



# UF3N25Z

**Power MOSFET**

## 3A, 250V N-CHANNEL POWER MOSFET

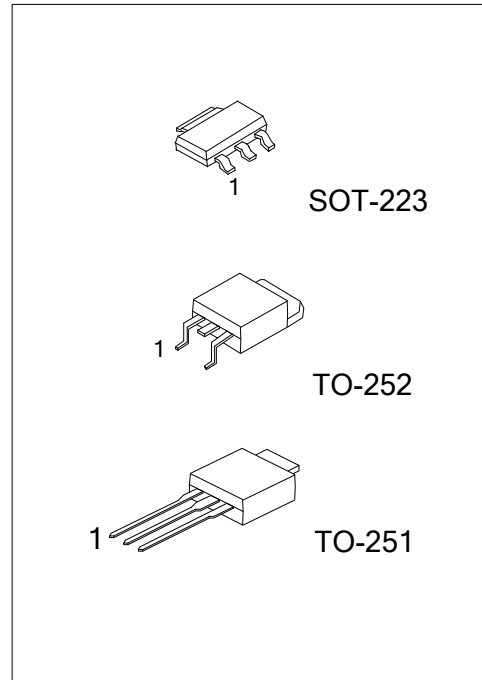
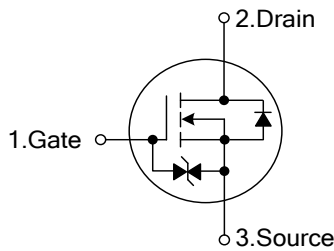
■ DESCRIPTION

The U TC **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

- \*  $R_{DS(ON)} < 1.7\Omega @ V_{GS}=10V, I_D=3A$
- \* 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

<p>UF3N25ZL-AA3-R</p> <p>(1)Packing Type</p> <p>(2)Package Type</p> <p>(3)Lead Free</p>	<p>(1) R: Tape Reel, T: Tube</p> <p>(2) AA3: SOT-223, TM3: TO-251, TN3: TO-252</p> <p>(3) L: Lead Free, G: Halogen Free</p>
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### ■ ABSOLUTE MAXIMUM RATINGS

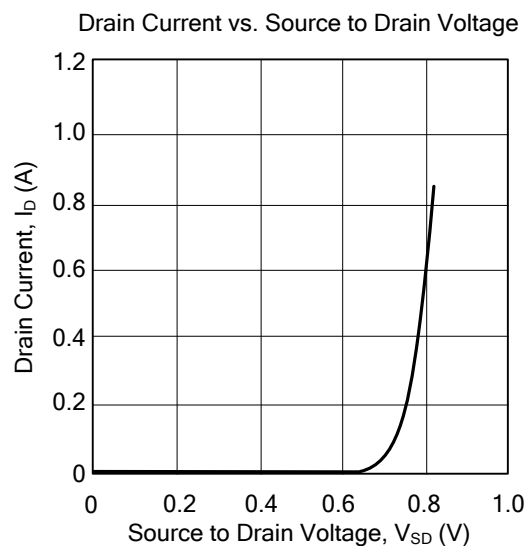
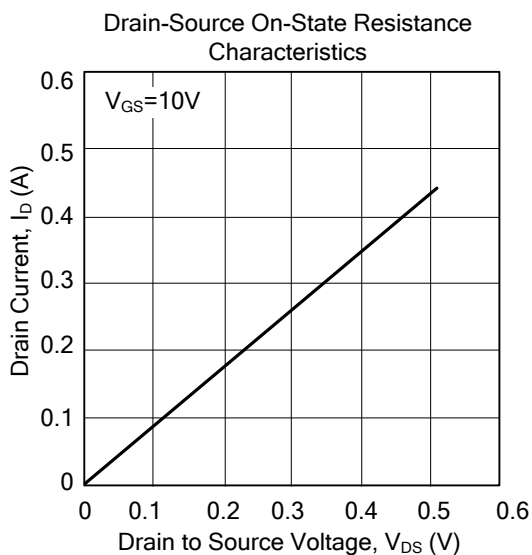
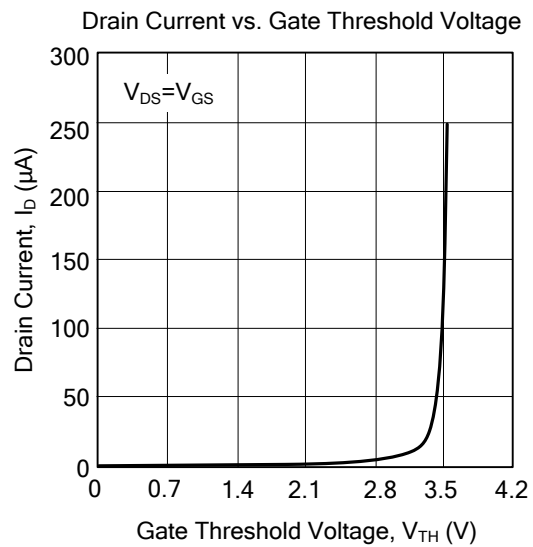
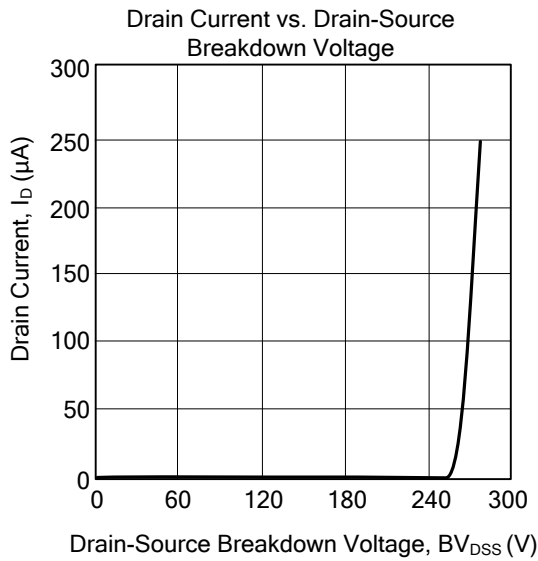
PARAMETER		SYMBOL	RATINGS	UNIT
Drain-Source Voltage		$V_{DSS}$	250	V
Gate-Source Voltage		$V_{GSS}$	$\pm 20$	V
Continuous Drain Current	Continuous	$I_D$	3	A
	Pulsed	$I_{DM}$	12	A
Avalanche Energy		$E_{AS}$	52	mJ
Power Dissipation	SOT-223	$P_D$	0.8	W
	TO-251/TO-252		1.14	W
Junction Temperature		$T_J$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

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
<b>OFF CHARACTERISTICS</b>							
Drain-Source Breakdown Voltage		$BV_{DSS}$	$I_D=250\mu A, V_{GS}=0V$	250			V
Drain-Source Leakage Current		$I_{DSS}$	$V_{DS}=250V$			1	$\mu A$
Gate-Source Leakage Current	Forward	$I_{GSS}$	$V_{GS}=+20V, V_{DS}=0V$			10	$\mu A$
	Reverse		$V_{GS}=-20V, V_{DS}=0V$			-10	$\mu A$
<b>ON CHARACTERISTICS</b>							
Gate Threshold Voltage		$V_{GS(TH)}$	$I_D=250\mu A$	2		4	V
Static Drain-Source On-State Resistance		$R_{DS(ON)}$	$V_{GS}=10V, I_D=3A$			1.7	$\Omega$
<b>DYNAMIC PARAMETERS</b>							
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
<b>SWITCHING PARAMETERS</b>							
Total Gate Charge		$Q_G$	$V_{DD}=50V, I_D=3A, I_G=100\mu A, V_{GS}=10V$		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		$t_{D(ON)}$	$V_{DD}=30V, I_D=1A, R_G=25\Omega, V_{GS}=0\sim 10V$		20		ns
Rise Time		$t_R$			90		ns
Turn-OFF Delay Time		$t_{D(OFF)}$			30		ns
Fall-Time		$t_F$			50		ns
<b>SOURCE- DRAIN DIODE RATINGS AND CHARACTERISTICS</b>							
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



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