



30N20

Preliminary

Power MOSFET

30A, 200V N-CHANNEL POWER MOSFET

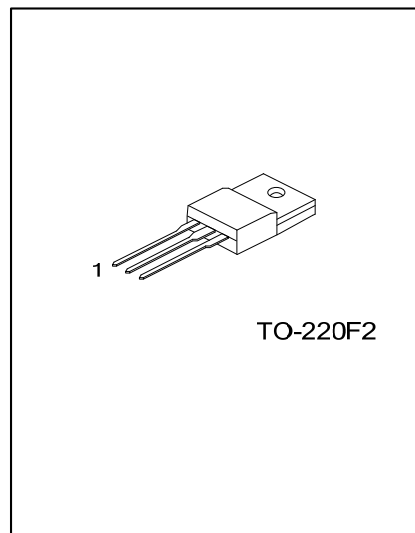
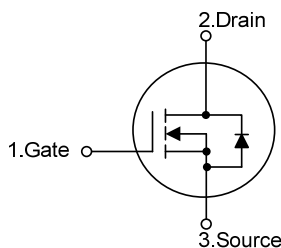
DESCRIPTION

The UTC **30N20** 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

- * $R_{DS(ON)} < 75m\Omega$ @ $V_{GS}=10V, I_D=15A$
- * Low Gate Charge (Typical 60nC)
- * High Switching Speed

SYMBOL



ORDERING INFORMATION

Ordering Number		Package	Pin Assignment			Packing
Lead Free	Halogen Free		1	2	3	
30N20L-TF2-T	30N20G-TF2-T	TO-220F2	G	D	S	Tube

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

<p>30N20L-TF2-T</p> <ul style="list-style-type: none">(1) Packing Type(2) Package Type(3) Lead Free		<p>(1) T: Tube</p> <p>(2) TF2: TO-220F2</p> <p>(3) G: Halogen Free, L: Lead Free</p>
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■ ABSOLUTE MAXIMUM RATINGS

PARAMETER		SYMBOL	RATINGS	UNIT
Drain-Source Voltage		V_{DSS}	200	V
Gate-Source Voltage		V_{GSS}	± 30	V
Drain Current	Continuous	I_D	30	A
	Pulsed	I_{DM}	124	A
Avalanche Current		I_{AR}	30	A
Avalanche Energy	Single Pulsed	E_{AS}	640	mJ
	Repetitive	E_{AR}	18	mJ
Power Dissipation		P_D	42	W
Junction Temperature		T_J	+150	°C
Storage Temperature Range		T_{STG}	-55 ~ +150	°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 =250μA, V _{GS} =0V	200			V
Drain-Source Leakage Current		I _{DSS}	V _{DS} =200V			1	μA
Gate-Source Leakage Current	Forward	I _{GSS}	V _{GS} =+30V, V _{DS} =0V			+100	nA
	Reverse		V _{GS} =-30V, V _{DS} =0V			-100	nA
ON CHARACTERISTICS							
Gate Threshold Voltage		V _{GS(TH)}	I _D =250μA	3		5	V
Static Drain-Source On-State Resistance		R _{DS(ON)}	V _{GS} =10V, I _D =15A			75	mΩ
DYNAMIC PARAMETERS							
Input Capacitance		C _{ISS}	V _{GS} =0V, V _{DS} =25V, f=1MHz		2400	3100	pF
Output Capacitance		C _{OSS}			430	560	pF
Reverse Transfer Capacitance		C _{RSS}			55	70	pF
SWITCHING PARAMETERS							
Total Gate Charge		Q _G	V _{DD} =50V, V _{GS} =10V , I _D =1.3A		60	78	nC
Gate to Source Charge		Q _{GS}			17		nC
Gate to Drain Charge		Q _{GD}			27		nC
Turn-ON Delay Time		t _{D(ON)}	V _{DD} =30V, I _D =0.5A, R _G =25Ω, V _{GS} =0~10V		40		ns
Rise Time		t _R			280		ns
Turn-OFF Delay Time		t _{D(OFF)}			125		ns
Fall-Time		t _F			115		ns
SOURCE- DRAIN DIODE RATINGS AND CHARACTERISTICS							
Maximum Body-Diode Continuous Current		I _S				30	A
Maximum Body-Diode Pulsed Current		I _{SM}				124	A
Drain-Source Diode Forward Voltage		V _{SD}	I _S =30A, V _{GS} =0V			1.5	V

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