



UFP254

Preliminary

Power MOSFET

23A, 250V N-CHANNEL POWER MOSFET

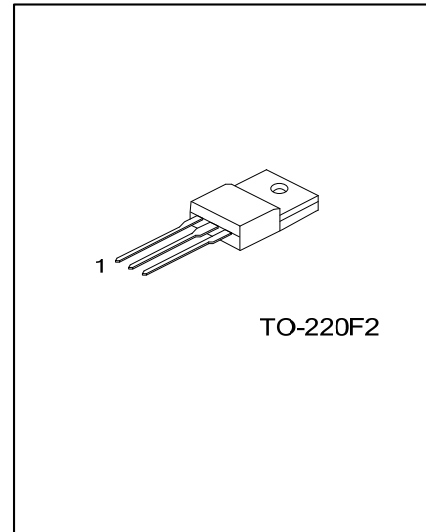
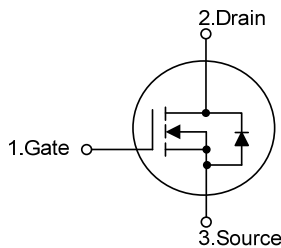
DESCRIPTION

The UTC **UFP254** is an N-channel mode Power FET, it uses UTC's advanced technology. This technology allows a minimum on-state resistance, superior switching performance. It also can withstand high energy pulse in the avalanche and commutation mode.

FEATURES

- * $R_{DS(ON)} < 140m\Omega$ @ $V_{GS}=10V, I_D=14A$
- * Low Gate Charge (Maximum 140nC)
- * High Switching Speed

SYMBOL



ORDERING INFORMATION

Ordering Number		Package	Pin Assignment			Packing
Lead Free	Halogen Free		1	2	3	
UFP254L-TF2-T	UFP254G-TF2-T	TO-220F2	G	D	S	Tube

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

<p>UFP254L-TF2-T</p> <ul style="list-style-type: none"> (1) Packing Type (2) Package Type (3) Lead Free 	<ul style="list-style-type: none"> (1) T: Tube (2) TF2: TO-220F2 (3) G: Halogen Free, L: Lead Free
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■ ABSOLUTE MAXIMUM RATINGS

PARAMETER	SYMBOL	RATINGS	UNIT
Drain-Source Voltage	V_{DSS}	250	V
Gate-Source Voltage	V_{GSS}	± 20	V
Drain Current	Continuous	I_D	23
	Pulsed	I_{DM}	92
Avalanche Current	I_{AR}	23	A
Avalanche Energy	Single Pulsed	E_{AS}	410
	Repetitive	E_{AR}	19
Power Dissipation	P_D	42	W
Junction Temperature	T_J	+150	$^{\circ}\text{C}$
Storage Temperature Range	T_{STG}	-55 ~ +150	$^{\circ}\text{C}$

Note: 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	TYP	MAX	UNIT
OFF CHARACTERISTICS						
Drain-Source Breakdown Voltage	BV_{DSS}	$I_D=250\mu\text{A}, V_{GS}=0\text{V}$	250			V
Drain-Source Leakage Current	I_{DSS}	$V_{DS}=250\text{V}$			25	μA
Gate-Source Leakage Current	Forward	$I_{GSS}, V_{GS}=+20\text{V}, V_{DS}=0\text{V}$			+100	nA
	Reverse	$V_{GS}=-20\text{V}, V_{DS}=0\text{V}$			-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	$R_{DS(ON)}$	$V_{GS}=10\text{V}, I_D=14\text{A}$			140	m Ω
DYNAMIC PARAMETERS						
Input Capacitance	C_{ISS}	$V_{GS}=0\text{V}, V_{DS}=25\text{V}, f=1\text{MHz}$		2700		pF
Output Capacitance	C_{OSS}			620		pF
Reverse Transfer Capacitance	C_{RSS}			180		pF
SWITCHING PARAMETERS						
Total Gate Charge	Q_G	$V_{DD}=50\text{V}, V_{GS}=10\text{V}, I_D=1.3\text{A}$			140	nC
Gate to Source Charge	Q_{GS}				24	nC
Gate to Drain Charge	Q_{GD}				71	nC
Turn-ON Delay Time	$t_{D(ON)}$	$V_{DD}=30\text{V}, I_D=0.5\text{A}, R_G=25\Omega, V_{GS}=0\sim 10\text{V}$		15		ns
Rise Time	t_R			63		ns
Turn-OFF Delay Time	$t_{D(OFF)}$			74		ns
Fall-Time	t_F			50		ns
SOURCE- DRAIN DIODE RATINGS AND CHARACTERISTICS						
Maximum Body-Diode Continuous Current	I_S				23	A
Maximum Body-Diode Pulsed Current	I_{SM}				92	A
Drain-Source Diode Forward Voltage	V_{SD}	$I_S=23\text{A}, V_{GS}=0\text{V}$			1.8	V

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