



URFP064

Preliminary

Power MOSFET

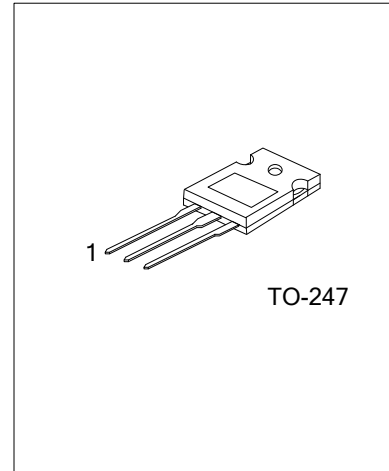
70A, 60V N-CHANNEL POWER MOSFET

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</p> <p>(2) Package Type</p> <p>(3) Lead Free</p>	<p>(1) T: Tube</p> <p>(2) T47: TO-47</p> <p>(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}	± 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	°C
Storage Temperature		T_{STG}	-55~+150	°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	
OFF CHARACTERISTICS								
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	μA	
Gate-Source Leakage Current	Forward	I_{GSS}	$V_{GS}=+20\text{V}$			+100	nA	
	Reverse		$V_{GS}=-20\text{V}$			-100	nA	
ON CHARACTERISTICS								
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 Ω	
DYNAMIC PARAMETERS								
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
SWITCHING PARAMETERS								
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	
SOURCE- DRAIN DIODE RATINGS AND CHARACTERISTICS								
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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