



## UTT80P06

Preliminary

Power MOSFET

### 80A, 60V P-CHANNEL POWER MOSFET

#### DESCRIPTION

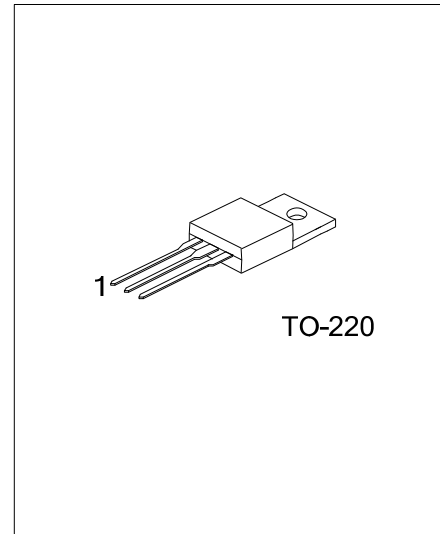
The UTC **UTT80P06** is a P-channel power MOSFET using UTC's advanced technology to provide the customers with high switching speed and a minimum on-state resistance, and it can also withstand high energy in the avalanche.

The UTC **UTT80P06** is suitable for low voltage and high speed switching applications

#### FEATURES

\*  $R_{DS(ON)}=0.021\Omega @ V_{GS}=-10V, I_D=-64A$

\* High Switching Speed



#### ORDERING INFORMATION

Ordering Number		Package	Pin Assignment			Packing
Lead Free	Halogen Free		1	2	3	
UTT80P06L-TA3-T	UTT80P06G-TA3-T	TO-220	G	D	S	Tube

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

UTT80P06L-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		$V_{DSS}$	-60	V	
Gate-Source Voltage		$V_{GSS}$	$\pm 20$	V	
Drain Current	Continuous	$I_D$	$T_C=25^\circ\text{C}$	-80	A
			$T_C=100^\circ\text{C}$	-64	A
	Pulsed	$I_{DM}$	$T_C=25^\circ\text{C}$	-320	A
Avalanche Energy		Single Pulsed	$E_{AS}$	823	mJ
		Repetitive	$E_{AR}$	34	mJ
Power Dissipation		$P_D$	$T_C=25^\circ\text{C}$	313	W
Junction Temperature		$T_J$	+150	$^\circ\text{C}$	
Storage Temperature		$T_{STG}$	-55~+150	$^\circ\text{C}$	

Notes: 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 DATA

PARAMETER	SYMBOL	RATINGS	UNIT
Junction to Case	$\theta_{JC}$	0.4	$^\circ\text{C/W}$
Junction to Ambient	$\theta_{JA}$	62	$^\circ\text{C/W}$

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

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
<b>OFF CHARACTERISTICS</b>						
Drain-Source Breakdown Voltage	$BV_{DSS}$	$I_D=-250\mu\text{A}, V_{GS}=0\text{V}$	-60			V
Drain-Source Leakage Current	$I_{DSS}$	$V_{DS}=-60\text{V}, V_{GS}=0\text{V}, T_J=25^\circ\text{C}$		-0.1	-1	$\mu\text{A}$
		$V_{DS}=-60\text{V}, T_C=150^\circ\text{C}$		-10	-100	$\mu\text{A}$
Gate-Source Leakage Current	Forward	$I_{GSS}$	$V_{GS}=+20\text{V}, V_{DS}=0\text{V}$		+100	nA
	Reverse			$V_{GS}=-20\text{V}, V_{DS}=0\text{V}$		-100
<b>ON CHARACTERISTICS</b>						
Gate Threshold Voltage	$V_{GS(TH)}$	$V_{DS}=V_{GS}, I_D=-5.5\text{mA}$	-2.1	-3	-4	V
Static Drain-Source On-State Resistance	$R_{DS(ON)}$	$I_D=-64\text{A}, V_{GS}=-10\text{V}$		0.021	0.023	$\Omega$
<b>DYNAMIC PARAMETERS</b>						
Input Capacitance	$C_{ISS}$	$V_{GS}=0\text{V}, V_{DS}=-25\text{V}, f=1.0\text{MHz}$		4026	5033	pF
Output Capacitance	$C_{OSS}$			1252	1565	pF
Reverse Transfer Capacitance	$C_{RSS}$			437	546	pF
<b>SWITCHING PARAMETERS</b>						
Total Gate Charge	$Q_G$	$V_{DD}=-48\text{V}, I_D=-80\text{A}, V_{GS}=-10\text{V}$		115	173	nC
Gate to Source Charge	$Q_{GS}$	$V_{DD}=-48\text{V}, I_D=-80\text{A}$		27.4	41	nC
Gate to Drain Charge	$Q_{GD}$			50	75	nC
Turn-ON Delay Time	$t_{D(ON)}$			24	36	ns
Rise Time	$t_R$	$V_{DD}=-30\text{V}, I_D=-64\text{A}, R_G=1\Omega, V_{GS}=-10\text{V}$		18	27	ns
Turn-OFF Delay Time	$t_{D(OFF)}$			56	84	ns
Fall-Time	$t_F$			30	45	ns
<b>SOURCE- DRAIN DIODE RATINGS AND CHARACTERISTICS</b>						
Maximum Body-Diode Continuous Current	$I_S$	$T_C=25^\circ\text{C}$			-80	A
Maximum Body-Diode Pulsed Current	$I_{SM}$	$T_C=25^\circ\text{C}$			-320	A
Drain-Source Diode Forward Voltage	$V_{SD}$	$I_F=-80\text{A}, V_{GS}=0\text{V}$		-1.2	-1.6	V

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