



UF5N15Z

Power MOSFET

5A, 150V N-CHANNEL POWER MOSFET

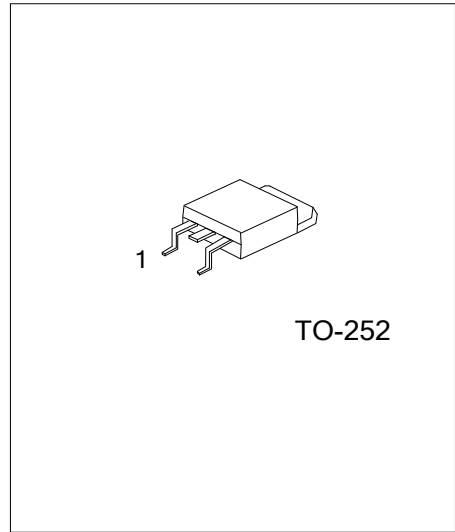
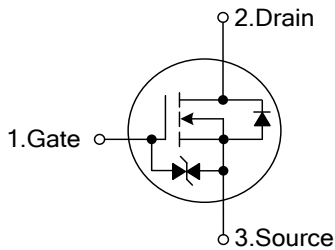
DESCRIPTION

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	
UF5N15ZL-TN3-T	UF5N15ZG-TN3-T	TO-252	G	D	S	Tube
UF5N15ZL-TN3-R	UF5N15ZG-TN3-R	TO-252	G	D	S	Tape Reel

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

<p>UF5N15ZL-TN3-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) 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}	150	V
Gate-Source Voltage		V_{GSS}	± 20	V
Drain Current	Continuous	I_D	5	A
	Pulsed	I_{DM}	20	A
Avalanche Current		I_{AR}	5	A
Avalanche Energy	Single Pulsed	E_{AS}	19	mJ
Power Dissipation		P_D	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 $T_J=25^{\circ}C$.

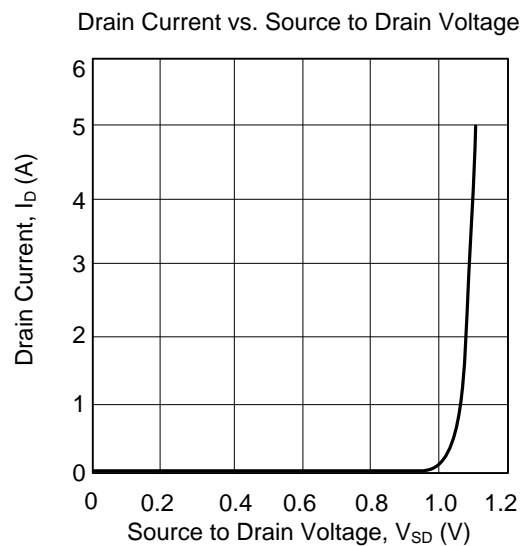
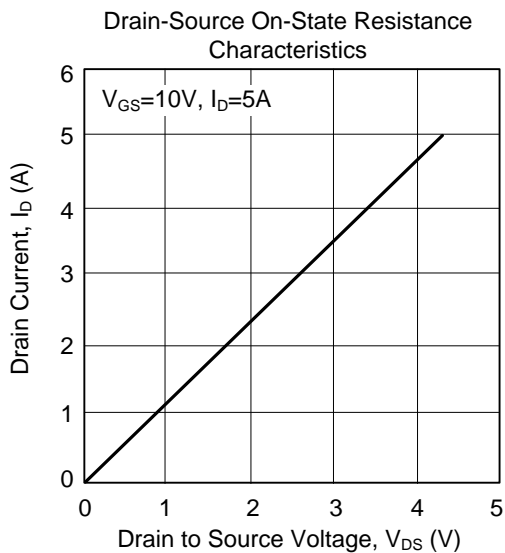
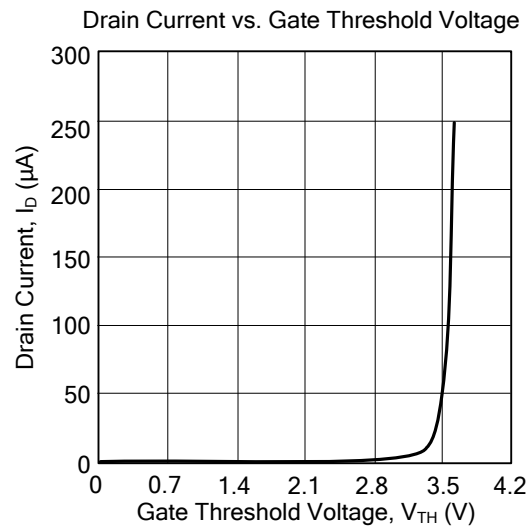
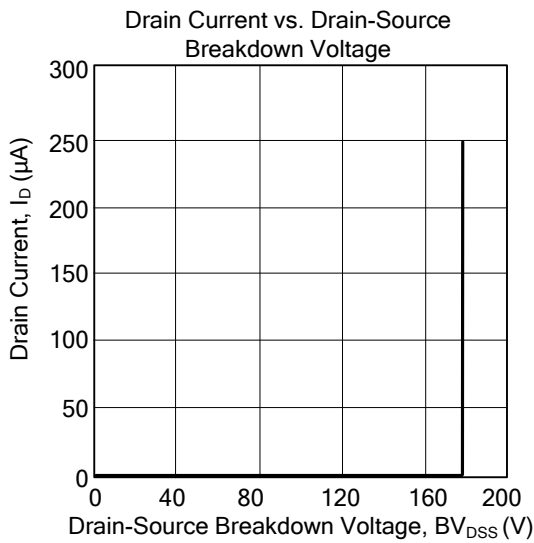
■ THERMAL CHARACTERISTICS

PARAMETER	SYMBOL	RATINGS	UNIT
Junction to Ambient	θ_{JA}	110	$^{\circ}C/W$
Junction to Case	θ_{JC}	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}			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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