



4N30Z

Power MOSFET

4A, 300V N-CHANNEL POWER MOSFET

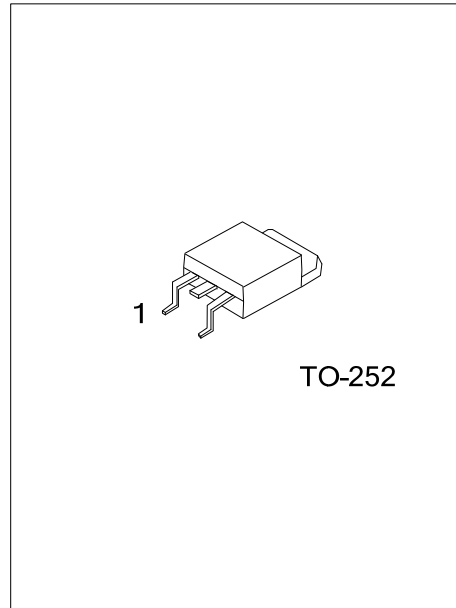
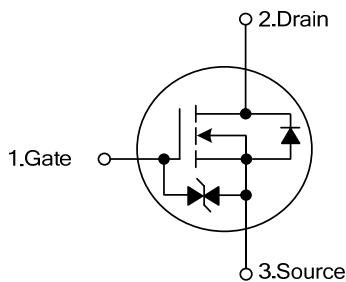
■ DESCRIPTION

The UTC **4N30Z** is an N-channel mode power MOSFET using UTC's advanced technology to provide customers with a minimum on-state resistance, low gate charge and superior switching performance.

■ FEATURES

- * $R_{DS(ON)} < 2\Omega$ @ $V_{GS}=10V, I_D=4A$
- * High switching speed
- * Typically 3.2nC low gate charge
- * 100% avalanche tested
- * Enhanced ESD capability

■ SYMBOL



■ ORDERING INFORMATION

Ordering Number		Package	Pin Assignment			Packing
Lead Free	Halogen Free		1	2	3	
4N30ZL-TN3-R	4N30ZG-TN3-R	TO-252	G	D	S	Tape Reel
4N30ZL-TN3-T	4N30ZG-TN3-T	TO-252	G	D	S	Tube

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

<p>4N30ZL-TN3-R</p>	<p>(1) R: Tape Reel, T: Tube</p> <p>(2) TN3: TO-252</p> <p>(3) G: Halogen Free, L: Lead Free</p>
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■ ABSOLUTE MAXIMUM RATINGS

PARAMETER SYMBOL			RATINGS	UNIT	
Drain-Source Voltage		V_{DSS}	300	V	
Gate-Source Voltage		V_{GSS}	± 20	V	
Continuous Drain Current		I_D	4	A	
Avalanche Current		I_{AR}	4	A	
Avalanche Energy	Single Pulsed	E_{AS}	52	mJ	
	Repetitive	E_{AR}	52	mJ	
Power Dissipation		P_D	1.14	W	
Junction Temperature		T_J	+150	°C	
Storage Temperature		T_{STG}	-55~	+150	°C

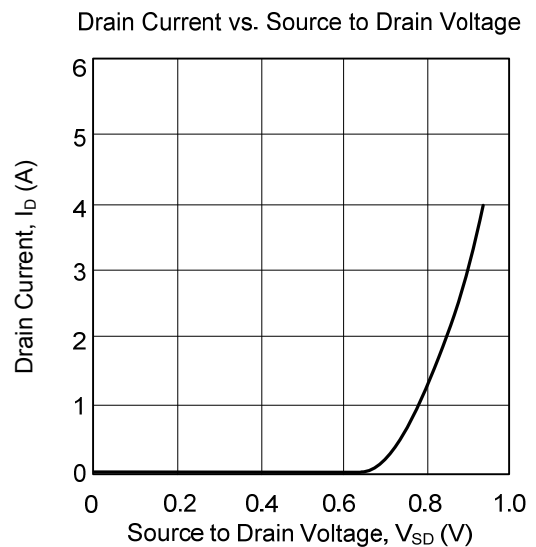
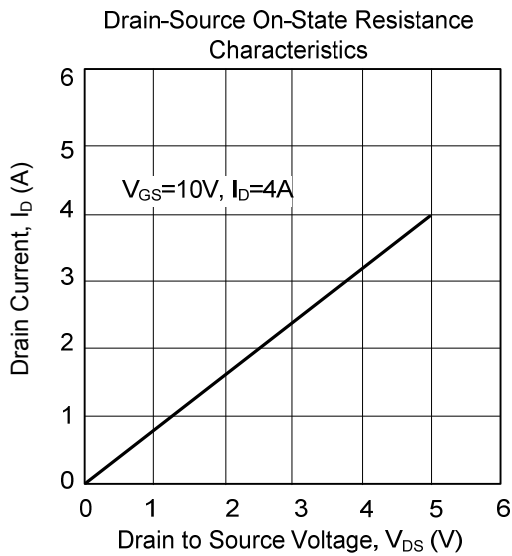
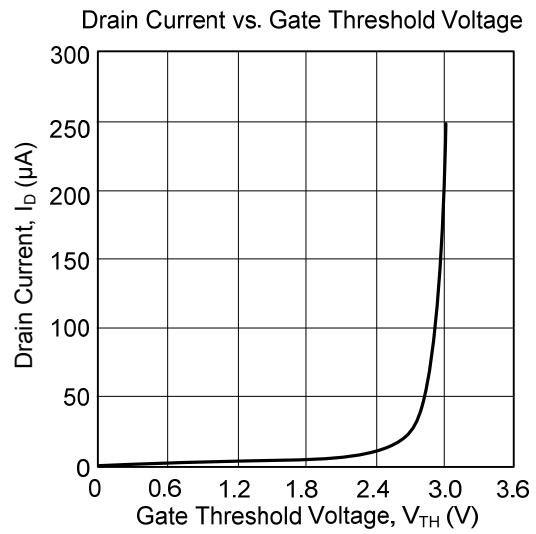
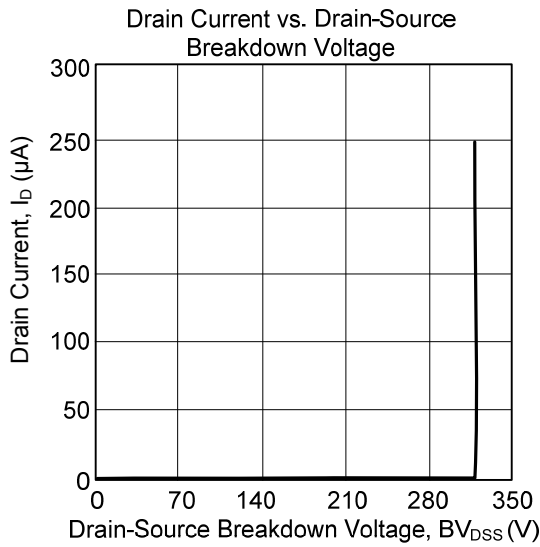
Note: Absolute maximum ratings are those values beyond which the device could be permanently damaged.

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

■ ELECTRICAL CHARACTERISTICS

PARAMETER		SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
OFF CHARACTERISTICS							
Drain-Source Breakdown Voltage		BV_{DSS}	$I_D=250\mu A, V_{DS}=0V$				V
Drain-Source Leakage Current		I_{DSS}	$V_{DS}=300V$			1	μA
Gate-Source Leakage Current	Forward	I_{GSS}	$V_{GS}=+20V, V_{DS}=0V$			± 10	μA
	Reverse		$V_{GS}=-20V, V_{DS}=0V$			± 10	μA
ON CHARACTERISTICS							
Gate Threshold Voltage		$V_{GS(TH)}$	$I_D=250\mu A$	2		4	V
Static Drain-Source On-State Resistance		$R_{DS(ON)}$	$V_{GS}=10V, I_D=4A$			2	Ω
DYNAMIC PARAMETERS							
Input Capacitance	C_{ISS}	$V_{GS}=0V, V_{DS}=25V, f=1MHz$				850	pF
Output Capacitance	C_{OSS}					250	pF
Reverse Transfer Capacitance	C_{RSS}					200	pF
SWITCHING PARAMETERS							
Total Gate Charge	Q_G	$V_{DD}=50V, I_D=4A, I_G=100\mu A, V_{GS}=10V$		3.2			nC
Gate to Source Charge	Q_{GS}				0.64		nC
Gate to Drain Charge	Q_{GD}				1.6		nC
Turn-ON Delay Time	$t_{D(ON)}$	$V_{DD}=30V, I_D=4A, R_G=25\Omega, V_{GS}=0\sim 10V$			6		ns
Rise Time	t_R				38		ns
Turn-OFF Delay Time	$t_{D(OFF)}$				11		ns
Fall-Time	t_F				13		ns
SOURCE- DRAIN DIODE RATINGS AND CHARACTERISTICS							
Maximum Body-Diode Continuous Current		I_S				4	A
Maximum Body-Diode Pulsed Current		I_{SM}				16	A
Drain-Source Diode Forward Voltage		V_{SD}	$I_S=4A$			1.48	V

TYPICAL CHARACTERISTICS



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