



N-CHANNEL ENHANCEMENT MODE POWER MOSFET

DESCRIPTION

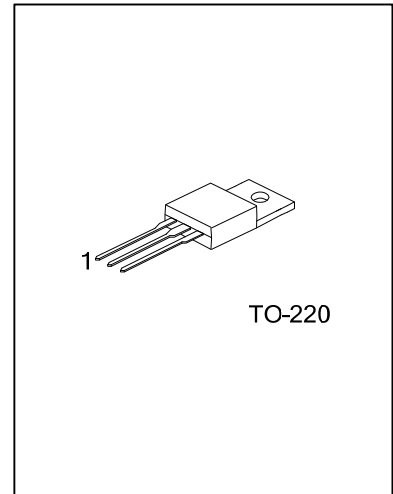
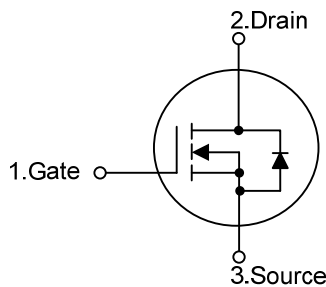
The UTC **UTT100N06** is an N-channel enhancement mode Power FET using UTC's advanced technology to provide customers with a minimum on-state resistance and superior switching performance.

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

UTT100N06L-TA3-T		(1)Packing Type	(1) T: Tube
		(2)Package Type	(2) TA3: TO-220
		(3)Lead Free	(3) G: Halogen Free, L: Lead Free

■ ABSOLUTE MAXIMUM RATINGS ($T_J=25^{\circ}\text{C}$, unless otherwise specified)

PARAMETER		SYMBOL	RATINGS	UNIT
Drain-Source Voltage		V_{DS}	60	V
Gate-Source Voltage		V_{GS}	± 20	V
Drain Current	Continuous	I_D	100	A
	Pulsed	I_{DM}	400	A
Avalanche Energy	Single Pulsed	E_{AS}	875	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 =250μA, V _{GS} =0V	60			V
Drain-Source Leakage Current		I _{DSS}	V _{DS} =60V, V _{GS} =0V			10	μA
Gate- Source Leakage Current	Forward	I _{GSS}	V _{GS} =+20V, V _{DS} =0V			+100	nA
	Reverse		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		12900		pF
Output Capacitance		C _{OSS}			1060		pF
Reverse Transfer Capacitance		C _{RSS}			700		pF
SWITCHING PARAMETERS							
Total Gate Charge		Q _G	V _{GS} =10V, V _{DS} =30V, I _D =100A		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 = 100A, R _G =0.4Ω		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} =15V, I _D =30A	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 =100A, V _{GS} =0V		1.0	1.5	V
Resistance of Gate		R _G		0.65	1.3	2	Ω

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