



4N30

Power MOSFET

4A, 300V N-CHANNEL POWER MOSFET

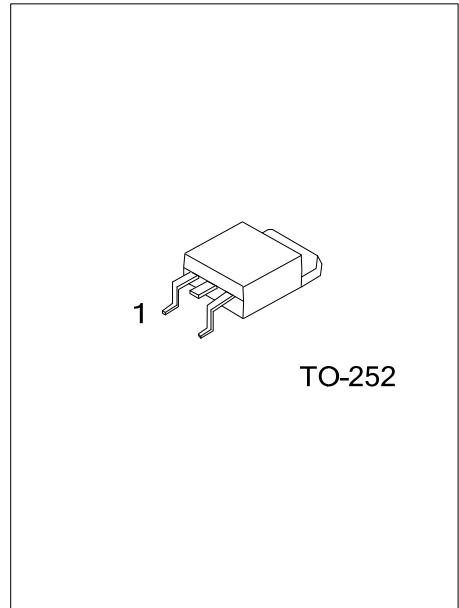
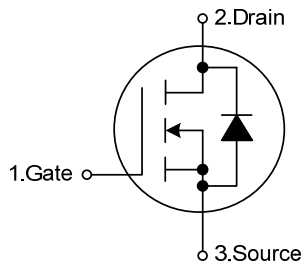
DESCRIPTION

The UTC **4N30** 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

SYMBOL



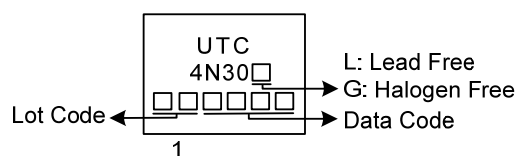
ORDERING INFORMATION

Ordering Number		Package	Pin Assignment			Packing
Lead Free	Halogen Free		1	2	3	
4N30L-TN3-R	4N30G-TN3-R	TO-252	G	D	S	Tape Reel

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

<p>4N30G-TN3-R</p> <p>(1)Packing Type</p> <p>(2)Package Type</p> <p>(3)Green Package</p>	<p>(1) R: Tape Reel</p> <p>(2) TN3: TO-252</p> <p>(3) G: Halogen Free and Lead Free, L: Lead Free</p>
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MARKING



■ 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	$^{\circ}\text{C}$
Storage Temperature		T_{STG}	-55 ~ +150	$^{\circ}\text{C}$

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.

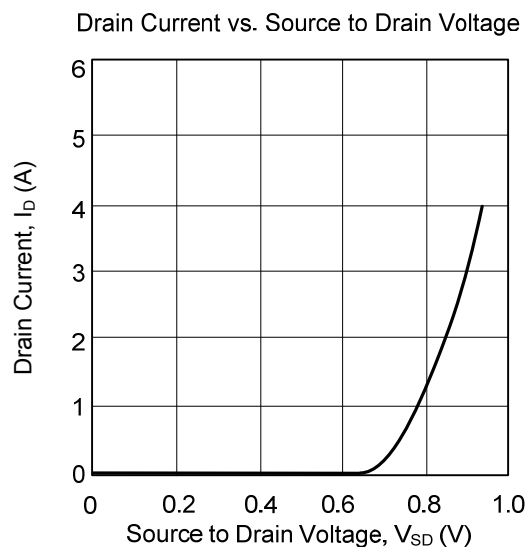
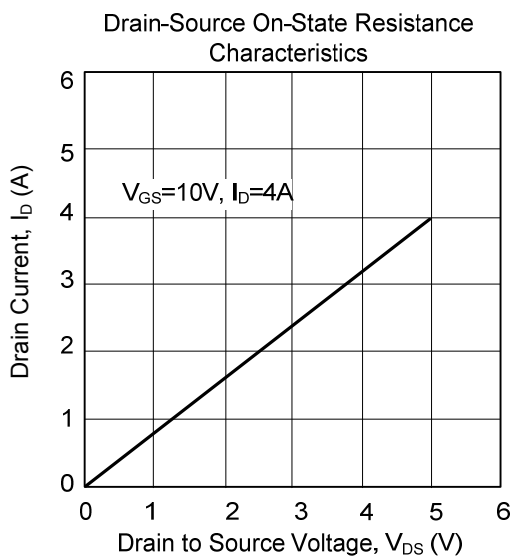
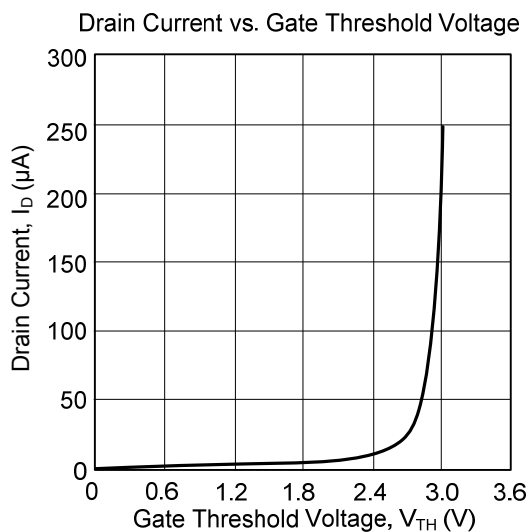
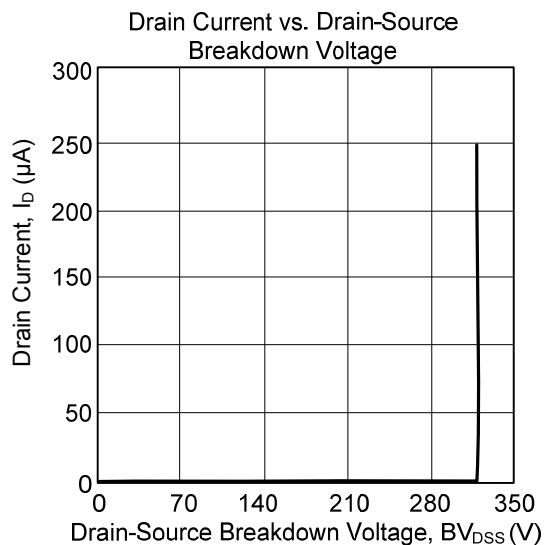
■ THERMAL DATA

PARAMETER	SYMBOL	RATINGS	UNIT
Junction to Ambient	θ_{JA}	110	$^{\circ}\text{C}/\text{W}$
Junction to Case	θ_{JC}	2.5	$^{\circ}\text{C}/\text{W}$

■ ELECTRICAL CHARACTERISTICS

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
OFF CHARACTERISTICS						
Drain-Source Breakdown Voltage	BV_{DSS}	$I_D=250\mu\text{A}, V_{DS}=0\text{V}$	300			V
Drain-Source Leakage Current	I_{DSS}	$V_{DS}=300\text{V}$			1	μA
Gate-Source Leakage Current	I_{GSS}	Forward			± 100	nA
		Reverse			± 100	nA
ON CHARACTERISTICS						
Gate Threshold Voltage	$V_{GS(TH)}$	$I_D=250\mu\text{A}$	2		4	V
Static Drain-Source On-State Resistance	$R_{DS(ON)}$	$V_{GS}=10\text{V}, I_D=4\text{A}$			2	Ω
DYNAMIC PARAMETERS						
Input Capacitance	C_{ISS}	$V_{GS}=0\text{V}, V_{DS}=25\text{V}, f=1\text{MHz}$			850	pF
Output Capacitance	C_{OSS}				250	pF
Reverse Transfer Capacitance	C_{RSS}				200	pF
SWITCHING PARAMETERS						
Total Gate Charge	Q_G	$V_{DD}=50\text{V}, I_D=4\text{A}, I_G=100\mu\text{A}, V_{GS}=10\text{V}$		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	$t_{D(ON)}$	$V_{DD}=30\text{V}, I_D=4\text{A}, R_G=25\Omega, V_{GS}=0\sim 10\text{V}$		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}	$I_S=4\text{A}$	0.1		1.48	V

TYPICAL CHARACTERISTICS



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