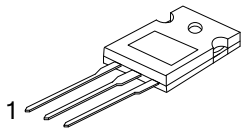
URFP150

Preliminary | ***Power MOSFET***

41A, 100V N-CHANNEL POWER MOSFET



TO-247

■ 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

* $R_{DS(ON)}$<55mΩ @ 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

URFP150L-T47-T
- (1)Packing Type
- (2)Package Type
- (3)Lead Free

(1) T: Tube
(2) T47: TO-247
(3) G: Halogen Free, L: Lead Free

■ 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	A
	Pulsed	I_{DM}	160	A
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	°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 = 740 μH, I_{AS} = 41A, V_{DD} = 25V, R_G = 25 Ω

■ ELECTRICAL CHARACTERISTICS

PARAMETER		SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
OFF CHARACTERISTICS							
Drain-Source Breakdown Voltage		BV_{DSS}	I_D=250μA	100			V
Drain-Source Leakage Current		I_{DSS}	V_{DS}=80V			10	μA
Gate-Source Leakage Current	Forward	I_{GSS}	V_{GS}=+20V			+100	nA
	Reverse		V_{GS}=-20V			-100	nA
ON CHARACTERISTICS							
Gate Threshold Voltage		$V_{GS(TH)}$	I_D=250μA	2		4	V
Static Drain-Source On-State Resistance		$R_{DS(ON)}$	V_{GS}=10V, I_D=25A			55	mΩ
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=100μA,			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=25Ω, V_{GS}=0~10V		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