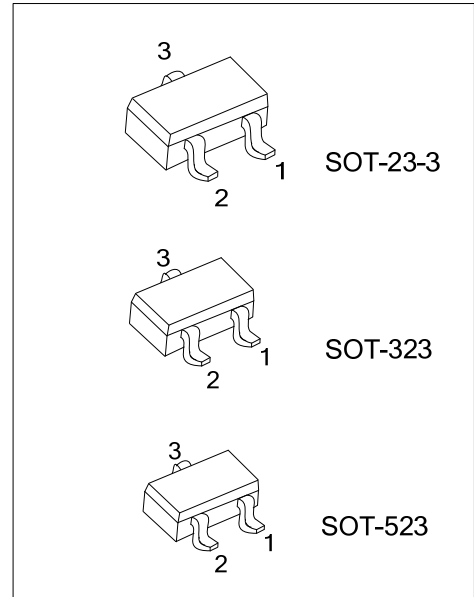
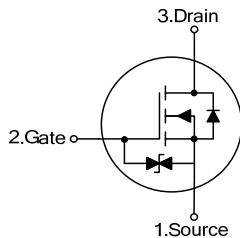


**UT3N01Z****Power MOSFET****N-CHANNEL SILICON MOSFET
GENERAL-PURPOSE
SWITCHING DEVICE
APPLICATIONS****DESCRIPTION**

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

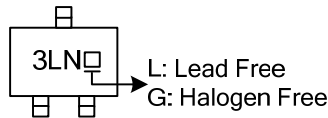
- * $R_{DS(ON)} < 2.0\Omega$ @ $V_{GS}=4V$, $I_D=80mA$
- * $R_{DS(ON)} < 3.0\Omega$ @ $V_{GS}=2.5V$, $I_D=40mA$
- * $R_{DS(ON)} < 12.8\Omega$ @ $V_{GS}=1.5V$, $I_D=10mA$
- * Ultra low gate charge (typical 5 nC)
- * Low reverse transfer capacitance (C_{RSS} = typical 7.5 pF)
- * Fast switching capability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

SYMBOL**ORDERING INFORMATION**

Ordering Number		Package	Pin Assignment			Packing
Lead Free	Halogen Free		1	2	3	
UT3N01ZL-AE2-R	UT3N01ZG-AE2-R	SOT-23-3	S	G	D	Tape Reel
UT3N01ZL-AL3-R	UT3N01ZG-AL3-R	SOT-323	S	G	D	Tape Reel
UT3N01ZL-AN3-R	UT3N01ZG-AN3-R	SOT-523	S	G	D	Tape Reel

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

MARKING



■ ABSOLUTE MAXIMUM RATINGS ($T_A = 25^\circ\text{C}$, unless otherwise specified)

PARAMETER	SYMBOL	RATINGS	UNIT
Drain-Source Voltage	V_{DS}	30	V
Gate-Source Voltage	V_{GS}	± 10	V
Drain Current	DC	0.15	A
	Pulse(Note 2)	0.6	A
Power Dissipation	SOT-23-3	330	mW
	SOT-323	200	
	SOT-523	150	
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.

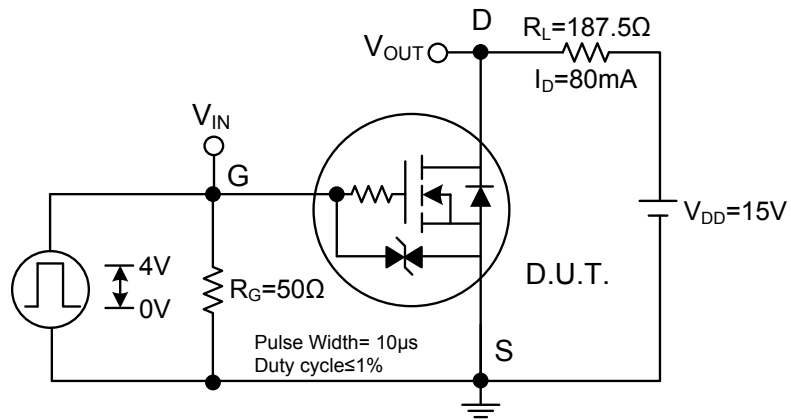
Absolute maximum ratings are stress ratings only and functional device operation is not implied.

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

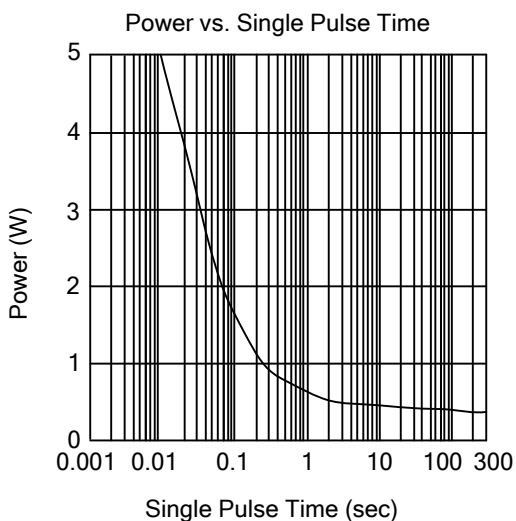
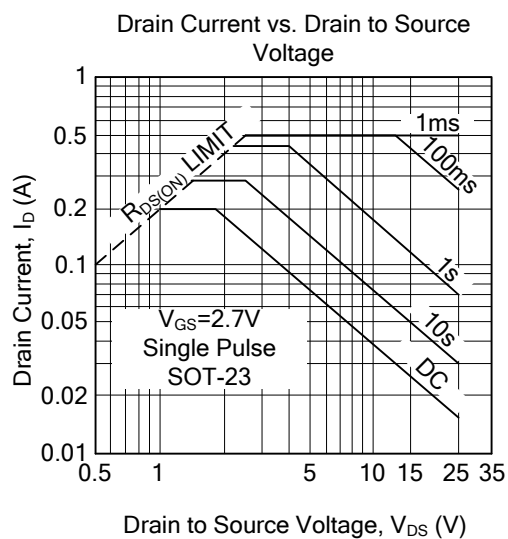
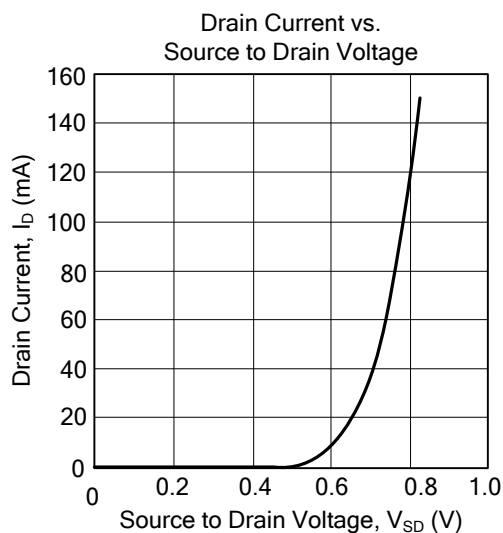
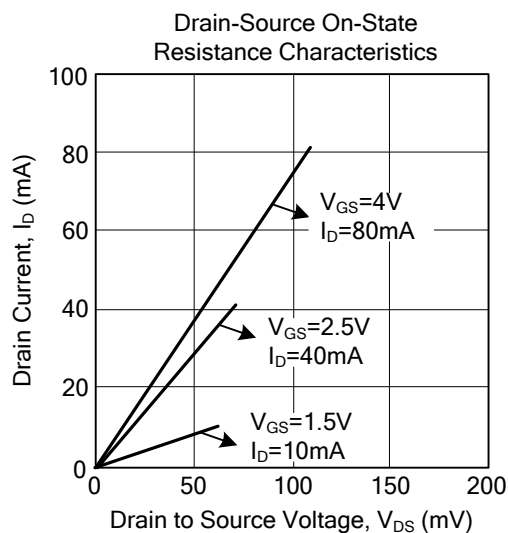
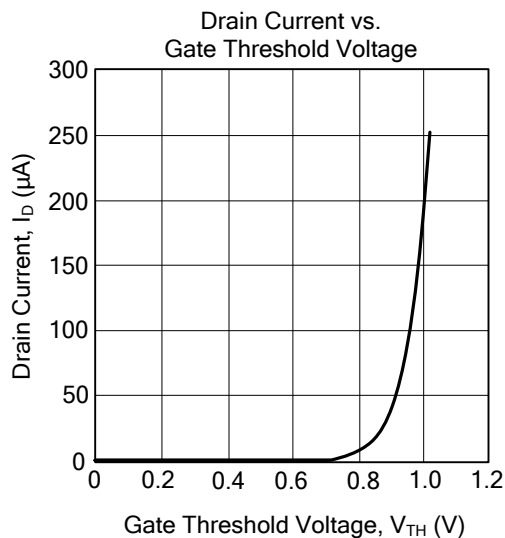
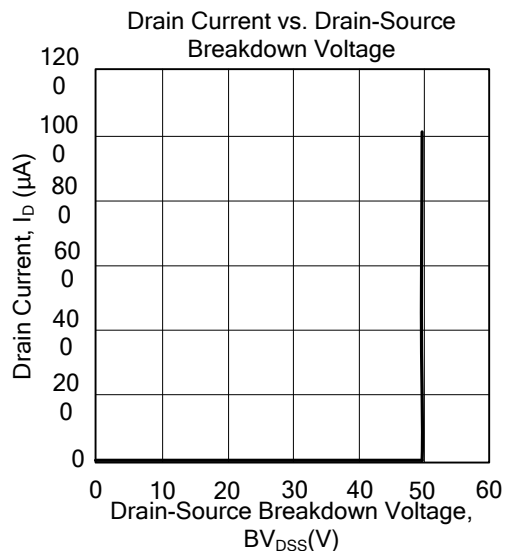
■ ELECTRICAL CHARACTERISTICS ($T_A = 25^\circ\text{C}$, unless otherwise specified)

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}			7.5		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

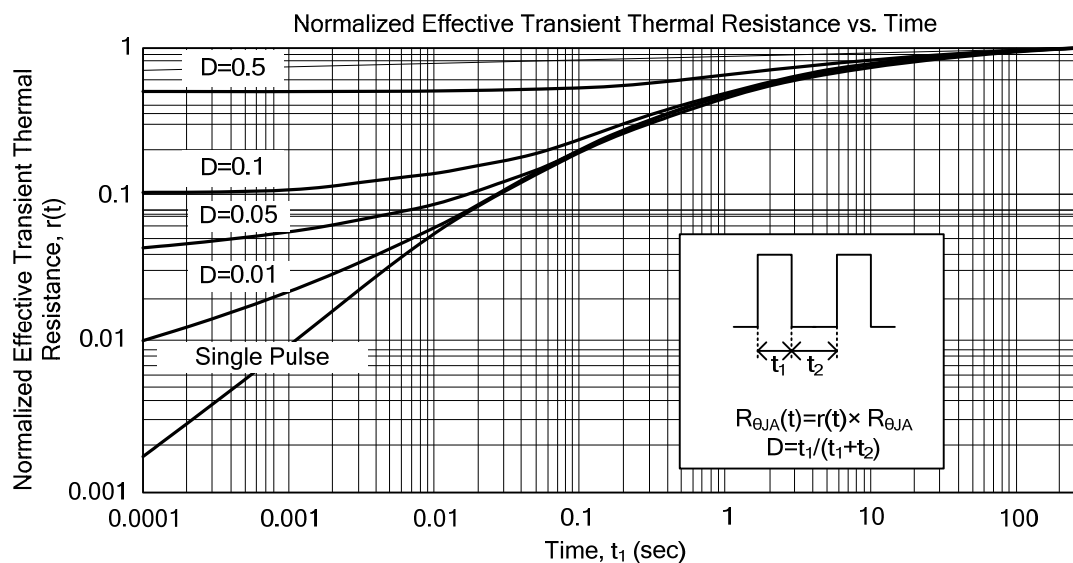
■ SWITCHING TIME TEST CIRCUIT



■ TYPICAL CHARACTERISTICS



■ TYPICAL CHARACTERISTICS(Cont.)



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