANNEL POWER MOSFET

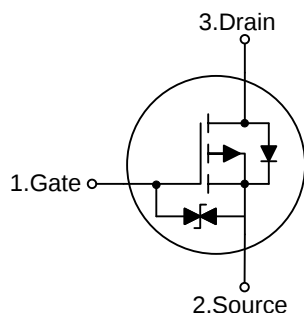
DESCRIPTION

The **UT3P01Z** uses UTC advanced technology to provide excellent $R_{DS(ON)}$, low gate charge and operated with low gate voltages. This device can be applied to general-purpose switching devices applications.

FEATURES

- * $R_{DS(ON)} \leq 10.4 \Omega$ @ $V_{GS} = -4V$, $I_D = -50mA$
- * Fast Switching Capability
- * Avalanche Energy Specified
- * Improved dv/dt Capability, High Ruggedness

SYMBOL



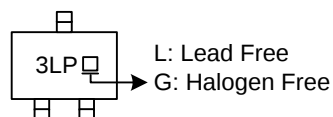
ORDERING INFORMATION

Ordering Number		Package	Pin Assignment			Packing
Lead Free	Halogen Free		1	2	3	
UT3P01ZL-AE2-R	UT3P01ZG-AE2-R	SOT-23-3	G	S	D	Tape Reel
UT3P01ZL-AL3-R	UT3P01ZG-AL3-R	SOT-323	G	S	D	Tape Reel
UT3P01ZL-AN3-R	UT3P01ZG-AN3-R	SOT-523	G	S	D	Tape Reel
UT3P01ZL-AQ3-R	UT3P01ZG-AQ3-R	SOT-723	G	S	D	Tape Reel

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

UT3P01ZG-AE2-R 		(1) R: Tape Reel (2) AE2: SOT-23-3, AE3: SOT-23, AB3: SOT-89 AQ3: SOT-723 (3) G: Halogen Free and Lead Free, L: Lead Free
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MARKING



■ 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}	± 10	V
Drain Current	DC	I_{D}	-0.1	A
	Pulse(Note 2)		-0.4	A
Power Dissipation	SOT-323/SOT-23-3	P_{D}	200	mW
	SOT-523		150	mW
	SOT-723		100	mW
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.

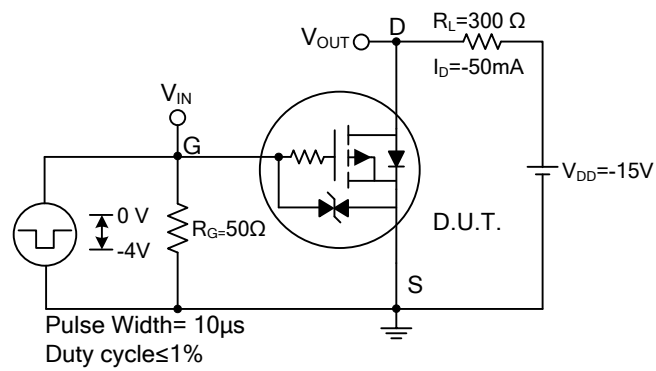
2. Repetitive Rating : Pulse width limited by maximum junction temperature.

3. Pulse width $\leq 10\mu\text{s}$, Duty cycle $\leq 1\%$.

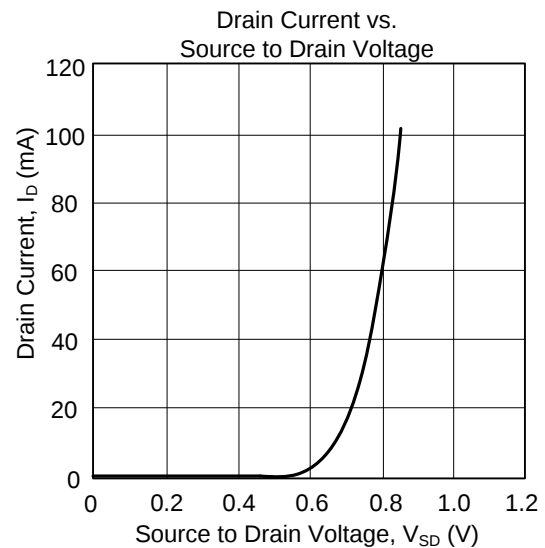
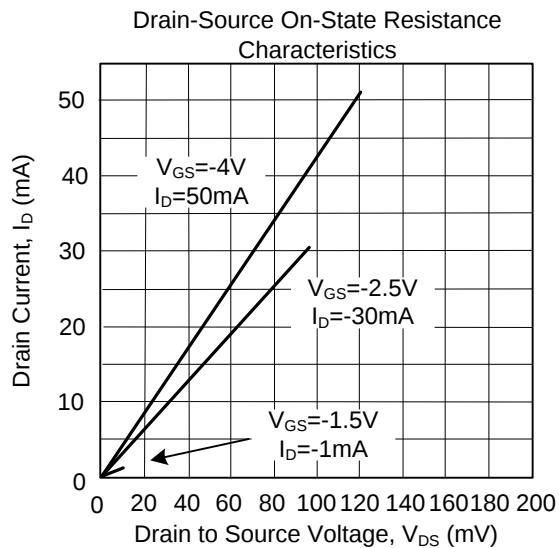
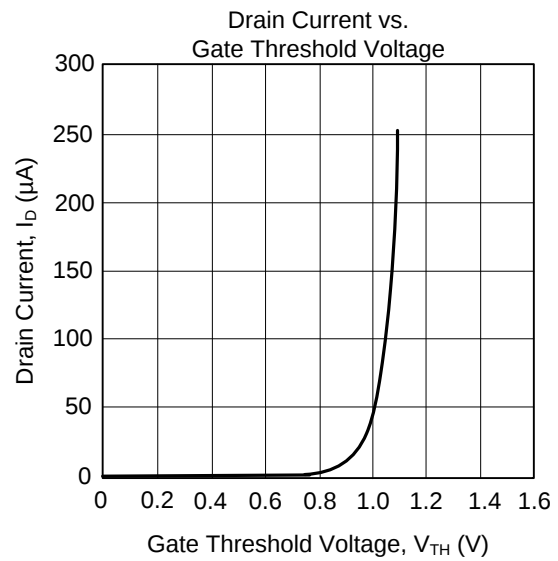
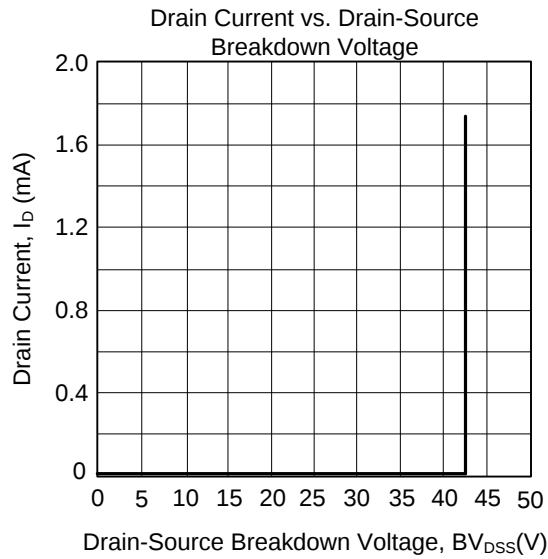
■ ELECTRICAL CHARACTERISTICS ($T_A=25^{\circ}\text{C}$, unless otherwise specified)

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
OFF CHARACTERISTICS						
Drain-Source Breakdown Voltage	BV _{DSS}	V _{GS} =0V, I _D =-1mA	-30			V
Drain-Source Leakage Current	I _{DSS}	V _{DS} =-30V, V _{GS} =0V			-1	μA
Gate-Source Leakage Current	I _{GSS}	V _{GS} =±8V, V _{DS} =0V			±10	μA
ON CHARACTERISTICS						
Cutoff Threshold Voltage	V _{GS(OFF)}	V _{DS} =-10V, I _D =-100μA	-0.4		-1.4	V
Static Drain-Source On-Resistance	R _{DS(ON)}	V _{GS} =-4V, I _D =-50mA		8	10.4	Ω
		V _{GS} =-2.5V, I _D =-30mA		11	15.4	Ω
		V _{GS} =-1.5V, I _D =-1mA		27	54	Ω
Forward Transconductance	g _{FS}	V _{DS} =-10V, I _D =-50mA	80	110		mS
DYNAMIC PARAMETERS						
Input Capacitance	C _{ISS}	V _{DS} =-10V, V _{GS} =0 V, f=1.0MHz		7.5		pF
Output Capacitance	C _{OSS}			5.7		pF
Reverse Transfer Capacitance	C _{RSS}			1.8		pF
SWITCHING PARAMETERS						
Total Gate Charge	Q _G	V _{DS} =-10V, V _{GS} =-10V, I _D =-100mA		1.43		nC
Gate Source Charge	Q _{GS}			0.18		nC
Gate Drain Charge	Q _{GD}			0.25		nC
Turn-ON Delay Time	t _{D(ON)}	See specified Test Circuit		24		ns
Turn-ON Rise Time	t _R			55		ns
Turn-OFF Delay Time	t _{D(OFF)}			120		ns
Turn-OFF Fall-Time	t _F			130		ns
SOURCE- DRAIN DIODE RATINGS AND CHARACTERISTICS						
Drain-Source Diode Forward Voltage	V _{SD}	I _S =-100mA, V _{GS} =0V		-0.83	-1.2	V

■ SWITCHING TIME TEST CIRCUIT



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. UTC reserves the right to make changes to information published in this document, including without limitation specifications and product descriptions, at any time and without notice. This document supersedes and replaces all information supplied prior to the publication hereof.