

# UNISONIC TECHNOLOGIES CO., LTD

### URFP064

Preliminary

**Power MOSFET** 

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

#### DESCRIPTION

The UT C **URFP064** is an N-chann el enhanc ement po wer MOSFET using UT C's a dvanced tech nology to pr ovide th e customers with a minim um on-state resist ance a nd h igh s witching speed.

#### FEATURES

 $R_{DS(ON)}$ <20m $\Omega$  @ V<sub>GS</sub>=10V,I<sub>D</sub>=70A

\* High Switching Speed

#### ORDERING INFORMATION

Ordering Number			Dookogo	Pin Assignment			Decking	
Lead Free	Halogen Free		Раскауе	1	2	3	Packing	
URFP064L-T47-T	URFP064G-T47-	TO-247	G	D	S	Tube		
Note: Pin Assignment: G: Gate D: Drain S: Source								
URFP064L-T47-T (1)Packing Type (2)Package Type (3)Lead Free			ube TO-47 alogen Free,	L: Lead	Free			



#### ABSOLUTE MAXIMUM RATINGS

PARAMETER SYMBOL			RATINGS	UNIT	
Drain-Source Voltage		V <sub>DSS</sub> 60		V	
Gate-Source Vo	oltage	V <sub>GSS</sub> ±20		V	
Drain Current	Continuous	ID	70	٥	
	Pulsed (Note 2)	I <sub>DM</sub>	280	А	
Avalanche Curr	ent	I <sub>AR</sub>	70	A	
Single Pulsed A	valanche Energy	E <sub>AS</sub>	1000	mJ	
Power Dissipati	on	PD	190	W	
Junction Tempe	erature	TJ	-55~+150		
Storage Temperature		Tstg	-55~+150		

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.

#### ELECTRICAL CHARACTERISTICS

PARAMETER		SYMBOL	TEST CONDITIONS MIN			MAX	UNIT	
OFF CHARACTERISTICS				<u>.</u>				
Drain-Source Breakdown Voltage		BV <sub>DSS</sub>	I <sub>D</sub> =250μΑ 60				V	
Drain-Source Leakage Current		I <sub>DSS</sub>	V <sub>DS</sub> =60V			10	μA	
Gate-Source Leakage Current	Forward	V I <sub>GSS</sub>	V <sub>GS</sub> =+20V			+100	nA	
	Reverse		<sub>GS</sub> =-20V			-100	nA	
ON CHARACTERISTICS								
Gate Threshold Voltage		V <sub>GS(TH)</sub>	I <sub>D</sub> =250μA			4	V	
Static Drain-Source On-State Resistance		R <sub>DS(ON)</sub>	V <sub>GS</sub> =10V, I <sub>D</sub> =70A			20	mΩ	
DYNAMIC PARAMETERS								
Input Capacitance		CISS		74	0 0		рF	
Output Capacitance		C <sub>OSS</sub>	V <sub>GS</sub> =0V, V <sub>DS</sub> =25V, f=1.0MHz	32	0 0		рF	
Reverse Transfer Capacitance		C <sub>RSS</sub>			0		рF	
SWITCHING PARAMETERS								
Total Gate Charge		$Q_G$				190	nC	
Gate to Source Charge		$Q_{GS}$	$V_{DD}=50V, V_{GS}=10V,$			55	nC	
Gate to Drain Charge		$Q_{GD}$	$I_D = 1.5 A$ , $I_D = 100 \mu A$ ,			90	nC	
Turn-ON Delay Time		t <sub>D(ON)</sub>		21			ns	
Rise Time		t <sub>R</sub>	V <sub>DD</sub> =30V, I <sub>D</sub> =70A,	19	0		ns	
Turn-OFF Delay Time		t <sub>D(OFF)</sub>	R <sub>G</sub> =25Ω, V <sub>GS</sub> =0~10V	11	0		ns	
Fall-Time		t⊧			0		ns	
SOURCE- DRAIN DIODE RATIN	NGS AND	CHARACTE	RISTICS					
Maximum Body-Diode Continuous Current		Is				70	Α	
Maximum Body-Diode Pulsed Current		I <sub>SM</sub>				280	Α	
Drain-Source Diode Forward Voltage		$V_{SD}$	I <sub>S</sub> =70A			1.28	V	

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<sup>2.</sup> L = 69mH, I\_{AS} = 70A, V\_DD = 25V, R\_G = 25  $\Omega$