



UTT100N06

Power MOSFET

N-CHANNEL ENHANCEMENT MODE POWER MOSFET

DESCRIPTION

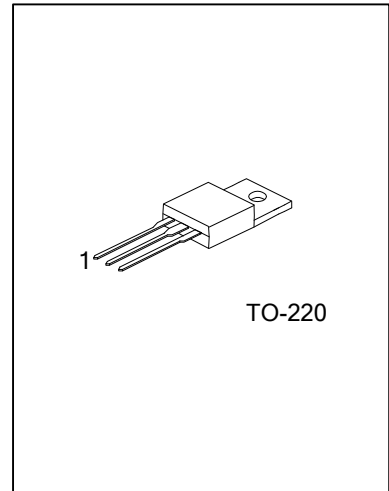
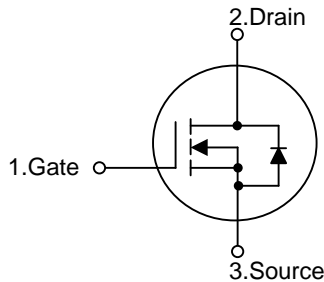
The UTC **UTT100N06** is an N-channel enhancement mode Power FET using UTC's advanced technology to provide customers with a minimum on-state resistance and superior switching performance.

It also can withstand high energy pulse in the avalanche and commutation mode.

FEATURES

- * Fast switching speed
- * 100A, 60V, $R_{DS(ON)} = 7m\Omega @ V_{GS} = 10V$
- * Work below 175°C
- * 100% avalanche tested
- * Improved dv/dt capability

SYMBOL



ORDERING INFORMATION

Ordering Number		Package	Pin Assignment			Packing
Lead Free	Halogen Free		1	2	3	
UTT100N06L-TA3-T	UTT100N06G-TA3-T	TO-220	G	D	S	Tube

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

<p>UTT100N06L-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>
--	--

■ ABSOLUTE MAXIMUM RATINGS ($T_J=25^{\circ}\text{C}$, 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_D	100	A
	Pulsed	I_{DM}	400	A
Avalanche Energy	Single Pulsed	E_{AS}	450	mJ
Peak Diode Recovery dv/dt		dv/dt	6	V/ns
Power Dissipation		P_D	100	W
Junction Temperature		T_J	+150	$^{\circ}\text{C}$
Storage Temperature		T_{STG}	-55~+150	$^{\circ}\text{C}$

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.

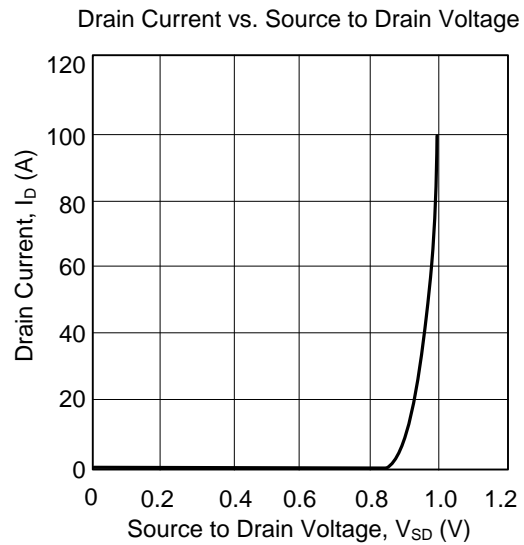
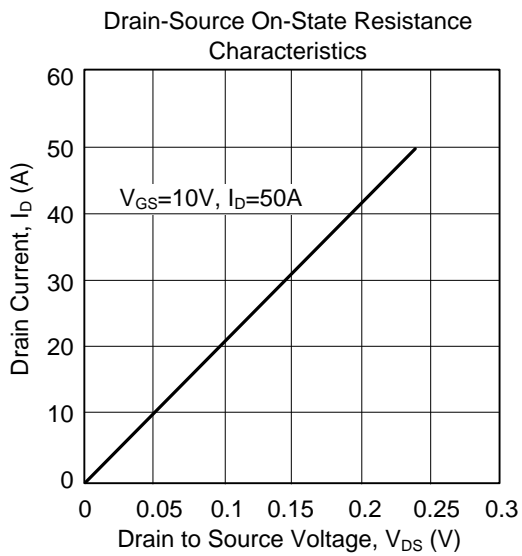
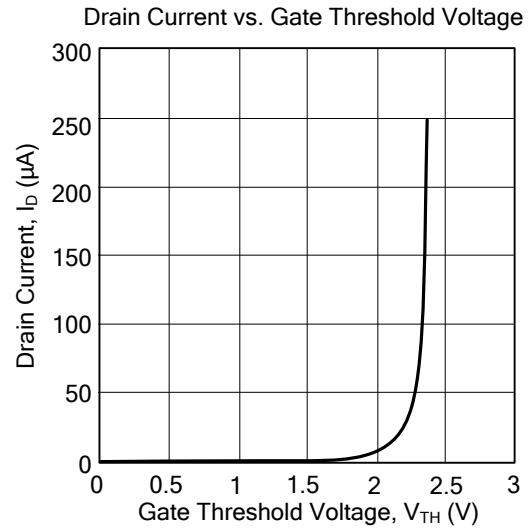
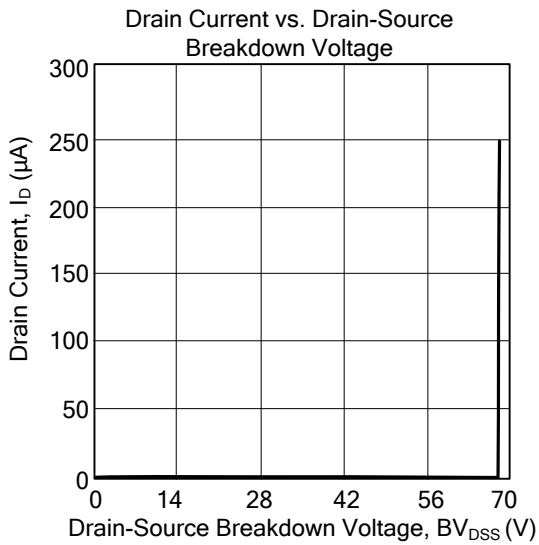
■ THERMAL CHARACTERISTICS

PARAMETER	SYMBOL	RATINGS	UNIT
Junction to Ambient	θ_{JA}	62.5	$^{\circ}\text{C/W}$
Junction to Case	θ_{JC}	1.5	$^{\circ}\text{C/W}$

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

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
OFF CHARACTERISTICS						
Drain-Source Breakdown Voltage	BV_{DSS}	$I_D=250\mu\text{A}$, $V_{GS}=0\text{V}$	60			V
Drain-Source Leakage Current	I_{DSS}	$V_{DS}=60\text{V}$, $V_{GS}=0\text{V}$			10	μA
Gate- Source Leakage Current	I_{GSS}	Forward			+100	nA
		Reverse			-100	nA
ON CHARACTERISTICS						
Gate Threshold Voltage	$V_{GS(TH)}$	$V_{DS}=V_{GS}$, $I_D=250\mu\text{A}$	1		3	V
Static Drain-Source On-State Resistance	$R_{DS(ON)}$	$V_{GS}=10\text{V}$, $I_D=50\text{A}$		7		m Ω
DYNAMIC PARAMETERS						
Input Capacitance	C_{ISS}	$V_{GS}=0\text{V}$, $V_{DS}=25\text{V}$, $f=1.0\text{MHz}$		12900		pF
Output Capacitance	C_{OSS}			1060		pF
Reverse Transfer Capacitance	C_{RSS}			700		pF
SWITCHING PARAMETERS						
Total Gate Charge	Q_G	$V_{GS}=10\text{V}$, $V_{DS}=30\text{V}$, $I_D=100\text{A}$		500		nC
Gate to Source Charge	Q_{GS}			50		nC
Gate to Drain Charge	Q_{GD}			33		nC
Turn-ON Delay Time	$t_{D(ON)}$	$V_{DD}=30\text{V}$, $V_{GS}=10\text{V}$, $I_D=100\text{A}$, $R_G=0.4\Omega$		90		ns
Rise Time	t_R			130	200	ns
Turn-OFF Delay Time	$t_{D(OFF)}$			768		ns
Fall-Time	t_F			280	420	ns
Transconductance	g_{FS}	$V_{DS}=15\text{V}$, $I_D=30\text{A}$	30			S
SOURCE- DRAIN DIODE RATINGS AND CHARACTERISTICS						
Maximum Body-Diode Continuous Current	I_S		100			A
Maximum Body-Diode Pulsed Current	I_{SM}		400			A
Drain-Source Diode Forward Voltage	V_{SD}	$I_S=100\text{A}$, $V_{GS}=0\text{V}$		1.0	1.5	V
Resistance of Gate	R_G		0.65	1.3	2	Ω

■ TYPICAL CHARACTERISTICS



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.