

**UTT30N05**

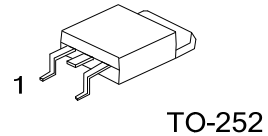
Preliminary

Power MOSFET**30A, 50V N-CHANNEL
ENHANCEMENT MODE POWER
MOSFET TRANSISTOR**

■ DESCRIPTION

The UTC **UTT30N05** 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.

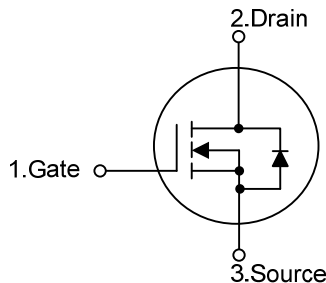
The UTC **UTT30N05** is suitable for motor control, AC-DC or DC-DC converters and audio amplifiers, etc.



■ FEATURES

- * $R_{DS(ON)}=32m\Omega$ @ $V_{GS}=10V, I_D=15A$
- * High Switching Speed
- * High Current Capacity
- * Low Gate Charge(typical 20nC)

■ SYMBOL



■ ORDERING INFORMATION

Ordering Number		Package	Pin Assignment			Packing
Lead Free	Halogen Free		1	2	3	
UTT30N05L-TN3-R	UTT30N05G-TN3-R	TO-252	G	D	S	Tape Reel

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

UTT30N05L-TN3-R		(1) Packing Type	(1) R: Tape Reel
		(2) Package Type	(2) TN3: TO-252
		(3) Lead Free	(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	30	A
	Pulsed	I_{DM}	120	A
Avalanche Energy	Single Pulsed	E_{AS}	300	mJ
	Repetitive	E_{AR}	8	mJ
Power Dissipation		P_D	44	W
Junction Temperature		T_J	+150	°C
Storage Temperature		T_{STG}	-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 Ambient	θ_{JA}	50	°C/W
Junction to Case	θ_{JC}	2.85	°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}	$V_{GS}=+20V$, $V_{DS}=0V$			+100	nA
	Reverse		$V_{GS}=-20V$, $V_{DS}=0V$			-100	nA
ON CHARACTERISTICS							
Gate Threshold Voltage		$V_{GS(TH)}$	$V_{DS}=V_{GS}$, $I_D=250\mu A$	2		4	V
Static Drain-Source On-State Resistance		$R_{DS(ON)}$	$V_{GS}=10V$, $I_D=15A$		32	40	m Ω
DYNAMIC PARAMETERS							
Input Capacitance		C_{ISS}	$V_{GS}=0V$, $V_{DS}=25V$, $f=1.0MHz$		800		pF
Output Capacitance		C_{OSS}			300		pF
Reverse Transfer Capacitance		C_{RSS}			80		pF
SWITCHING PARAMETERS							
Total Gate Charge		Q_G	$V_{GS}=10V$, $V_{DS}=30V$, $I_D=30A$, $I_G=3.33mA$		20	30	nC
Gate to Source Charge		Q_{GS}			6		nC
Gate to Drain Charge		Q_{GD}			9		nC
Turn-ON Delay Time		$t_{D(ON)}$	$V_{DD}=30V$, $I_D=15A$, $R_G=4.7\Omega$, $V_{GS}=10V$		12		ns
Rise Time		t_R			79		ns
Turn-OFF Delay Time		$t_{D(OFF)}$			50		ns
Fall-Time		t_F			52		ns
SOURCE- DRAIN DIODE RATINGS AND CHARACTERISTICS							
Maximum Body-Diode Continuous Current		I_S		30			A
Maximum Body-Diode Pulsed Current		I_{SM}		120			A
Drain-Source Diode Forward Voltage		V_{SD}	$I_S=30A$, $V_{GS}=0V$			1.4	V

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