



UFP254

Preliminary

Power MOSFET

23A, 250V N-CHANNEL POWER MOSFET

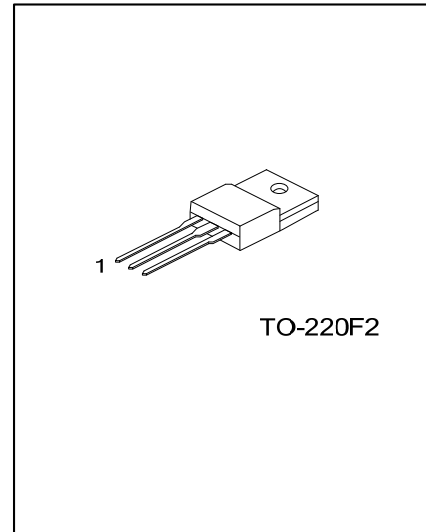
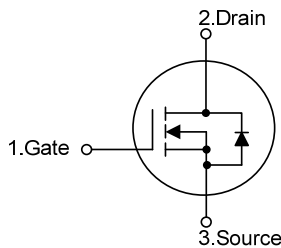
DESCRIPTION

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> <p>(1) Packing Type</p> <p>(2) Package Type</p> <p>(3) Lead Free</p>	<p>(1) T: Tube</p> <p>(2) TF2: TO-220F2</p> <p>(3) G: Halogen Free, L: Lead Free</p>
---	--

■ 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	$^{\circ}C$
Storage Temperature Range	T_{STG}	-55 ~ +150	$^{\circ}C$

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}	$I_D=250\mu A, V_{GS}=0V$	250			V
Drain-Source Leakage Current	I_{DSS}	$V_{DS}=250V$			25	μA
Gate-Source Leakage Current	Forward	$I_{GSS}, V_{GS}=+20V, V_{DS}=0V$			+100	nA
	Reverse	$V_{GS}=-20V, V_{DS}=0V$			-100	nA
ON CHARACTERISTICS						
Gate Threshold Voltage	$V_{GS(TH)}$	$I_D=250\mu A$	2		4	V
Static Drain-Source On-State Resistance	$R_{DS(ON)}$	$V_{GS}=10V, I_D=14A$			140	m Ω
DYNAMIC PARAMETERS						
Input Capacitance	C_{ISS}	$V_{GS}=0V, V_{DS}=25V, f=1MHz$		2700		pF
Output Capacitance	C_{OSS}			620		pF
Reverse Transfer Capacitance	C_{RSS}			180		pF
SWITCHING PARAMETERS						
Total Gate Charge	Q_G	$V_{DD}=50V, V_{GS}=10V, I_D=1.3A$			140	nC
Gate to Source Charge	Q_{GS}				24	nC
Gate to Drain Charge	Q_{GD}				71	nC
Turn-ON Delay Time	$t_{D(ON)}$	$V_{DD}=30V, I_D=0.5A, R_G=25\Omega, V_{GS}=0\sim 10V$		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}	$I_S=23A, V_{GS}=0V$			1.8	V

UTC assumes no responsibility for equipment failures that result from using products at values that exceed, even momentarily, rated values (such as maximum ratings, operating condition ranges, or other parameters) listed in products specifications of any and all UTC products described or contained herein. UTC products are not designed for use in life support appliances, devices or systems where malfunction of these products can be reasonably expected to result in personal injury. Reproduction in whole or in part is prohibited without the prior written consent of the copyright owner. The information presented in this document does not form part of any quotation or contract, is believed to be accurate and reliable and may be changed without notice.