



UF3N25Z

Power MOSFET

3A, 250V N-CHANNEL POWER MOSFET

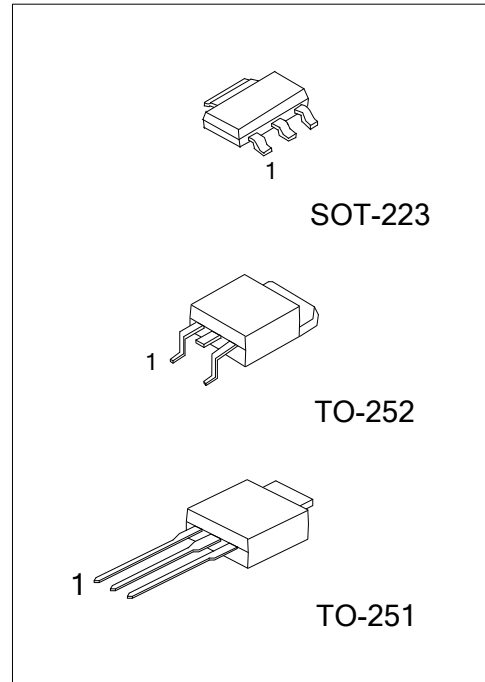
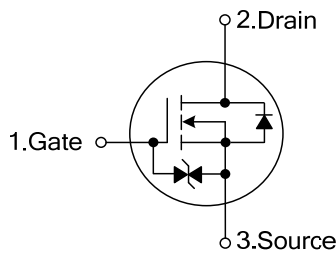
■ DESCRIPTION

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

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

■ SYMBOL



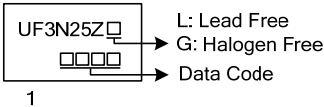
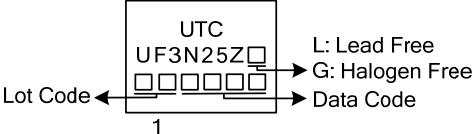
■ ORDERING INFORMATION

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

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

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

■ MARKING INFORMATION

PACKAGE	MARKING
SOT-223	 <p>UF3N25Z □ □ □ □ □ 1</p> <p>L: Lead Free G: Halogen Free Data Code</p>
TO-251 TO-252	 <p>UTC UF3N25Z □ □ □ □ □ □ □ 1</p> <p>Lot Code ← L: Lead Free G: Halogen Free Data Code</p>

■ ABSOLUTE MAXIMUM RATINGS

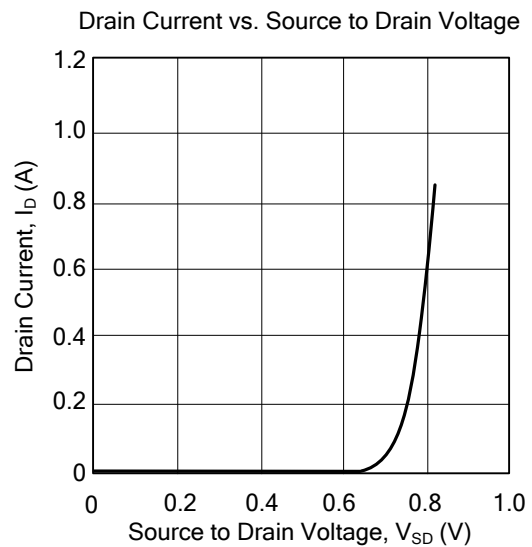
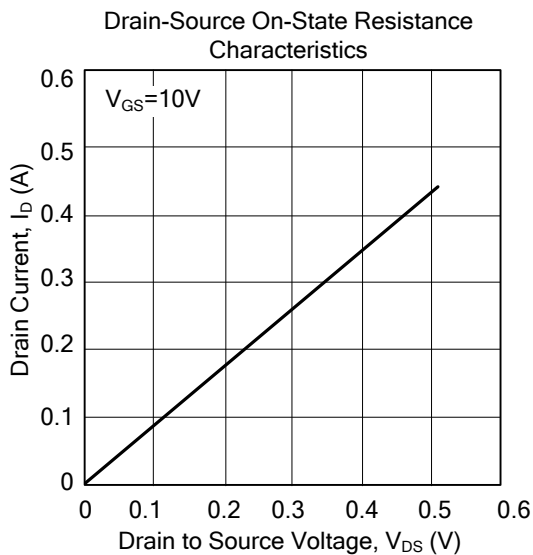
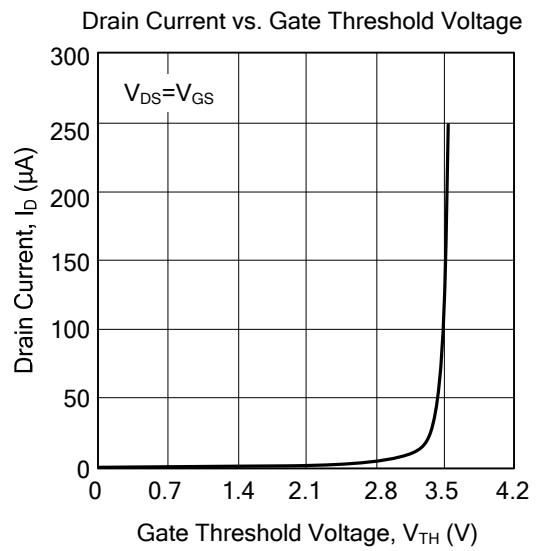
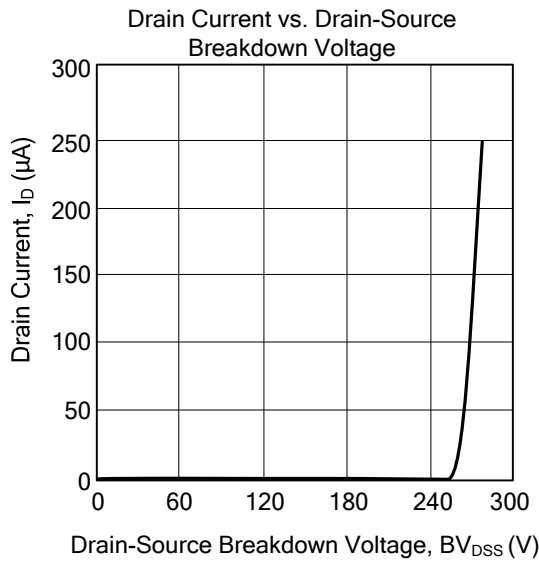
PARAMETER		SYMBOL	RATINGS	UNIT
Drain-Source Voltage		V_{DSS}	250	V
Gate-Source Voltage		V_{GSS}	± 20	V
Continuous Drain Current	Continuous	I_D	3	A
	Pulsed	I_{DM}	12	A
Avalanche Energy		E_{AS}	52	mJ
Power Dissipation	SOT-223	P_D	0.8	W
	TO-251/TO-252		1.14	W
Junction Temperature		T_J	+150	$^{\circ}C$
Storage 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
OFF CHARACTERISTICS							
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	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		$R_{DS(ON)}$	$V_{GS}=10V, I_D=3A$			2	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	$V_{DD}=50V, I_D=1.3A, I_G=100\mu A, V_{GS}=10V$		3.2	5.5	nC
Gate to Source Charge		Q_{GS}			0.64		nC
Gate to Drain Charge		Q_{GD}			1.6		nC
Turn-ON Delay Time		$t_{D(ON)}$	$V_{DD}=30V, I_D=0.5A, R_G=25\Omega, V_{GS}=0\sim 10V$		30	35	ns
Rise Time		t_R			118	125	ns
Turn-OFF Delay Time		$t_{D(OFF)}$			50	58	ns
Fall-Time		t_F			90	110	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



UTC assumes no responsibility for equipment failures that result from using products at values that exceed, even momentarily, rated values (such as maximum ratings, operating condition ranges, or other parameters) listed in products specifications of any and all UTC products described or contained herein. UTC products are not designed for use in life support appliances, devices or systems where malfunction of these products can be reasonably expected to result in personal injury. Reproduction in whole or in part is prohibited without the prior written consent of the copyright owner. The information presented in this document does not form part of any quotation or contract, is believed to be accurate and reliable and may be changed without notice.