



## UDF020N120

Advance

Power MOSFET

### 0.2A, 1200V N-CHANNEL DEPLETION-MODE POWER MOSFET

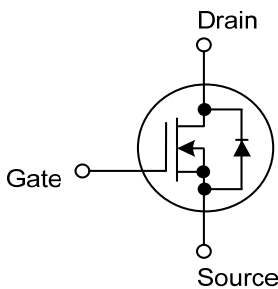
#### DESCRIPTION

The UTC **UDF020N120** is an N-channel power MOSFET using UTC's advanced technology to provide the customers with high switching speed.

#### FEATURES

- \*  $R_{DS(ON)} \leq 300 \Omega$  @  $V_{GS}=0V, I_D=0.1A$
- \* High Switching Speed

#### SYMBOL



#### ORDERING INFORMATION

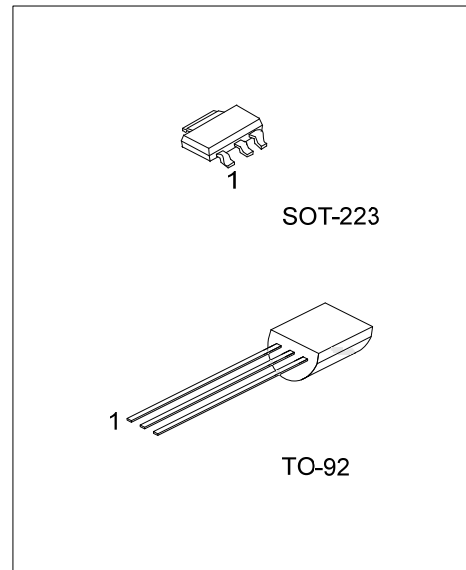
Ordering Number		Package	Pin Assignment			Packing
Lead Free	Halogen Free		1	2	3	
UDF020N120L-AA3-R	UDF020N120G-AA3-R	SOT-223	G	D	S	Tape Reel
UDF020N120L-T92-B	UDF020N120G-T92-B	TO-92	G	D	S	Tape Box
UDF020N120L-T92-K	UDF020N120G-T92-K	TO-92	G	D	S	Bulk

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

<p>UDF020N120G-AA3-R</p> <p>(1) Packing Type (2) Package Type (3) Green Package</p>	<p>(1) R: Tape Reel, B: Tape Box, K: Bulk (2) AA3: SOT-223, T92: TO-92 (3) G: Halogen Free and Lead Free, L: Lead Free</p>
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#### MARKING

SOT-223	TO-92



■ ABSOLUTE MAXIMUM RATINGS ( $T_A=25^{\circ}\text{C}$ , unless otherwise specified)

PARAMETER		SYMBOL	RATINGS	UNIT
Drain-Source Voltage (Note 2)		$V_{DSS}$	1200	V
Drain-Gate Voltage (Note 2)		$V_{DGX}$	1200	V
Gate-Source Voltage		$V_{GSS}$	$\pm 20$	V
Drain Current	Continuous	$I_D$	0.2	A
	Pulsed	$I_{DM}$	0.4	A
Power Dissipation	SOT-223	$P_D$	0.8	W
	TO-92		0.625	W
Junction Temperature		$T_J$	+150	$^{\circ}\text{C}$
Storage Temperature		$T_{STG}$	-55 ~ +150	$^{\circ}\text{C}$

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.  $T_J=+25^{\circ}\text{C}\sim+150^{\circ}\text{C}$

■ THERMAL DATA

PARAMETER		SYMBOL	RATINGS	UNIT
Junction to Ambient	SOT-223	$\theta_{JA}$	150	$^{\circ}\text{C}/\text{W}$
	TO-92		200	$^{\circ}\text{C}/\text{W}$

■ ELECTRICAL CHARACTERISTICS ( $T_A=25^{\circ}\text{C}$ , unless otherwise specified)

PARAMETER		SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
<b>OFF CHARACTERISTICS</b>							
Drain-Source Breakdown Voltage		$BV_{DSS}$	$I_D=250\mu\text{A}, V_{GS}=-5\text{V}$	1200			V
Drain-Source Leakage Current		$I_{D(OFF)}$	$V_{DS}=1200\text{V}, V_{GS}=-5\text{V}$			0.1	$\mu\text{A}$
Gate-Source Leakage Current	Forward	$I_{GSS}$	$V_{GS}=+20\text{V}, V_{DS}=0\text{V}$			+100	nA
	Reverse		$V_{GS}=-20\text{V}, V_{DS}=0\text{V}$			-100	nA
<b>ON CHARACTERISTICS</b>							
Gate to Source Cut Off Voltage		$V_{GS(OFF)}$	$V_{DS}=3\text{V}, I_D=8\mu\text{A}$	-2.0		-4.5	V
Drain-Source Leakage Current		$I_{DSS}$	$V_{DS}=25\text{V}, V_{GS}=0\text{V}$	60			mA
Static Drain-Source On-State Resistance		$R_{DS(ON)}$	$V_{GS}=0\text{V}, I_D=0.1\text{A}$			300	$\Omega$
<b>SOURCE- DRAIN DIODE RATINGS AND CHARACTERISTICS</b>							
Drain-Source Diode Forward Voltage		$V_{SD}$	$I_{SD}=3.0\text{mA}, V_{GS}=-10\text{V}$			1	V

Note: 1. Repetitive rating, pulse width limited by maximum junction temperature.

2. Pulse width  $\leq 380\mu\text{s}$ ; duty cycle  $\leq 2\%$ .

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