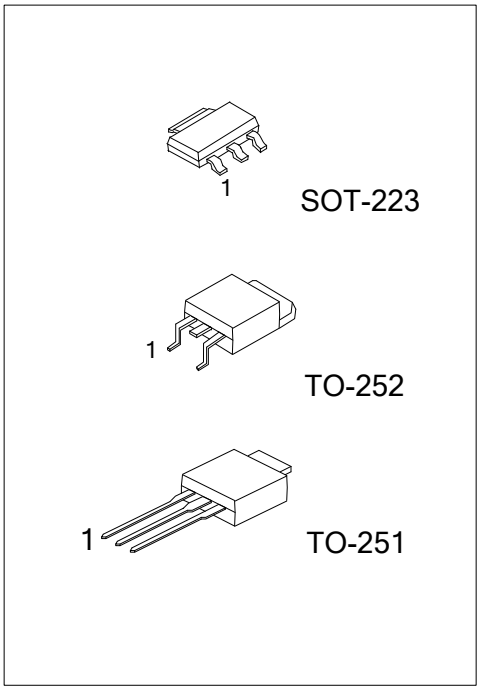
UF3N25Z

Power MOSFET

3A, 250V N-CHANNEL POWER MOSFET



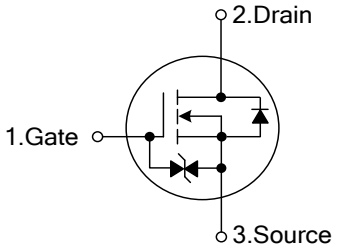
■ DESCRIPTION

The UTC **UF3N25Z** 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

* $R_{DS(ON)}$<1.7Ω @ V_{GS}=10V, I_D=3A
* 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	
UF3N25ZL-AA3-R	UF3N25ZG-AA3-R	SOT-223	G	D	S	Tape Reel
UF3N25ZL-TM3-T	UF3N25ZG-TM3-T	TO-251	G	D	S	Tube
UF3N25ZL-TN3-R	UF3N25ZG-TN3-R	TO-252	G	D	S	Tape Reel
UF3N25ZL-TN3-T	UF3N25ZG-TN3-T	TO-252	G	D	S	Tube

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

UF3N25ZL-AA3-R

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

■ ABSOLUTE MAXIMUM RATINGS

PARAMETER		SYMBOL	RATINGS	UNIT
Drain-Source Voltage		V_{DSS}	250	V
Gate-Source Voltage		V_{GSS}	±20	V
Continuous Drain Current	Continuous	I_D	3	A
	Pulsed	I_{DM}	12	A
Avalanche Energy		E_{AS}	52	mJ
Power Dissipation	SOT-223	P_D	0.8	W
	TO-251/TO-252		1.14	W
Junction Temperature		T_J	+150	°C
Storage Temperature Range		T_{STG}	-55~+150	°C

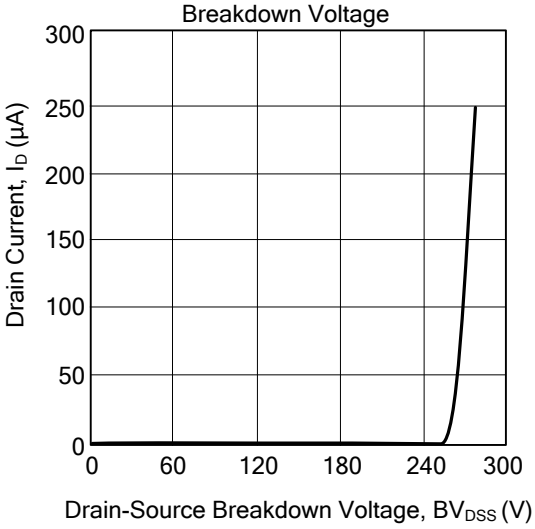
Note: Absolute maximum ratings are those values beyond which the device could be permanently damaged. Absolute maximum ratings are stress ratings only and functional device operation is not implied.

■ ELECTRICAL CHARACTERISTICS

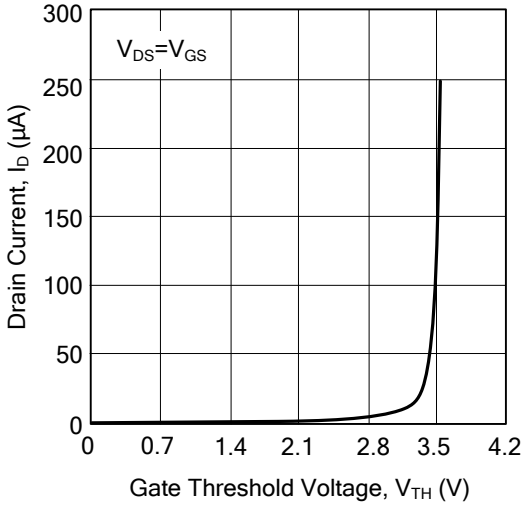
PARAMETER		SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
OFF CHARACTERISTICS							
Drain-Source Breakdown Voltage		BV_{DSS}	I_D=250μA, V_{GS}=0V	250			V
Drain-Source Leakage Current		I_{DSS}	V_{DS}=250V			1	μA
Gate-Source Leakage Current	Forward	I_{GSS}	V_{GS}=+20V, V_{DS}=0V			10	μA
	Reverse		V_{GS}=-20V, 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=3A			1.7	Ω
DYNAMIC PARAMETERS							
Input Capacitance		C_{ISS}	V_{GS}=0V, V_{DS}=25V, f=1MHz		190		pF
Output Capacitance		C_{OSS}			80		pF
Reverse Transfer Capacitance		C_{RSS}			30		pF
SWITCHING PARAMETERS							
Total Gate Charge		Q_G	V_{DD}=50V, I_D=3A, I_G=100μA, 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=1A, R_G=25Ω, V_{GS}=0~10V		20		ns
Rise Time		t_R			90		ns
Turn-OFF Delay Time		$t_{D(OFF)}$			30		ns
Fall-Time		t_F			50		ns
SOURCE- DRAIN DIODE RATINGS AND CHARACTERISTICS							
Maximum Body-Diode Continuous Current		I_S				3	A
Maximum Body-Diode Pulsed Current		I_{SM}				12	A
Drain-Source Diode Forward Voltage		V_{SD}	I_S=3A			1.3	V

■ TYPICAL CHARACTERISTICS

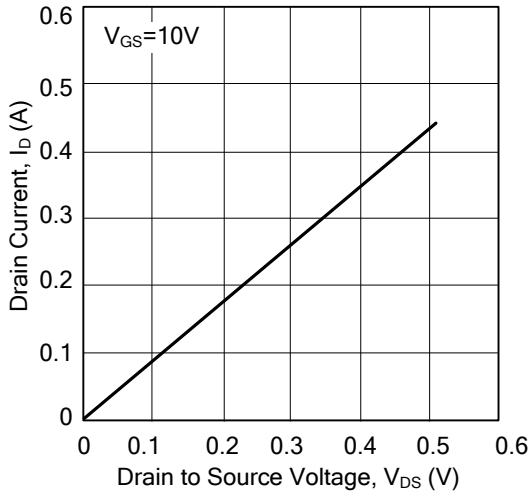
Drain Current vs. Drain-Source Breakdown Voltage



Drain Current vs. Gate Threshold Voltage



Drain-Source On-State Resistance Characteristics



Drain Current vs. Source to Drain Voltage