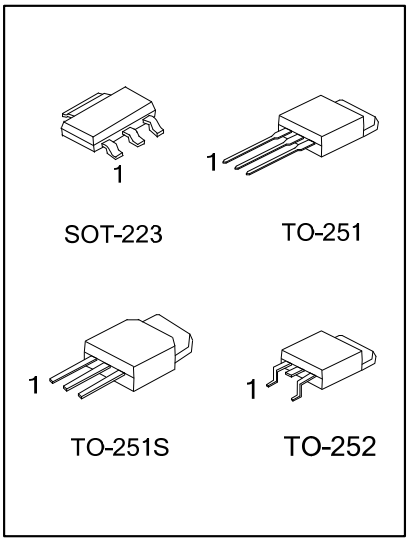
UF2N30Z

Power MOSFET

2A, 300V N-CHANNEL POWER MOSFET



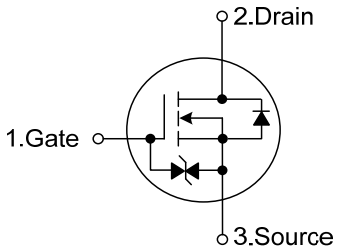
■ DESCRIPTION

The UTC **UF2N30Z** is an N-channel enhancement 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

* $R_{DS(ON)}$ < 2.5Ω @ V_{GS}=10V, I_D=1A
* High switching speed
* Typically 4nC low gate charge
* 100% avalanche tested

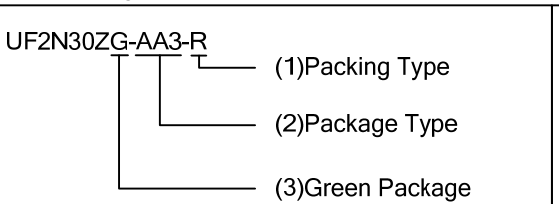
■ SYMBOL



■ ORDERING INFORMATION

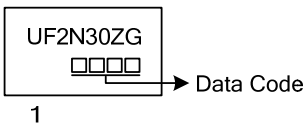
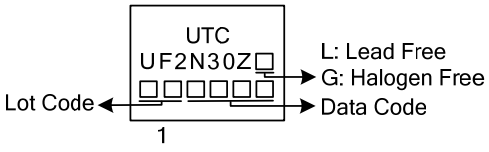
Ordering Number		Package	Pin Assignment			Packing
Lead Free	Halogen Free		1	2	3	
-	UF2N30ZG-AA3-R	SOT-223	G	D	S	Tape Reel
UF2N30ZL-TM3-T	UF2N30ZG-TM3-T	TO-251	G	D	S	Tube
UF2N30ZL-TMS-T	UF2N30ZG-TMS-T	TO-251S	G	D	S	Tube
UF2N30ZL-TN3-T	UF2N30ZG-TN3-T	TO-252	G	D	S	Tube

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



(1) R: Tape Reel, T: Tube
(2) AA3: SOT-223, TM3: TO-251, TMS: TO-251S
TN3: TO-252
(3) L: Lead Free, G: Halogen Free and Lead Free

■ MARKING

SOT-223	TO-251 / TO-251S / TO-252
	

■ ABSOLUTE MAXIMUM RATINGS

PARAMETER		SYMBOL	RATINGS	UNIT
Drain-Source Voltage		V_{DSS}	300	V
Gate-Source Voltage		V_{GSS}	±20	V
Continuous Drain Current	Continuous	I_D	2	A
	Pulsed	I_{DM}	8	A
Avalanche Energy		E_{AS}	52	mJ
Power Dissipation (T_C=25°C)	SOT-223	P_D	0.8	W
	TO-251/TO-251S TO-252		1.13	
Junction Temperature		T_J	+150	°C
Storage Temperature Range		T_{STG}	-55~+150	°C

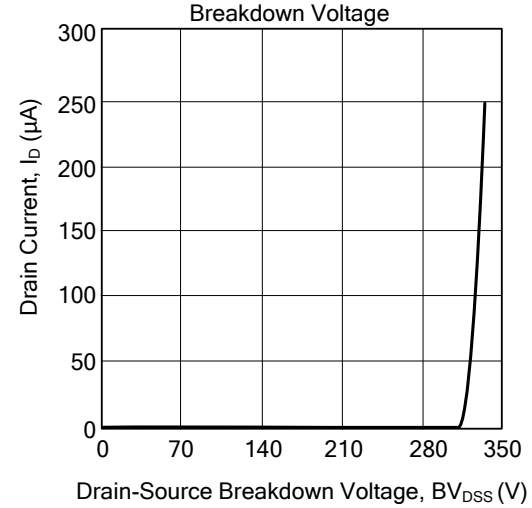
Note: Absolute maximum ratings are those values beyond which the device could be permanently damaged. Absolute maximum ratings are stress ratings only and functional device operation is not implied.

■ ELECTRICAL CHARACTERISTICS

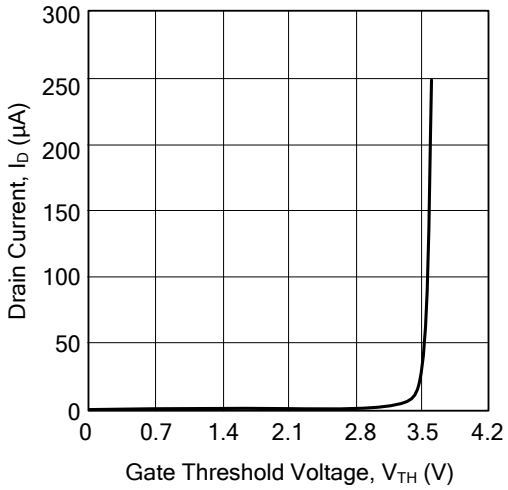
PARAMETER		SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
OFF CHARACTERISTICS							
Drain-Source Breakdown Voltage		BV_{DSS}	I_D=250μA, V_{GS}=0V	300			V
Drain-Source Leakage Current		I_{DSS}	V_{DS}=300V			1	μA
Gate-Source Leakage Current	Forward	I_{GSS}	V_{GS}=+20V, V_{DS}=0V			10	μA
	Reverse		V_{GS}=-20V, V_{DS}=0V			-10	μA
ON CHARACTERISTICS							
Gate Threshold Voltage		$V_{GS(TH)}$	I_D=250μA	2		4	V
Static Drain-Source On-State Resistance		$R_{DS(ON)}$	V_{GS}=10V, I_D=1A			2.5	Ω
DYNAMIC PARAMETERS							
Input Capacitance		C_{ISS}	V_{GS}=0V, V_{DS}=25V, f=1MHz		200		pF
Output Capacitance		C_{OSS}			90		pF
Reverse Transfer Capacitance		C_{RSS}			30		pF
SWITCHING PARAMETERS							
Total Gate Charge		Q_G	V_{DD}=50V, I_D=1.3A, I_G=100μA, V_{GS}=10V		4	6	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=0.5A, R_G=25Ω, V_{GS}=0~10V		29	35	ns
Rise Time		t_R			110	125	ns
Turn-OFF Delay Time		$t_{D(OFF)}$			50	56	ns
Fall-Time		t_F			99	120	ns
SOURCE- DRAIN DIODE RATINGS AND CHARACTERISTICS							
Maximum Body-Diode Continuous Current		I_S				2	A
Maximum Body-Diode Pulsed Current		I_{SM}				8	A
Drain-Source Diode Forward Voltage		V_{SD}	I_S=2A			1.3	V

■ TYPICAL CHARACTERISTICS

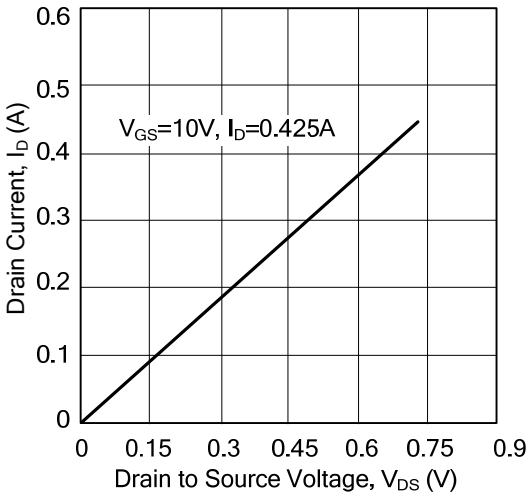
Drain Current vs. Drain-Source Breakdown Voltage



Drain Current vs. Gate Threshold Voltage



Drain-Source On-State Resistance Characteristics



Drain Current vs. Source to Drain Voltage