

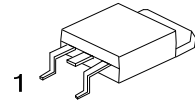


50A, 50V N-CHANNEL ENHANCEMENT MODE POWER MOSFET TRANSISTOR

DESCRIPTION

The UTC **UTT50N05** 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 **UTT50N05** is suitable for motor control, AC-DC or DC-DC converters and audio amplifiers, etc.

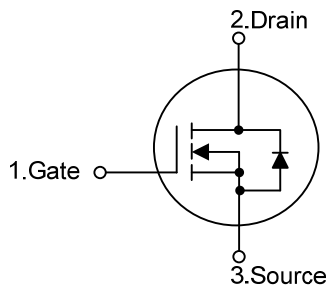


TO-252

FEATURES

- * $R_{DS(ON)}=18m\Omega$ @ $V_{GS}=10V, I_D=20A$
- * High Switching Speed
- * High Current Capacity
- * Low Gate Charge(typical 30nC)

SYMBOL



ORDERING INFORMATION

Ordering Number		Package	Pin Assignment			Packing
Lead Free	Halogen Free		1	2	3	
UTT50N05L-TN3-R	UTT50N05G-TN3-R	TO-252	G	D	S	Tape Reel

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

UTT50N05L-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	50	A
	Pulsed	I_{DM}	200	A
Avalanche Energy	Single Pulsed	E_{AS}	400	mJ
	Repetitive	E_{AR}	100	mJ
Power Dissipation		P_D	113	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 DATA

PARAMETER	SYMBOL	RATINGS	UNIT
Junction to Ambient	θ_{JA}	100	°C/W
Junction to Case	θ_{JC}	1.1	°C/W

■ ELECTRICAL CHARACTERISTICS

PARAMETER		SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
OFF CHARACTERISTICS							
Drain-Source Breakdown Voltage		BV _{DSS}	I _D =250μA, V _{GS} =0V	50			V
Drain-Source Leakage Current		I _{DSS}	V _{DS} =100V, V _{GS} =0V			10	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 =250μA	2		4	V
Static Drain-Source On-State Resistance		R _{DS(ON)}	V _{GS} =10V, I _D =20A		18	23	mΩ
DYNAMIC PARAMETERS							
Input Capacitance		C _{ISS}	V _{GS} =0V, V _{DS} =25V, f=1.0MHz		900	1220	pF
Output Capacitance		C _{OSS}			430	550	pF
Reverse Transfer Capacitance		C _{RSS}			80	100	pF
SWITCHING PARAMETERS							
Total Gate Charge		Q _G	V _{GS} =10V, V _{DS} =30V, I _D =50A, I _G =3.33mA		30	40	nC
Gate to Source Charge		Q _{GS}			9.6		nC
Gate to Drain Charge		Q _{GD}			10		nC
Turn-ON Delay Time		t _{D(ON)}	V _{DD} =30V, I _D =15A, R _G =2.5Ω, V _{GS} =10V		40	60	ns
Rise Time		t _R			100	200	ns
Turn-OFF Delay Time		t _{D(OFF)}			90	180	ns
Fall-Time		t _F			80	160	ns
SOURCE- DRAIN DIODE RATINGS AND CHARACTERISTICS							
Maximum Body-Diode Continuous Current		I _S		50			A
Maximum Body-Diode Pulsed Current		I _{SM}		200			A
Drain-Source Diode Forward Voltage		V _{SD}	I _S =50A, V _{GS} =0V			1.5	V

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