



URFP150

Preliminary

Power MOSFET

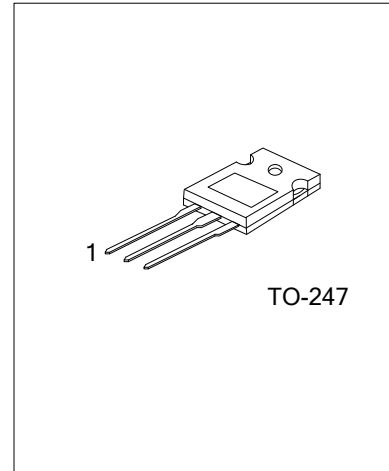
41A, 100V N-CHANNEL POWER MOSFET

DESCRIPTION

The UTC **URFP150** is an N-channel enhancement MOSFET using UTC's advanced technology to provide the customers with a minimum on-state resistance and high switching speed.

FEATURES

- * $R_{DS(ON)} < 55m\Omega$ @ $V_{GS}=10V, I_D=25A$
- * High Switching Speed



ORDERING INFORMATION

Ordering Number		Package	Pin Assignment			Packing
Lead Free	Halogen Free		1	2	3	
URFP150L-T47-T	URFP150G-T47-T	TO-247	G	D	S	Tube

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

<p>URFP150L-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-247</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}	100	V
Gate-Source Voltage	V_{GSS}	± 20	V
Continuous Drain Current	Continuous	I_D	41
	Pulsed	I_{DM}	160
Avalanche Current	I_{AR}	41	A
Single Pulsed Avalanche Energy (Note 2)	E_{AS}	830	mJ
Power Dissipation	P_D	192	W
Junction Temperature	T_J	-55~+150	$^{\circ}C$
Storage Temperature	T_{STG}	-55~+150	$^{\circ}C$

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. $L = 740 \mu H$, $I_{AS} = 41A$, $V_{DD} = 25V$, $R_G = 25 \Omega$

■ ELECTRICAL CHARACTERISTICS

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
OFF CHARACTERISTICS						
Drain-Source Breakdown Voltage	BV_{DSS}	$I_D=250\mu A$	100			V
Drain-Source Leakage Current	I_{DSS}	$V_{DS}=80V$			10	μA
Gate-Source Leakage Current	I_{GSS}	Forward			+100	nA
		Reverse			-100	nA
ON CHARACTERISTICS						
Gate Threshold Voltage	$V_{GS(TH)}$	$I_D=250\mu A$	2		4	V
Static Drain-Source On-State Resistance	$R_{DS(ON)}$	$V_{GS}=10V$, $I_D=25A$			55	m Ω
DYNAMIC PARAMETERS						
Input Capacitance	C_{ISS}	$V_{GS}=0V$, $V_{DS}=25V$, $f=1.0MHz$		2800		pF
Output Capacitance	C_{OSS}			1100		pF
Reverse Transfer Capacitance	C_{RSS}			280		pF
SWITCHING PARAMETERS						
Total Gate Charge	Q_G	$V_{DD}=50V$, $V_{GS}=10V$, $I_D=41A$, $I_G=100\mu A$,			140	nC
Gate to Source Charge	Q_{GS}				29	nC
Gate to Drain Charge	Q_{GD}				68	nC
Turn-ON Delay Time	$t_{D(ON)}$	$V_{DD}=30V$, $I_D=0.5A$, $R_G=25\Omega$, $V_{GS}=0\sim 10V$		16		ns
Rise Time	t_R			120		ns
Turn-OFF Delay Time	$t_{D(OFF)}$			60		ns
Fall-Time	t_F			81		ns
SOURCE- DRAIN DIODE RATINGS AND CHARACTERISTICS						
Maximum Body-Diode Continuous Current	I_S				41	A
Maximum Body-Diode Pulsed Current	I_{SM}				160	A
Drain-Source Diode Forward Voltage	V_{SD}	$I_S=41A$			2.5	V

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