



## URFP064

Preliminary

Power MOSFET

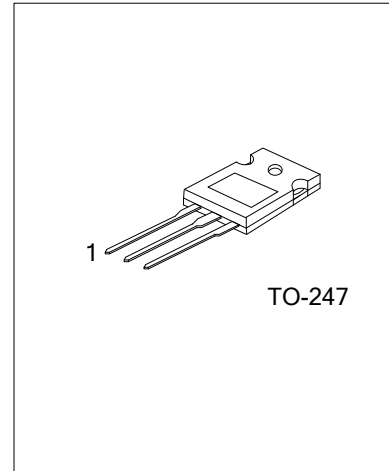
### 70A, 60V N-CHANNEL POWER MOSFET

#### DESCRIPTION

The UTC **URFP064** is an N-channel enhancement power MOSFET using UTC's advanced technology to provide the customers with a minimum on-state resistance and high switching speed.

#### FEATURES

- \*  $R_{DS(ON)} < 20m\Omega$  @  $V_{GS}=10V, I_D=70A$
- \* High Switching Speed



#### ORDERING INFORMATION

Ordering Number		Package	Pin Assignment			Packing
Lead Free	Halogen Free		1	2	3	
URFP064L-T47-T	URFP064G-T47-T	TO-247	G	D	S	Tube

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

<p>URFP064L-T47-T</p> <p>(1) Packing Type (2) Package Type (3) Lead Free</p>	<p>(1) T: Tube (2) T47: TO-47 (3) G: Halogen Free, L: Lead Free</p>
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### ■ ABSOLUTE MAXIMUM RATINGS

PARAMETER		SYMBOL	RATINGS	UNIT
Drain-Source Voltage		$V_{DSS}$	60	V
Gate-Source Voltage		$V_{GSS}$	$\pm 20$	V
Drain Current	Continuous	$I_D$	70	A
	Pulsed (Note 2)	$I_{DM}$	280	
Avalanche Current		$I_{AR}$	70	A
Single Pulsed Avalanche Energy		$E_{AS}$	1000	mJ
Power Dissipation		$P_D$	190	W
Junction Temperature		$T_J$	-55~+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.  $L = 69\text{mH}$ ,  $I_{AS} = 70\text{A}$ ,  $V_{DD} = 25\text{V}$ ,  $R_G = 25\ \Omega$

### ■ ELECTRICAL CHARACTERISTICS

PARAMETER		SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT	
<b>OFF CHARACTERISTICS</b>								
Drain-Source Breakdown Voltage		$BV_{DSS}$	$I_D=250\mu\text{A}$	60			V	
Drain-Source Leakage Current		$I_{DSS}$	$V_{DS}=60\text{V}$			10	$\mu\text{A}$	
Gate-Source Leakage Current	Forward	$I_{GSS}$	$V_{GS}=+20\text{V}$			+100	nA	
	Reverse		$V_{GS}=-20\text{V}$			-100	nA	
<b>ON CHARACTERISTICS</b>								
Gate Threshold Voltage		$V_{GS(TH)}$	$I_D=250\mu\text{A}$	2		4	V	
Static Drain-Source On-State Resistance		$R_{DS(ON)}$	$V_{GS}=10\text{V}$ , $I_D=70\text{A}$			20	m $\Omega$	
<b>DYNAMIC PARAMETERS</b>								
Input Capacitance		$C_{ISS}$	$V_{GS}=0\text{V}$ , $V_{DS}=25\text{V}$ , $f=1.0\text{MHz}$		7400		pF	
Output Capacitance		$C_{OSS}$				3200		pF
Reverse Transfer Capacitance		$C_{RSS}$				540		pF
<b>SWITCHING PARAMETERS</b>								
Total Gate Charge		$Q_G$	$V_{DD}=50\text{V}$ , $V_{GS}=10\text{V}$ , $I_D=1.3\text{A}$ , $I_D=100\mu\text{A}$ ,			190	nC	
Gate to Source Charge		$Q_{GS}$				55	nC	
Gate to Drain Charge		$Q_{GD}$				90	nC	
Turn-ON Delay Time		$t_{D(ON)}$	$V_{DD}=30\text{V}$ , $I_D=70\text{A}$ , $R_G=25\Omega$ , $V_{GS}=0\sim 10\text{V}$		21		ns	
Rise Time		$t_R$			190		ns	
Turn-OFF Delay Time		$t_{D(OFF)}$			110		ns	
Fall-Time		$t_F$			190		ns	
<b>SOURCE- DRAIN DIODE RATINGS AND CHARACTERISTICS</b>								
Maximum Body-Diode Continuous Current		$I_S$				70	A	
Maximum Body-Diode Pulsed Current		$I_{SM}$				280	A	
Drain-Source Diode Forward Voltage		$V_{SD}$	$I_S=70\text{A}$			1.28	V	

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