



UF3N30

Preliminary

Power MOSFET

3A, 300V N-CHANNEL POWER MOSFET

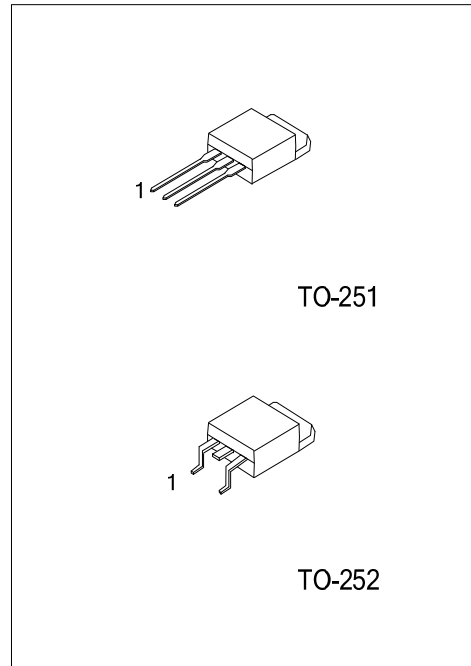
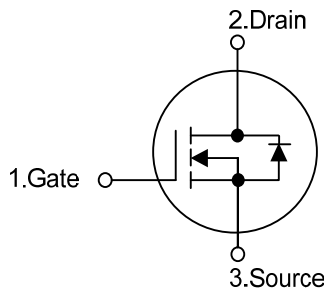
DESCRIPTION

The UTC **UF3N30** is an N-channel enhancement mode Power MOSFET using UTC' s advanced technology to provide customers with a minimum on-state resistance, low gate charge and superior switching performance.

FEATURES

- * $R_{DS(ON)} < 2\Omega$ @ $V_{GS}=10V, I_D=3A$
- * High switching speed
- * Typically 4nC low gate charge
- * 100% avalanche tested

SYMBOL



ORDERING INFORMATION

Ordering Number		Package	Pin Assignment			Packing
Lead Free	Halogen Free		1	2	3	
UF3N30L-TM3-R	UF3N30G-TM3-R	TO-251	G	D	S	Tape Reel
UF3N30L-TN3-R	UF3N30G-TN3-R	TO-252	G	D	S	Tape Reel

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

<p>UF3N30L-TM3-R</p> <p>(1) Packing Type</p> <p>(2) Package Type</p> <p>(3) Lead Free</p>	<p>(1) R: Tape Reel</p> <p>(2) AA3: SOT-223</p> <p>(3) L: Lead Free, G: Halogen Free</p>
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■ ABSOLUTE MAXIMUM RATINGS

PARAMETER	SYMBOL	RATINGS	UNIT
Drain-Source Voltage	V_{DSS}	300	V
Gate-Source Voltage	V_{GSS}	± 20	V
Continuous Drain Current	Continuous	I_D	3
	Pulsed	I_{DM}	12
Avalanche Energy	E_{AS}	52	mJ
Power Dissipation	P_D	50	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}	$I_D=250\mu A, V_{GS}=0V$	300			V
Drain-Source Leakage Current	I_{DSS}	$V_{DS}=300V$			1	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	$R_{DS(ON)}$	$V_{GS}=10V, I_D=3A$			2	Ω
DYNAMIC PARAMETERS						
Input Capacitance	C_{ISS}	$V_{GS}=0V, V_{DS}=25V, f=1MHz$		200		pF
Output Capacitance	C_{OSS}			90		pF
Reverse Transfer Capacitance	C_{RSS}			30		pF
SWITCHING PARAMETERS						
Total Gate Charge	Q_G	$V_{DD}=50V, I_D=1.3A, I_G=100\mu A, V_{GS}=10V$		4		nC
Gate to Source Charge	Q_{GS}			0.64		nC
Gate to Drain Charge	Q_{GD}			1.6		nC
Turn-ON Delay Time	$t_{D(ON)}$	$V_{DD}=30V, I_D=0.5A, R_G=25\Omega, V_{GS}=0\sim 10V$		10		ns
Rise Time	t_R			50		ns
Turn-OFF Delay Time	$t_{D(OFF)}$			30		ns
Fall-Time	t_F			40		ns
SOURCE- DRAIN DIODE RATINGS AND CHARACTERISTICS						
Maximum Body-Diode Continuous Current	I_S				3	A
Maximum Body-Diode Pulsed Current	I_{SM}				12	A
Drain-Source Diode Forward Voltage	V_{SD}	$I_S=0.85A$			1.3	V

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