



UTT60N05

Preliminary

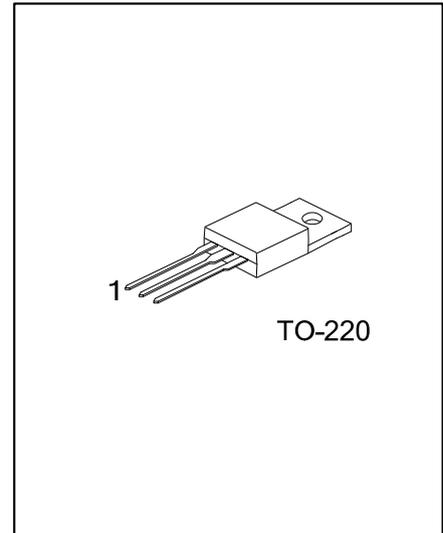
Power MOSFET

60A, 50V N-CHANNEL ENHANCEMENT MODE POWER MOSFET TRANSISTOR

DESCRIPTION

The UTC **UTT60N05** is an N-channel enhancement power MOSFET using UTC's advanced technology to provide the customers with perfect $R_{DS(ON)}$, high switching speed, high current capacity and low gate charge.

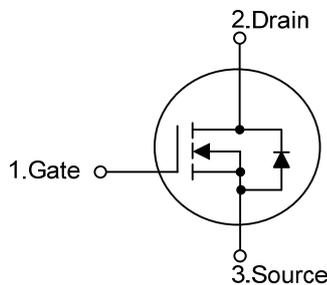
The UTC **UTT60N05** is suitable for motor control, AC-DC or DC-DC converters and audio amplifiers, etc.



FEATURES

- * $R_{DS(ON)}=14m\Omega @ V_{GS}=10V, I_D=20A$
- * High Switching Speed
- * High Current Capacity
- * Low Gate Charge(typical 39nC)

SYMBOL



ORDERING INFORMATION

Ordering Number		Package	Pin Assignment			Packing
Lead Free	Halogen Free		1	2	3	
UTT60N05L-TA3-T	UTT60N05G-TA3-T	TO-220	G	D	S	Tube

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

UTT60N05L-TA3-T 	(1)Packing Type (2)Package Type (3)Lead Free	(1) T: Tube (2) TA3: TO-220 (3) G: Halogen Free, L: Lead Free
---------------------	--	---

■ ABSOLUTE MAXIMUM RATINGS

PARAMETER		SYMBOL	RATINGS	UNIT
Drain-Source Voltage		V_{DSS}	50	V
Gate-Source Voltage		V_{GSS}	± 20	V
Drain Current	Continuous	I_D	60	A
	Pulsed	I_{DM}	120	A
Avalanche Energy	Single Pulsed	E_{AS}	600	mJ
	Repetitive	E_{AR}	150	mJ
Power Dissipation		P_D	125	W
Junction Temperature		T_J	+150	$^{\circ}C$
Storage Temperature		T_{STG}	-55 ~ +150	$^{\circ}C$

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 DATA

PARAMETER	SYMBOL	RATINGS	UNIT
Junction to Ambient	θ_{JA}	62.5	$^{\circ}C/W$
Junction to Case	θ_{JC}	1	$^{\circ}C/W$

■ ELECTRICAL CHARACTERISTICS

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
OFF CHARACTERISTICS						
Drain-Source Breakdown Voltage	BV_{DSS}	$I_D=250\mu A, V_{GS}=0V$	50			V
Drain-Source Leakage Current	I_{DSS}	$V_{DS}=50V, V_{GS}=0V$			1	μA
Gate- Source Leakage Current	Forward	I_{GSS}			+100	nA
ON CHARACTERISTICS						
Gate Threshold Voltage	$V_{GS(TH)}$	$V_{DS}=V_{GS}, I_D=250\mu A$	2		4	V
Static Drain-Source On-State Resistance	$R_{DS(ON)}$	$V_{GS}=10V, I_D=20A$		14	18	m Ω
DYNAMIC PARAMETERS						
Input Capacitance	C_{ISS}	$V_{GS}=0V, V_{DS}=25V, f=1.0MHz$		2000		pF
Output Capacitance	C_{OSS}			400		pF
Reverse Transfer Capacitance	C_{RSS}			115		pF
SWITCHING PARAMETERS						
Total Gate Charge	Q_G	$V_{GS}=10V, V_{DS}=30V, I_D=60A, I_G=3.33mA$		39	60	nC
Gate to Source Charge	Q_{GS}			12		nC
Gate to Drain Charge	Q_{GD}			10		nC
Turn-ON Delay Time	$t_{D(ON)}$	$V_{DD}=30V, I_D=15A, R_G=4.7\Omega, V_{GS}=10V$		12	30	ns
Rise Time	t_R			11	30	ns
Turn-OFF Delay Time	$t_{D(OFF)}$			25	50	ns
Fall-Time	t_F			15	30	ns
SOURCE- DRAIN DIODE RATINGS AND CHARACTERISTICS						
Maximum Body-Diode Continuous Current	I_S		60			A
Maximum Body-Diode Pulsed Current	I_{SM}		120			A
Drain-Source Diode Forward Voltage	V_{SD}	$I_S=60A, V_{GS}=0V$			1.6	V

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.