



UTT80P06

Preliminary

Power MOSFET

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

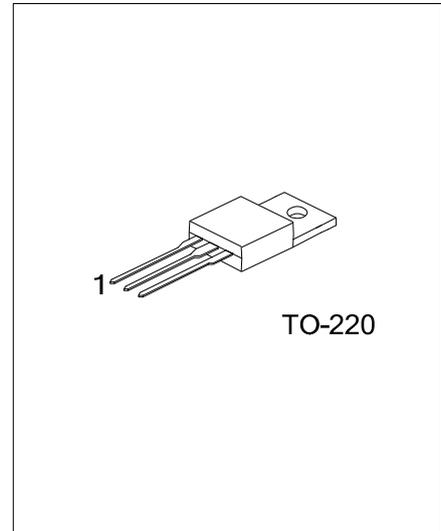
■ DESCRIPTION

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

<p>UTT80P06L-TA3-T</p> <p>(1)Packing Type (2)Package Type (3)Lead Free</p>	<p>(1) T: Tube (2) TA3: TO-220 (3) G: Halogen Free, L: Lead Free</p>
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■ 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	$T_C=25^\circ\text{C}$	-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	θ_{JC}	0.4	$^\circ\text{C}/\text{W}$
Junction to Ambient	θ_{JA}	62	$^\circ\text{C}/\text{W}$

■ 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}	$V_{DS}=-60\text{V}$, $V_{GS}=0\text{V}$, $T_J=25^\circ\text{C}$		-0.1	-1	μA
		$V_{DS}=-60\text{V}$, $T_C=150^\circ\text{C}$		-10	-100	μA
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
ON CHARACTERISTICS						
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	Ω
DYNAMIC PARAMETERS						
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
SWITCHING PARAMETERS						
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	$t_{D(ON)}$	$V_{DD}=-30\text{V}$, $I_D=-64\text{A}$, $R_G=1\Omega$, $V_{GS}=-10\text{V}$		24	36	ns
Rise Time	t_R			18	27	ns
Turn-OFF Delay Time	$t_{D(OFF)}$			56	84	ns
Fall-Time	t_F			30	45	ns
SOURCE- DRAIN DIODE RATINGS AND CHARACTERISTICS						
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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