



UTT30N05

Power MOSFET

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

DESCRIPTION

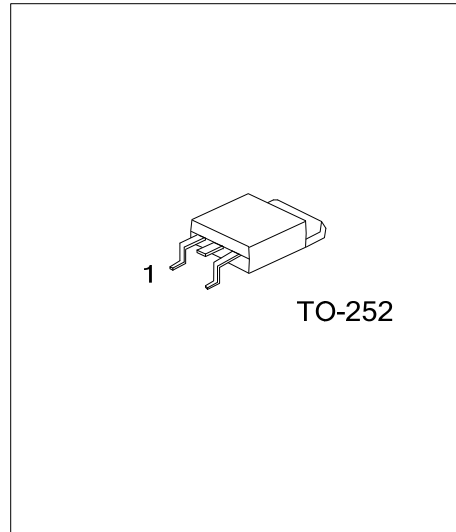
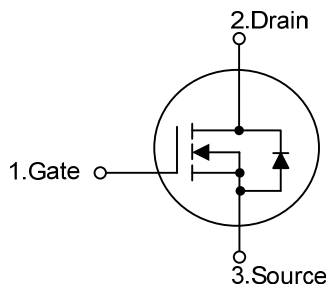
The UTC **UTT30N05** is an N-channel enhancement power MOSFET using UTC's advanced technology to provide the customers with perfect $R_{DS(ON)}$, high switching speed, high current capacity and low gate charge.

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

FEATURES

- * $R_{DS(ON)} < 40\text{ m}\Omega @ V_{GS}=10\text{V}, I_D=15\text{A}$
- * High Switching Speed
- * High Current Capacity
- * Low Gate Charge (typical 20nC)

SYMBOL



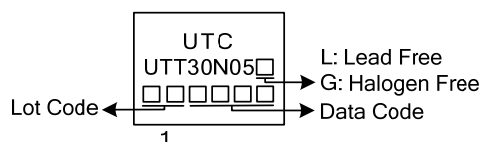
ORDERING INFORMATION

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) R: Tape Reel (2) TN3: TO-252 (3) L: Lead Free, G: Halogen Free and Lead Free
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MARKING



■ 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	I_{GSS}	$V_{GS}=+20V, V_{DS}=0V$			+100	nA
		$V_{GS}=-20V, V_{DS}=0V$			-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	$R_{DS(ON)}$	$V_{GS}=10V, I_D=15A$			40	m Ω
DYNAMIC PARAMETERS						
Input Capacitance	C_{ISS}	$V_{GS}=0V, V_{DS}=25V, f=1.0MHz$		1000		pF
Output Capacitance	C_{OSS}			155		pF
Reverse Transfer Capacitance	C_{RSS}			95		pF
SWITCHING PARAMETERS						
Total Gate Charge	Q_G	$V_{GS}=10V, V_{DS}=50V, I_D=30A, I_G=3.33mA$		70	90	nC
Gate to Source Charge	Q_{GS}			34		nC
Gate to Drain Charge	Q_{GD}			10		nC
Turn-ON Delay Time	$t_{D(ON)}$	$V_{DD}=30V, I_D=1A, R_G=4.7\Omega, V_{GS}=10V$		48		ns
Rise Time	t_R			70		ns
Turn-OFF Delay Time	$t_{D(OFF)}$			140		ns
Fall-Time	t_F			75		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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