



**N-CHANNEL ENHANCEMENT
MODE POWER MOSFET**

■ DESCRIPTION

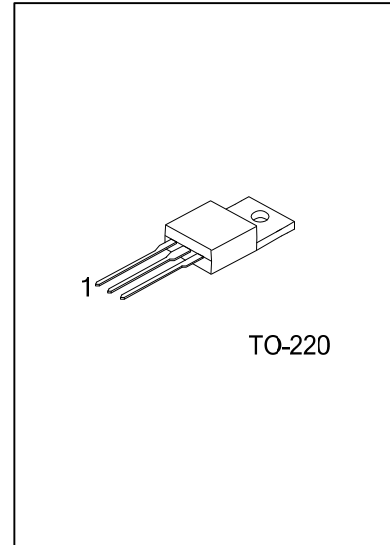
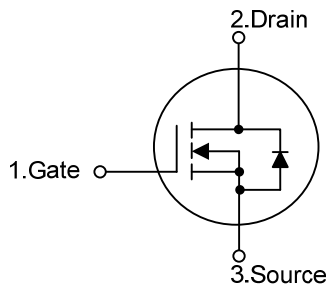
The U TC **UTT 120N06** is a n N-chan nel enh ancement mod e Power FET using UTC's advanced technology to provide customers with a mini mum on-state resistance and su perior s witching performance.

It also can withstand high e nergy p ulse in the aval anche and commutation mode.

■ FEATURES

- * Fast switching speed
- * $R_{DS(ON)} < 7m\Omega @ V_{GS}=10V$

■ SYMBOL



■ ORDERING INFORMATION

Ordering Number		Package	Pin Assignment			Packing
Lead Free	Halogen Free		1	2	3	
UTT120N06L-TA3-T	UTT120N06G-TA3-T	TO-220	G	D	S	Tube

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

<p>UTT120N06L-TA3-T</p>	<p>(1)Packing Type</p> <p>(2)Package Type</p> <p>(3)Lead Free</p>	<p>(1) T: Tube</p> <p>(2) TA3: TO-220</p> <p>(3) G: Halogen Free, L: Lead Free</p>
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■ ABSOLUTE MAXIMUM RATINGS (T_J=25°C, unless otherwise specified)

PARAMETER SYMBOL			RATINGS	UNIT	
Drain-Source Voltage		V _{DSS}	60	V	
Gate-Source Voltage		V _{GSS}	±20	V	
Drain Current	Continuous I	I _D	120	A	
	Pulsed I	I _{DM}	480	A	
Avalanche Energy	Single Pulsed	E _{AS}	875	mJ	
Peak Diode Recovery dv/dt		dv/dt	6	V/ns	
Power Dissipation		P _D	83	W	
Junction Temperature		T _J	+	150	°C
Storage Temperature		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.

■ THERMAL CHARACTERISTICS

PARAMETER SYMBOL		RATINGS	UNIT
Junction to Ambient	θ _{JA}	62.5	°C/W
Junction to Case	θ _{JC}	1.5	°C/W

■ ELECTRICAL CHARACTERISTICS (T_J=25°C, unless otherwise specified)

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
OFF CHARACTERISTICS						
Drain-Source Breakdown Voltage	BV _{DSS}	I _D =250μA, V _{GS} =0V	6			V
Drain-Source Leakage Current	I _{DSS}	V _{DS} =60V, V _{GS} =0V			10	μA
Gate- Source Leakage Current	I _{GSS}	V _{GS} =+20V, V _{DS} =0V			+100	nA
		V _{GS} =-20V, V _{DS} =0V			-100	nA
ON CHARACTERISTICS						
Gate Threshold Voltage	V _{GS(TH)}	V _{DS} =V _{GS} , I _D =250μA	1		3	V
Static Drain-Source On-State Resistance	R _{DS(ON)}	V _{GS} =10V, I _D =50A			7	mΩ
		V _{GS} =4.5V, I _D =40A			10	mΩ
DYNAMIC PARAMETERS						
Input Capacitance	C _{ISS}	V _{GS} =0V, V _{DS} =25V, f=1.0MHz	299	0		pF
Output Capacitance	C _{OSS}		585			pF
Reverse Transfer Capacitance	C _{RSS}		340			pF
SWITCHING PARAMETERS						
Total Gate Charge	Q _G	V _{GS} =10V, V _{DS} =30V, I _D =60A		500		nC
Gate to Source Charge	Q _{GS}		50			nC
Gate to Drain Charge	Q _{GD}		33			nC
Turn-ON Delay Time	t _{D(ON)}	V _{DD} =30V, V _{GS} =10V, I _D =60A, R _G =0.4Ω	90			ns
Rise Time	t _R		130			ns
Turn-OFF Delay Time	t _{D(OFF)}		768			ns
Fall-Time t _F	F		280			ns
SOURCE- DRAIN DIODE RATINGS AND CHARACTERISTICS						
Maximum Body-Diode Continuous Current	I _S				120	A
Maximum Body-Diode Pulsed Current	I _{SM}				480	A
Drain-Source Diode Forward Voltage	V _{SD}	I _S =120A, V _{GS} =0V			1.5	V

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