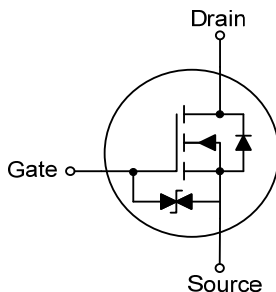


**UT3N01Z****Power MOSFET****N-CHANNEL SILICON MOSFET
GENERAL-PURPOSE
SWITCHING DEVICE
APPLICATIONS****DESCRIPTION**

The **UT3N01Z** uses UTC advanced technology to provide excellent $R_{DS(ON)}$, low gate charge and operation with low gate voltages. This device's general purpose is for switching device applications.

FEATURES

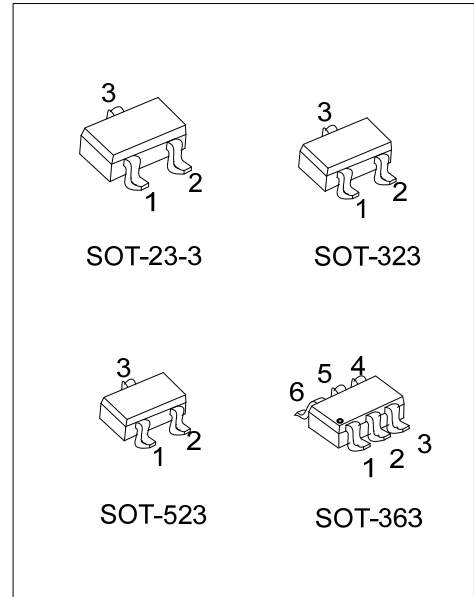
- * $R_{DS(ON)} \leq 2.0\Omega$ @ $V_{GS}=4V$, $I_D=80mA$
- $R_{DS(ON)} \leq 3.0\Omega$ @ $V_{GS}=2.5V$, $I_D=40mA$
- $R_{DS(ON)} \leq 12.8\Omega$ @ $V_{GS}=1.5V$, $I_D=10mA$
- * Ultra low gate charge (typical 5 nC)
- * Low reverse transfer capacitance (C_{RSS} = typical 7.5 pF)
- * Fast switching capability
- * Enhanced ESD capability

SYMBOL**ORDERING INFORMATION**

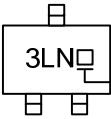
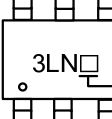
Ordering Number		Package	Pin Assignment						Packing
Lead Free	Halogen Free		1	2	3	4	5	6	
UT3N01ZL-AE2-R	UT3N01ZG-AE2-R	SOT-23-3	G	S	D	-	-	-	Tape Reel
UT3N01ZL-AL3-R	UT3N01ZG-AL3-R	SOT-323	G	S	D	-	-	-	Tape Reel
UT3N01ZL-AN3-R	UT3N01ZG-AN3-R	SOT-523	G	S	D	-	-	-	Tape Reel
UT3N01ZL-AL6-R	UT3N01ZG-AL6-R	SOT-363	S1	G1	D2	S2	G2	D1	Tape Reel

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

UT3N01ZG-AE2-R		(1) R: Tape Reel
(1) Packing Type		(2) AE2: SOT-23-3, AL3: SOT-323, AN3: SOT-523
(2) Package Type		AL6: SOT-363
(3) Green Package		(3) G: Halogen Free and Lead Free, L: Lead Free



■ MARKING

SOT-23-3 / SOT-323 / SOT-523	SOT-363
 3LN□ L: Lead Free G: Halogen Free	 3LN□ L: Lead Free G: Halogen Free

■ **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	0.15	A
	Pulse(Note 2)		0.6	A
Power Dissipation	SOT-23-3	P_D	330	mW
	SOT-323		200	
	SOT-523		150	
	SOT-363		200	
Operating Temperature		T_{OPR}	$-40 \sim +85$	$^\circ\text{C}$
Storage Temperature		T_{STG}	$-55 \sim +150$	$^\circ\text{C}$

Note: 1. Absolute maximum ratings are those values beyond which the device could be permanently damaged.

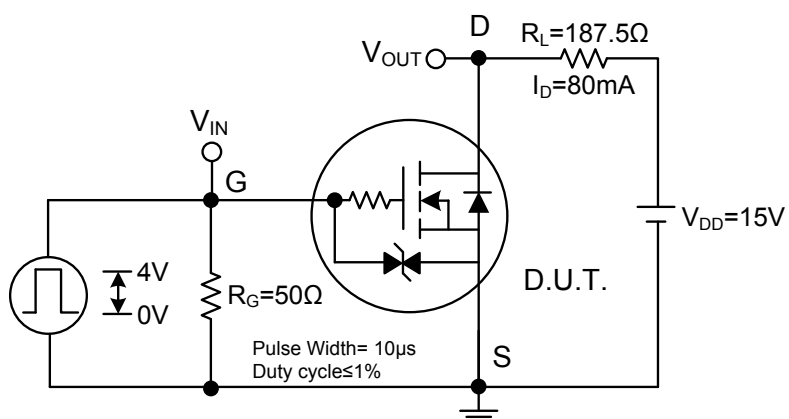
Absolute maximum ratings are stress ratings only and functional device operation is not implied.

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

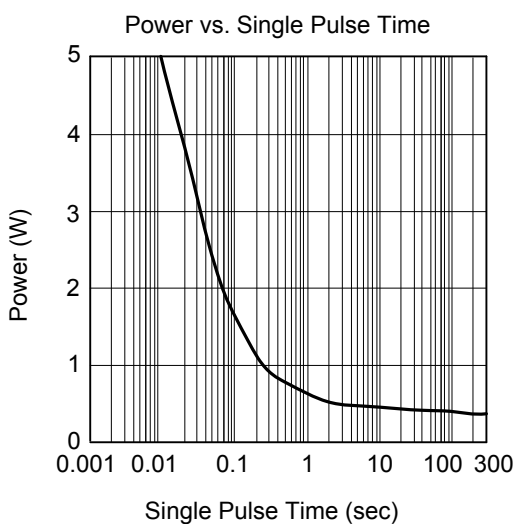
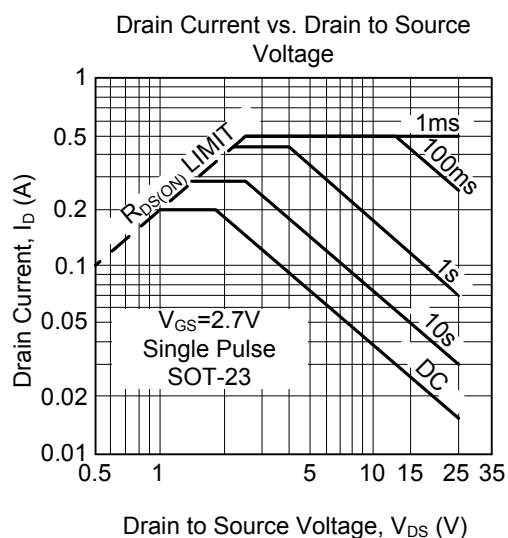
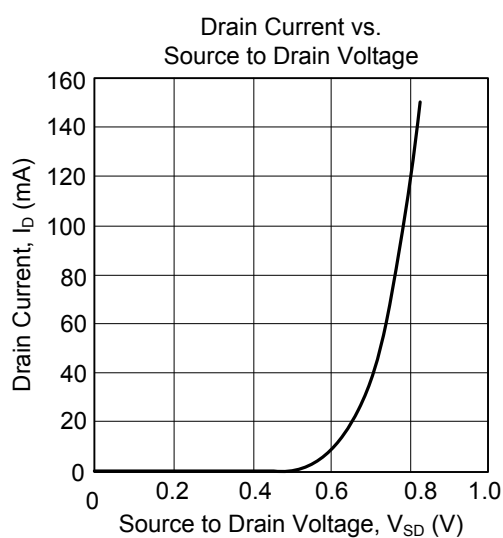
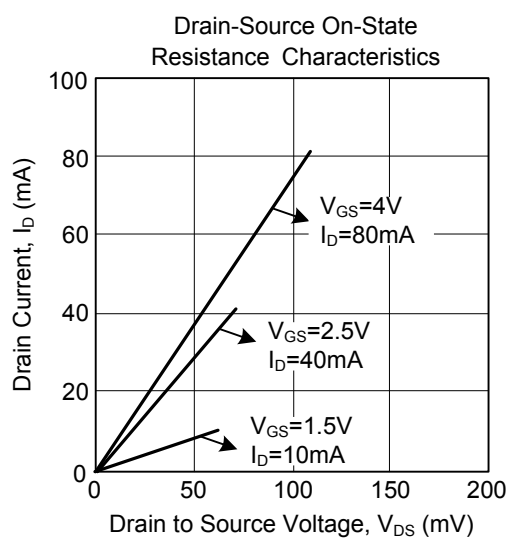
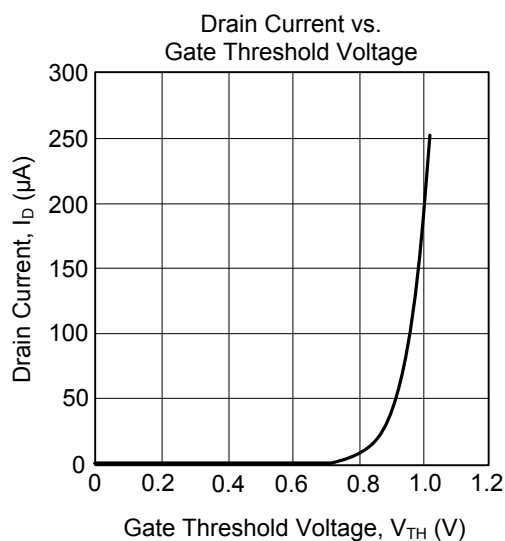
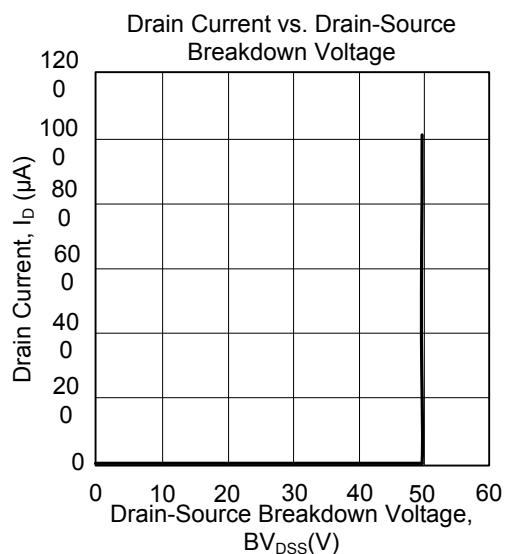
■ **ELECTRICAL CHARACTERISTICS** ($T_A = 25^\circ\text{C}$, unless otherwise specified)

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		1.3	V
Static Drain-Source On-Resistance	R _{DS(ON)}	V _{GS} =4V, I _D =80mA		1.3	2.0	Ω
		V _{GS} =2.5V, I _D =40mA		1.7	3.0	Ω
		V _{GS} =1.5V, I _D =10mA		5.8	12.8	Ω
DYNAMIC PARAMETERS						
Input Capacitance	C _{ISS}	V _{DS} =10V, V _{GS} =0 V, f=1.0MHz		18		pF
Output Capacitance	C _{OSS}			11		pF
Reverse Transfer Capacitance	C _{RSS}			5.2		pF
SWITCHING PARAMETERS						
Total Gate Charge	Q _G	V _{DS} =10V, V _{GS} =10V, I _D =150mA		5	8	nC
Gate Source Charge	Q _{GS}			0.46		nC
Gate Drain Charge	Q _{GD}			0.56		nC
Turn-ON Delay Time	t _{D(ON)}	See specified Test Circuit		31	35	ns
Turn-ON Rise Time	t _R			19	23	ns
Turn-OFF Delay Time	t _{D(OFF)}			55	60	ns
Turn-OFF Fall-Time	t _F			22	28	ns
SOURCE- DRAIN DIODE RATINGS AND CHARACTERISTICS						
Drain-Source Diode Forward Voltage	V _{SD}	I _S =150mA, V _{GS} =0V		0.87	1.2	V

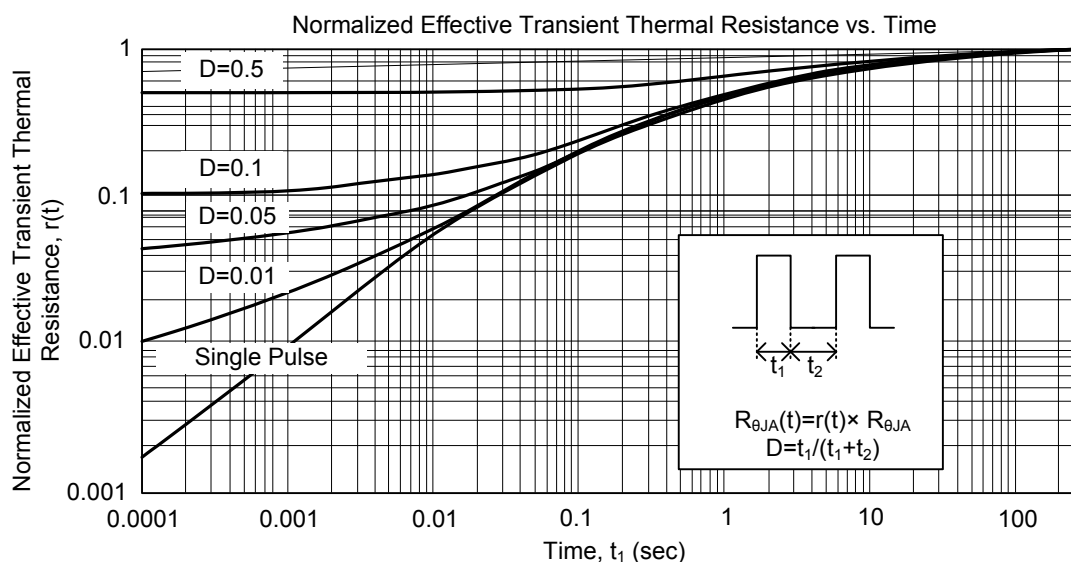
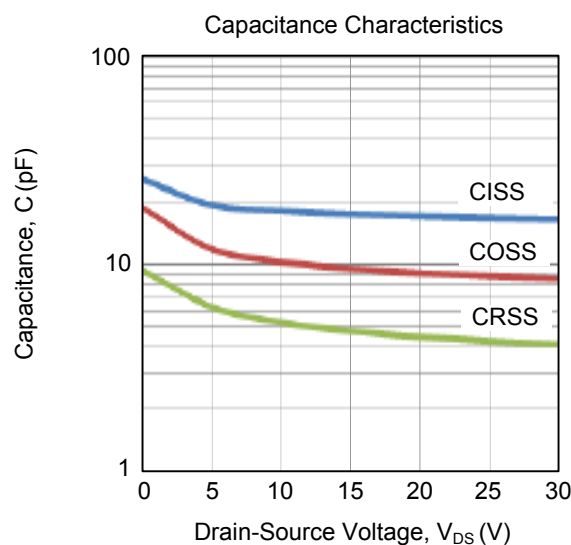
■ SWITCHING TIME TEST CIRCUIT



TYPICAL CHARACTERISTICS



■ TYPICAL CHARACTERISTICS (Cont.)



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