



UTT10N10

Preliminary

Power MOSFET

10A, 100V N-CHANNEL MOSFET

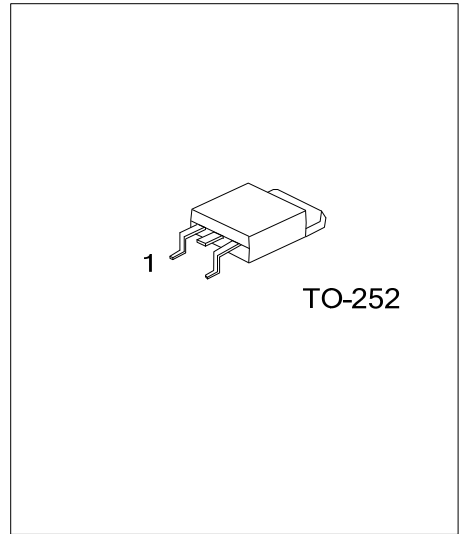
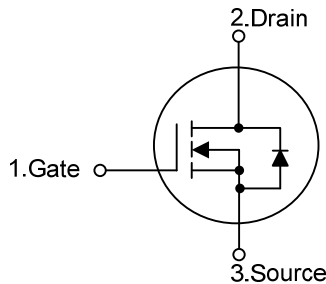
DESCRIPTION

The UTC **UTT10N10** is an N-channel enhancement mode power MOSFET using UTC's advanced technology to provide the customers with a minimum on-state resistance, high switching speed and ultra low gate charge. It also can withstand high energy pulse in the avalanche and commutation mode.

FEATURES

- * $R_{DS(on)} = 142m\Omega$ @ $V_{GS} = 10V, I_D = 6.4A$
- * High Switching Speed
- * Low C_{RSS} (Typically 20pF)
- * Low Gate Charge (Typically 12nC)

SYMBOL



ORDERING INFORMATION

Ordering Number		Package	Pin Assignment			Packing
Lead Free	Halogen Free		1	2	3	
UTT10N10L-TN3-R	UTT10N10G-TN3-R	TO-252	G	D	S	Tape Reel
UTT10N10L-TN3-T	UTT10N10G-TN3-T	TO-252	G	D	S	Tube

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

<p>UTT10N10L-TN3-R</p> <p>(1) Packing Type</p> <p>(2) Package Type</p> <p>(3) Lead Free</p>		<p>(1) R: Tape Reel, T: Tube</p> <p>(2) TN3: TO-252</p> <p>(3) G: Halogen Free, L: Lead Free</p>
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■ ABSOLUTE MAXIMUM RATINGS (unless otherwise specified)

PARAMETER		SYMBOL	RATINGS	UNIT
Drain-Source Voltage		V_{DSS}	100	V
Gate-Source Voltage		V_{GSS}	± 25	V
Drain Current	Continuous	I_D	10	A
	Pulsed	I_{DM}	40	A
Avalanche Current		I_{AR}	12.8	A
Avalanche Energy	Single Pulsed	E_{AS}	95	mJ
	Repetitive	E_{AR}	6.5	mJ
Peak Diode Recovery dv/dt		dv/dt	6	V/ns
Power Dissipation		P_D	54	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}	62.5	°C/W
Junction to Case	θ_{JC}	2.31	°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	100			V
Drain-Source Leakage Current		I _{DSS}	V _{DS} =100V, V _{GS} =0V			1	μA
Gate-Source Leakage Current	Forward	I _{GSS}	V _{GS} =+25V, V _{DS} =0V			+100	nA
	Reverse		V _{GS} =-25V, V _{DS} =0V			-100	nA
ON CHARACTERISTICS							
Gate Threshold Voltage		V _{GS(TH)}	V _{DS} =V _{GS} , I _D =250μA	2.0		4.0	V
Static Drain-Source On-State Resistance		R _{DS(ON)}	V _{GS} =10V, I _D =6.4A		142	180	mΩ
DYNAMIC PARAMETERS							
Input Capacitance		C _{ISS}	V _{GS} =0V, V _{DS} =25V, f=1.0MHz		345	1300	pF
Output Capacitance		C _{OSS}			100		pF
Reverse Transfer Capacitance		C _{RSS}			20		pF
SWITCHING PARAMETERS							
Total Gate Charge		Q _G	V _{DS} =80V, V _{GS} =10V, I _D =10A		12	110	nC
Gate to Source Charge		Q _{GS}			2.5		nC
Gate to Drain Charge		Q _{GD}			5.1		nC
Turn-ON Delay Time		t _{D(ON)}	V _{DD} =30V, V _{GS} =10V, I _D =10A, R _G =25Ω		5		ns
Rise Time		t _R			55	120	ns
Turn-OFF Delay Time		t _{D(OFF)}			20		ns
Fall-Time		t _F			25	60	ns
SOURCE- DRAIN DIODE RATINGS AND CHARACTERISTICS							
Maximum Body-Diode Continuous Current		I _S				10	A
Maximum Body-Diode Pulsed Current		I _{SM}				40	A
Drain-Source Diode Forward Voltage		V _{SD}	I _S =10A, V _{GS} =0V			1.5	V

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