

# UNISONIC TECHNOLOGIES CO., LTD

UTT70P10 Preliminary Power MOSFET

# 70A, 100V P-CHANNEL POWER MOSFET

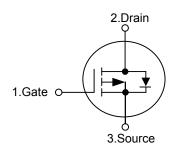
#### ■ DESCRIPTION

The UTC **UTT70P10** 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. It can also withstand high energy in the avalanche.

#### ■ FEATURES

- \*  $R_{DS(ON)}$ =0.03 $\Omega$  @  $V_{GS}$ =-10V,  $I_{D}$ =-20A
- \* High Switching Speed

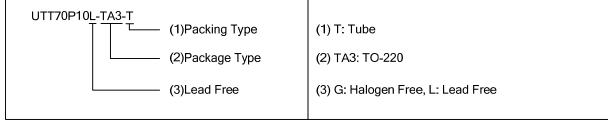
#### ■ SYMBOL

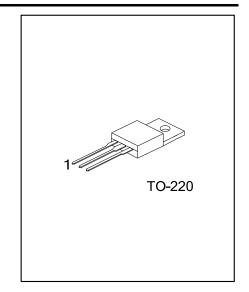


# ORDERING INFORMATION

Ordering	Deelsese	Pin Assignment			Daakina		
Lead Free	Halogen Free	Package	1	2	3	Packing	
UTT70P10L-TA3-T	UTT70P10G-TA3-T	TO-220	G	D	S	Tube	

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





### ■ ABSOLUTE MAXIMUM RATINGS (T<sub>C</sub>=25°C, unless otherwise specified)

PARAMETER		SYMBOL	RATINGS	UNIT	
Gate-Source Voltage		$V_{GSS}$	±20	V	
Drain Current	Continuous	I <sub>D</sub>	-70	Α	
	Pulsed	I <sub>DM</sub>	-90	Α	
Power Dissipation		P <sub>D</sub>	225	W	
Junction Temperature		TJ	+150	°C	
Storage Temperature		T <sub>STG</sub>	-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 Case	$\theta_{ m JC}$	0.55	°C/W	

# ■ ELECTRICAL CHARACTERISTICS

PARAMETER		SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT	
OFF CHARACTERISTICS								
Drain-Source Breakdown Voltage		BV <sub>DSS</sub>	I <sub>D</sub> =-250μA, V <sub>GS</sub> =0V				V	
Drain-Source Leakage Current		I <sub>DSS</sub>	V <sub>DS</sub> =0.8×Max.rating,V <sub>GS</sub> =0V,T <sub>J</sub> =25°C			-1		
			V <sub>DS</sub> =0.8×Max.rating,V <sub>GS</sub> =0V,T <sub>J</sub> =125°C			-500	μA	
Gate- Source Leakage	Forward		V <sub>GS</sub> =+20V			+100	nA	
Current	Reverse	I <sub>GSS</sub>	V <sub>GS</sub> =-20V			-100	nA	
ON CHARACTERISTICS								
Gate Threshold Voltage		$V_{GS(TH)}$	$V_{DS}=V_{GS}$ , $I_D=-250\mu A$	-1		-3	V	
Static Drain-Source On-State Resistance		R <sub>DS(ON)</sub>	$V_{GS}$ =-10V, $I_D$ =-20A			0.03	Ω	
DYNAMIC PARAMETERS	5					ā		
Input Capacitance		C <sub>ISS</sub>	V <sub>GS</sub> =0V, V <sub>DS</sub> =-50V, f=1.0MHz		2250		pF	
Output Capacitance		Coss			700		pF	
Reverse Transfer Capacitance		C <sub>RSS</sub>			275		pF	
SWITCHING PARAMETERS								
Turn-ON Delay Time		t <sub>D(ON)</sub>	$V_{DD}$ =-50V, $V_{GS}$ =-10V, $I_{D}$ =-50A, $R_{G}$ =1 $\Omega$		20	200	ns	
Rise Time		t <sub>R</sub>			110	420	ns	
Turn-OFF Delay Time		t <sub>D(OFF)</sub>			145	1500	ns	
Fall-Time		t <sub>F</sub>			300	500	ns	
SOURCE- DRAIN DIODE RATINGS AND CHARACTERISTICS								
Drain-Source Diode Forward Voltage		Vsp	I <sub>F</sub> =-20A, V <sub>GS</sub> =0V, Pulse test,		-1.0	-1.5	V	
Diain-Source Diode Forwa	aid vollage	VSD	t≤300µs, duty cycle d≤2%		-1.0	-1.5	V	
Body Diode Reverse Recovery Time		t <sub>rr</sub>	T <sub>J</sub> =25°C, I <sub>F</sub> =-20A, V <sub>R</sub> =-50V,	8	80	120	ns	
			di/dt=-100A/μs		00	120	110	

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