



UDF030N07

Preliminary

Power MOSFET

0.3A, 70V N-CHANNEL DEPLETION-MODE POWER MOSFET

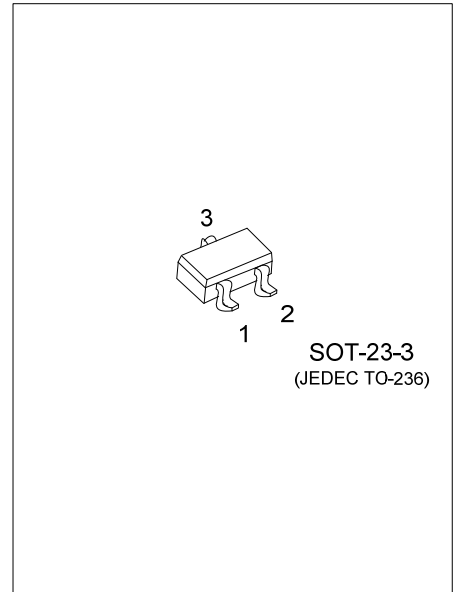
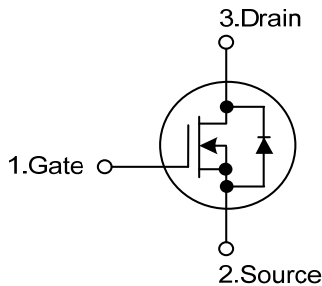
DESCRIPTION

The UTC **UDF030N07** is an N-channel power MOSFET using UTC's advanced technology to provide the customers with high switching speed.

FEATURES

- * $R_{DS(ON)} \leq 12 \Omega$ @ $V_{GS}=0V, I_D=150mA$
- * Depletion Mode (Normally On)
- * Proprietary Advanced Planar Technology
- * Rugged Polysilicon Gate Cell Structure
- * Fast Switching Speed

SYMBOL



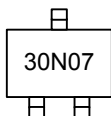
ORDERING INFORMATION

Ordering Number		Package	Pin Assignment			Packing
Lead Free	Halogen Free		1	2	3	
UDF030N07L-AE2-R	UDF030N07G-AE2-R	SOT-23-3	G	S	D	Tape Reel

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

UDF030N07G-AE2-R	(1)Packing Type (2)Package Type (3)Green Package	(1) R: Tape Reel (2) AE2: SOT-23-3 (3) G: Halogen Free and Lead Free, L: Lead Free
------------------	--	--

MARKING



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

PARAMETER		SYMBOL	RATINGS	UNIT
Drain-Source Voltage (Note 2)		V_{DSX}	70	V
Drain-Gate Voltage (Note 2)		V_{DGX}	70	V
Gate-Source Voltage		V_{GSS}	± 30	V
Drain Current	Continuous	I_D	0.3	A
	Pulsed	I_{DM}	0.6	A
Power Dissipation		P_D	0.32	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	θ_{JA}	390	$^\circ\text{C/W}$

Note: Device mounted on FR-4 substrate PC board, 2oz copper, with 1inch square copper plate.

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

PARAMETER		SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT	
OFF CHARACTERISTICS								
Drain-Source Breakdown Voltage		BV_{DSX}	$I_D=250\mu\text{A}$, $V_{GS}=-30\text{V}$	70			V	
Drain-Source Leakage Current		$I_{D(OFF)}$	$V_{DS}=70\text{V}$, $V_{GS}=-30\text{V}$			1	μA	
Gate-Source Leakage Current	Forward	I_{GSS}	$V_{GS}=+30\text{V}$, $V_{DS}=0\text{V}$			+100	nA	
	Reverse		$V_{GS}=-30\text{V}$, $V_{DS}=0\text{V}$			-100	nA	
ON CHARACTERISTICS								
Gate to Source Cut Off Voltage		$V_{GS(OFF)}$	$V_{DS}=20\text{V}$, $I_D=8.0\mu\text{A}$	-4.0		-10	V	
Drain-Source Leakage Current		I_{DSS}	$V_{DS}=25\text{V}$, $V_{GS}=0\text{V}$	300			mA	
Static Drain-Source On-State Resistance		$R_{DS(ON)}$	$V_{GS}=0\text{V}$, $I_D=150\text{mA}$			12	Ω	
DYNAMIC PARAMETERS								
Input Capacitance		C_{ISS}	$V_{GS}=-15\text{V}$, $V_{DS}=25\text{V}$, $f=1.0\text{MHz}$		1.55		pF	
Output Capacitance		C_{OSS}				13		pF
Reverse Transfer Capacitance		C_{RSS}				2.3		pF
SWITCHING PARAMETERS								
Turn-ON Delay Time		$t_{D(ON)}$	$V_{GS}=-15\sim 0\text{V}$, $V_{DD}=30\text{V}$, $I_D=300\text{mA}$, $R_G=20\Omega$		32		ns	
Rise Time		t_R				37		ns
Turn-OFF Delay Time		$t_{D(OFF)}$				35		ns
Fall-Time		t_F				37		ns
SOURCE- DRAIN DIODE RATINGS AND CHARACTERISTICS								
Drain-Source Diode Forward Voltage		V_{SD}	$I_{SD}=300\text{mA}$, $V_{GS}=-10\text{V}$			1.4	V	

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

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

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. UTC reserves the right to make changes to information published in this document, including without limitation specifications and product descriptions, at any time and without notice. This document supersedes and replaces all information supplied prior to the publication hereof.