



UFP264

Power MOSFET

38A, 250V N-CHANNEL POWER MOSFET

DESCRIPTION

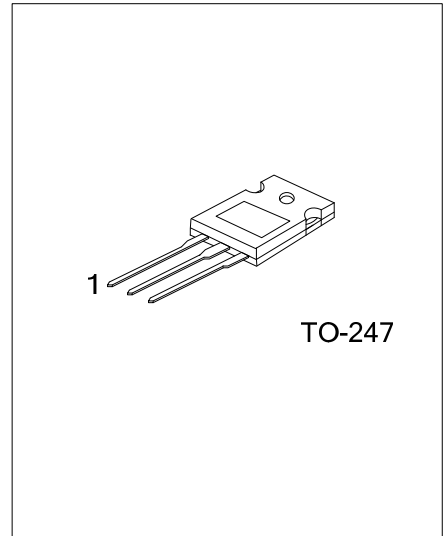
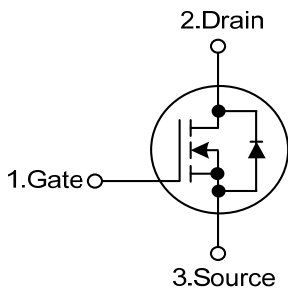
The UTC **UFP264** is an N-channel power MOSFET using UTC's advanced technology to provide the customers with perfect $R_{DS(ON)}$, high switching speed, high current capacity and low gate charge.

The UTC **UFP264** is suitable for motor control, AC-DC or DC-DC converters and audio amplifiers, etc.

FEATURES

- * $R_{DS(ON)} < 75m\Omega @ V_{GS}=10V, I_D=38A$
- * High Switching Speed
- * High Current Capacity
- * Low Gate Charge (typical 130nC)

SYMBOL



ORDERING INFORMATION

Ordering Number		Package	Pin Assignment			Packing
Lead Free	Halogen Free		1	2	3	
UFP264L-T47-T	UFP264G-T47-T	TO-247	G	D	S	Tube

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

<p>UFP264L-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) L: Lead Free, G: Halogen Free</p>
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■ ABSOLUTE MAXIMUM RATINGS ($T_C = 25^\circ\text{C}$, unless otherwise specified)(Note 1)

PARAMETER		SYMBOL	RATINGS	UNIT
Drain-Source Voltage ($V_{GS}=0$)		V_{DSS}	250	V
Gate-Source Voltage		V_{GSS}	± 20	V
Drain Current	Continuous I	I_D 38		A
	Pulsed (Note 1)	I_{DM}	152	A
Avalanche Energy		E_{AS}	1000	mJ
		E_{AR}	28	mJ
Power Dissipation		P_D	280	W
Derate above 25°C			2.2	mW/ $^\circ\text{C}$
Junction Temperature		T_J	150	$^\circ\text{C}$
Storage Temperature		T_{STG}	-55 ~ +150	$^\circ\text{C}$

- 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. Pulse width limited by safe operating area
 3. $V_{DD}=50\text{V}$, $L=1.1\text{mH}$, $R_G=25\Omega$, $I_{AS}=38\text{A}$

■ THERMAL DATA

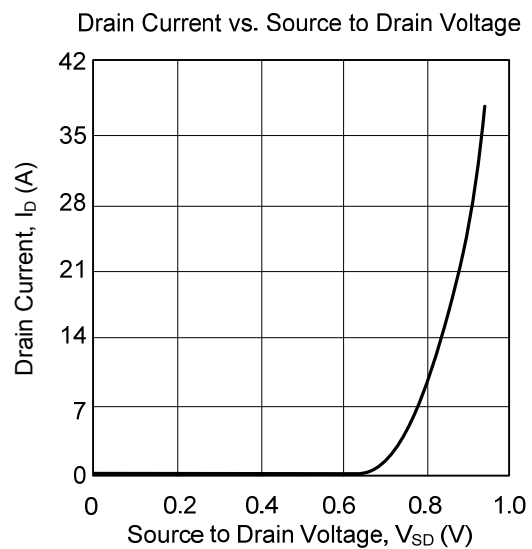
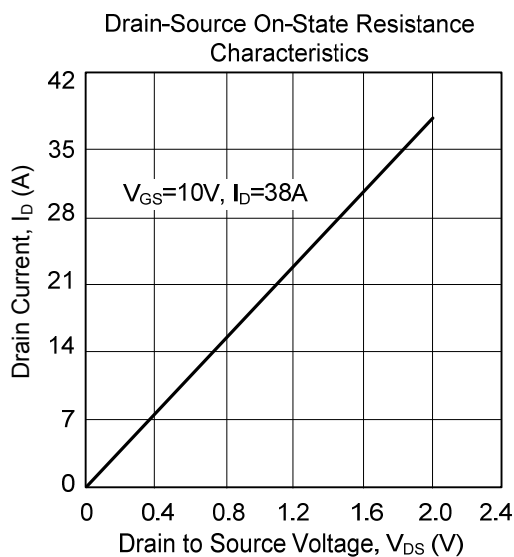
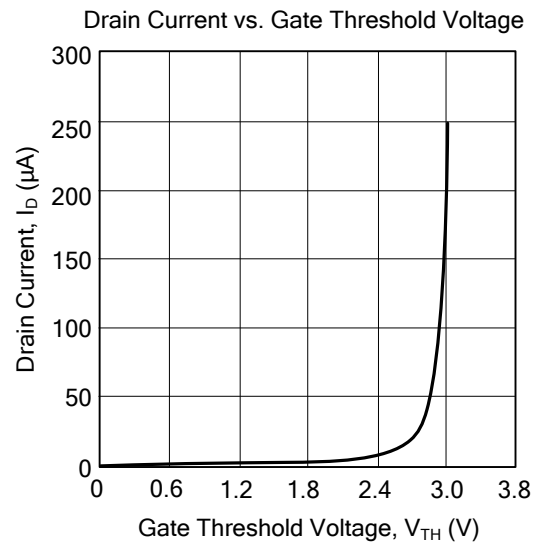
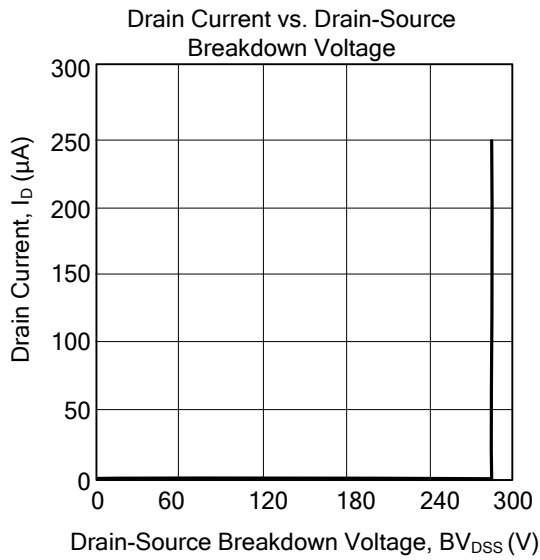
PARAMETER	SYMBOL	RATINGS	UNIT
Junction to Ambient	θ_{JA}	40	$^\circ\text{C}/\text{W}$
Junction to Case	θ_{JC}	0.45	$^\circ\text{C}/\text{W}$

■ ELECTRICAL CHARACTERISTICS ($T_C=25^\circ\text{C}$, unless otherwise specified)

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}	$V_{DS}=250\text{V}$, $V_{GS}=0\text{V}$			25	μA
Gate-Source Leakage Current	Forward Reverse V	I_{GSS} $V_{GS}=+20\text{V}$, $V_{DS}=0\text{V}$ $V_{GS}=-20\text{V}$, $V_{DS}=0\text{V}$			+100	nA
					-100	nA
ON CHARACTERISTICS (Note 2)						
Gate Threshold Voltage	$V_{GS(TH)}$	$V_{DS}=V_{GS}$, $I_D=250\mu\text{A}$	2	3	4	V
Static Drain-Source On-State Resistance	$R_{DS(ON)}$	$V_{GS}=10\text{V}$, $I_D=23\text{A}$			75	m Ω
DYNAMIC PARAMETERS						
Input Capacitance	C_{ISS}	$V_{GS}=0\text{V}$, $V_{DS}=25\text{V}$, $f=1.0\text{MHz}$	390	0		pF
Output Capacitance	C_{OSS}		950			pF
Reverse Transfer Capacitance	C_{RSS}		250			pF
SWITCHING PARAMETERS						
Total Gate Charge	Q_G	$V_{GS}=10\text{V}$, $V_{DD}=40\text{V}$, $I_D=38\text{A}$	130		170	nC
Gate to Source Charge	Q_{GS}		26			nC
Gate to Drain Charge	Q_{GD}		55			nC
Turn-ON Delay Time	$t_{D(ON)}$	$V_{DD}=30\text{V}$, $I_D=1\text{A}$, $R_G=4.7\Omega$, $V_{GS}=10\text{V}$	30			ns
Rise Time	t_R		180			ns
Fall-Time t	t_F		35			ns
Off-Voltage Rise Time	$t_{R(OFF)}$		135			ns
SOURCE- DRAIN DIODE RATINGS AND CHARACTERISTICS						
Maximum Body-Diode Continuous Current	I_S (Note 1)				38	A
Maximum Body-Diode Pulsed Current	I_{SM}				152	A
Drain-Source Diode Forward Voltage	V_{SD}	$I_{SD}=38\text{A}$, $V_{GS}=0\text{V}$ (Note 2)			1.8	V

- Notes: 1. Pulse width limited by safe operating area
 2. Pulsed: Pulse duration=300 μs , Duty cycle $\leq 2\%$

■ TYPICAL CHARACTERISTICS



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