



UF5N15Z

Power MOSFET

5A, 150V N-CHANNEL POWER MOSFET

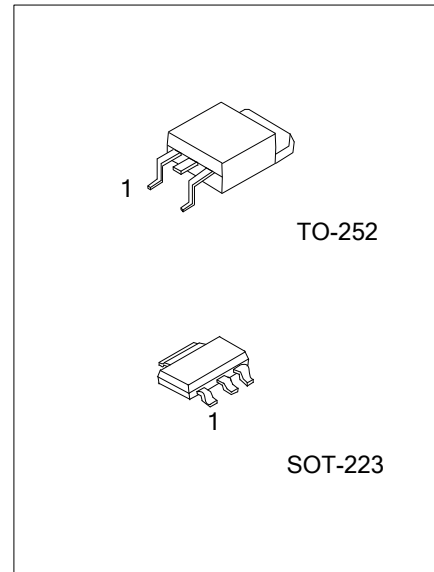
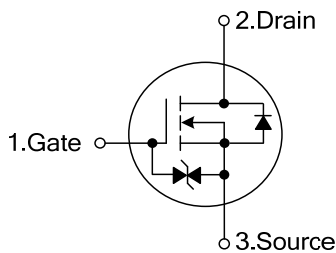
DESCRIPTION

The UTC **UF5N15Z** 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

- * $R_{DS(ON)} < 1.9\Omega @ V_{GS}=10V, I_D=5A$
- * High switching speed
- * Low gate charge

SYMBOL



ORDERING INFORMATION

Ordering Number		Package	Pin Assignment			Packing
Lead Free	Halogen Free		1	2	3	
-	UF5N15ZG-AA3-R	SOT-223	G	D	S	Tape Reel
UF5N15ZL-TN3-R	UF5N15ZG-TN3-R	TO-252	G	D	S	Tape Reel

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

<p>UF5N15ZG-AA3-R</p> <ul style="list-style-type: none"> (1) Packing Type (2) Package Type (3) Green Package 	<ul style="list-style-type: none"> (1) R: Tape Reel (2) AA3: SOT-223, TN3: TO-252 (3) G: Halogen Free and Lead Free, L: Lead Free
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MARKING

SOT-223	TO-252

■ ABSOLUTE MAXIMUM RATINGS

PARAMETER		SYMBOL	RATINGS	UNIT
Drain-Source Voltage		V_{DSS}	150	V
Gate-Source Voltage		V_{GSS}	± 20	V
Drain Current	Continuous	I_D	5	A
	Pulsed	I_{DM}	20	A
Avalanche Energy		E_{AS}	19	mJ
Power Dissipation	SOT-223	P_D	10	W
	TO-252		54	W
Junction Temperature		T_J	+150	$^{\circ}C$
Storage Temperature Range		T_{STG}	-55 ~ +150	$^{\circ}C$

Notes: 1. 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.

2. $L=1.5mH$, $I_{AS}=5A$, $V_{DD}=25V$, $R_G=25\Omega$, Starting $T_J=25^{\circ}C$.

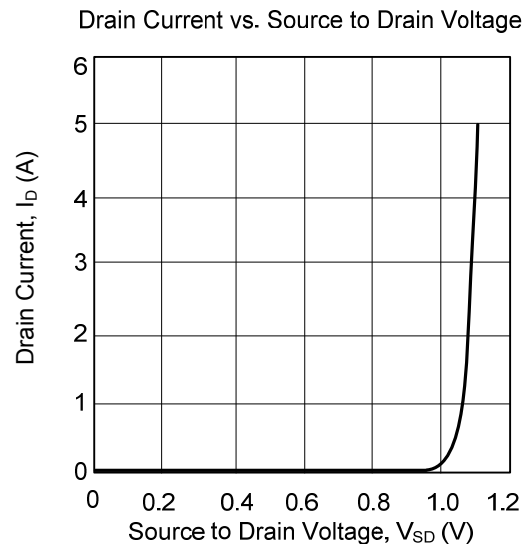
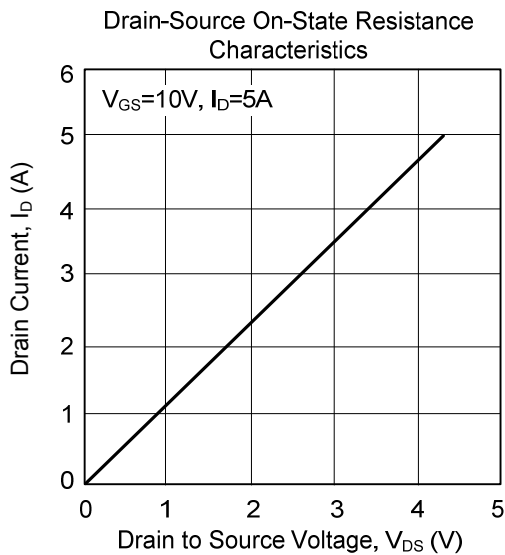
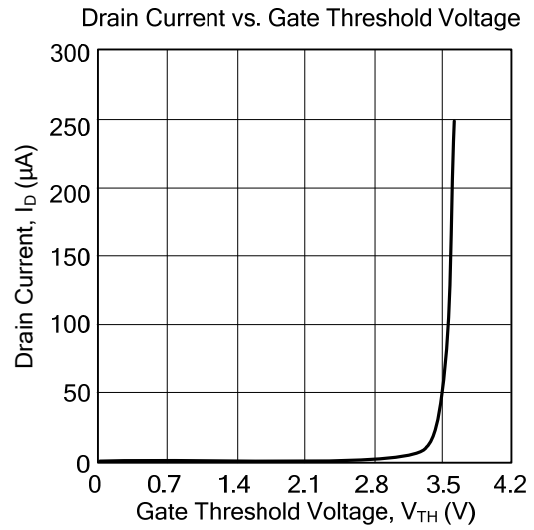
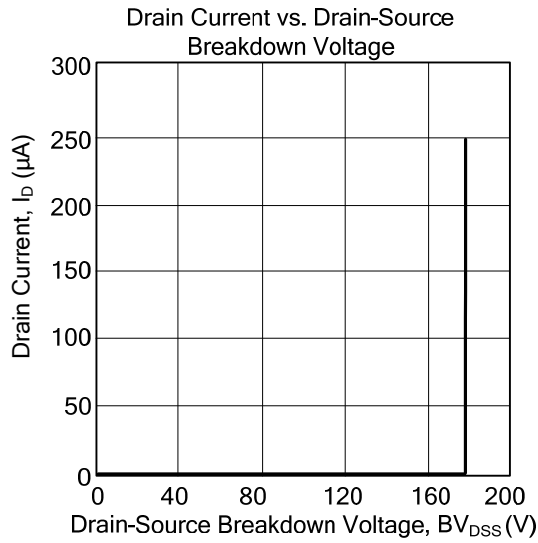
■ THERMAL CHARACTERISTICS

PARAMETER		SYMBOL	RATINGS	UNIT
Junction to Ambient	SOT-223	θ_{JA}	150	$^{\circ}C/W$
	TO-252		110	$^{\circ}C/W$
Junction to Case	SOT-223	θ_{JC}	12.5	$^{\circ}C/W$
	TO-252		2.13	$^{\circ}C/W$

■ ELECTRICAL CHARACTERISTICS

PARAMETER		SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT	
OFF CHARACTERISTICS								
Drain-Source Breakdown Voltage		BV_{DSS}	$I_D=250\mu A$, $V_{GS}=0V$	150			V	
Drain-Source Leakage Current		I_{DSS}	$V_{DS}=150V$, $V_{GS}=0V$			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		$V_{GS(TH)}$	$V_{DS}=V_{GS}$, $I_D=250\mu A$	2		4	V	
Static Drain-Source On-State Resistance		$R_{DS(ON)}$	$V_{GS}=10V$, $I_D=5A$	0.1		1.9	Ω	
DYNAMIC PARAMETERS								
Input Capacitance		C_{ISS}	$V_{DS}=25V$, $V_{GS}=0V$, $f=1MHz$		718	955	pF	
Output Capacitance		C_{OSS}				77	105	pF
Reverse Transfer Capacitance		C_{RSS}				3.3	5	pF
SWITCHING PARAMETERS								
Total Gate Charge		Q_G	$V_{GS}=10V$, $V_{DS}=75V$, $I_D=4.5A$		10.6	15	nC	
Gate to Source Charge		Q_{GS}				3.5		nC
Gate to Drain Charge		Q_{GD}				2.3		nC
Turn-ON Delay Time		$t_{D(ON)}$	$V_{DD}=30V$, $I_D=1A$, $R_G=25\Omega$, $V_{GS}=10V$		9.2	19	ns	
Rise Time		t_R				1.6	10	ns
Turn-OFF Delay Time		$t_{D(OFF)}$				14	24	ns
Fall-Time		t_F				2.9	10	ns
SOURCE- DRAIN DIODE RATINGS AND CHARACTERISTICS								
Maximum Body-Diode Continuous Current		I_S				5	A	
Maximum Body-Diode Pulsed Current		I_{SM}				20	A	
Drain-Source Diode Forward Voltage		V_{SD}	$I_S=5A$, $V_{GS}=0V$			1.43	V	

TYPICAL CHARACTERISTICS



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