



UTT10N10

Preliminary

Power MOSFET

10A, 100V N-CHANNEL MOSFET

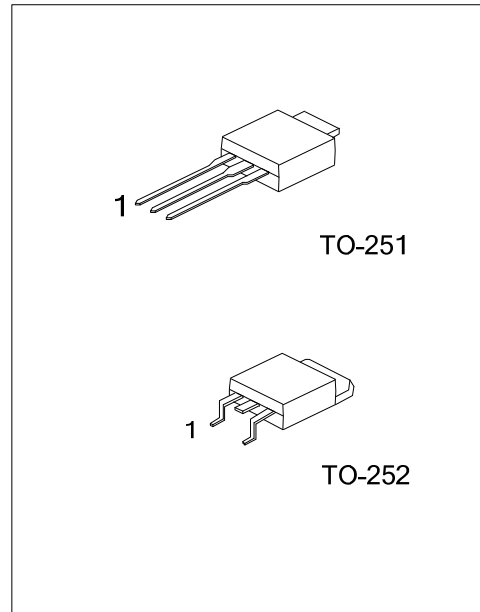
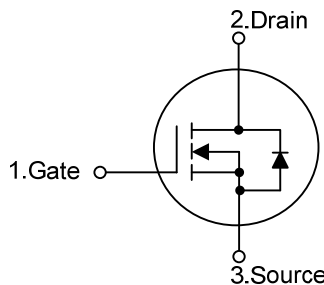
■ DESCRIPTION

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

- * $R_{DS(on)} < 180m\Omega @ V_{GS} = 10 V$
- * High Switching Speed

■ SYMBOL



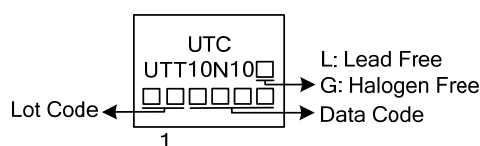
■ ORDERING INFORMATION

Ordering Number		Package	Pin Assignment			Packing
Lead Free	Halogen Free		1	2	3	
UTT10N10L-TM3-T	UTT10N10G-TM3-T	TO-251	G	D	S	Tube
UTT10N10L-TN3-R	UTT10N10G-TN3-R	TO-252	G	D	S	Tape Reel

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

<p>UTT10N10L-TM3-T</p> <p>(1) Packing Type (2) Package Type (3) Green Package</p>	<p>(1) T: Tube, R: Tape Reel (2) TM3: TO-251, TN3: TO-252 (3) L: Lead Free, G: Halogen Free and Lead Free</p>
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■ MARKING



■ 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	-25 ~ +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}	$I_D=250\mu A, V_{GS}=0V$	100			V
Drain-Source Leakage Current	I_{DSS}	$V_{DS}=100V, V_{GS}=0V$			1	μA
Gate-Source Leakage Current	Forward	I_{GSS}			+100	nA
	Reverse				-100	nA
ON CHARACTERISTICS						
Gate Threshold Voltage	$V_{GS(TH)}$	$V_{DS}=V_{GS}, I_D=250\mu A$	1.0		3.0	V
Static Drain-Source On-State Resistance	$R_{DS(ON)}$	$V_{GS}=10V, I_D=6.4A$		142	180	m Ω
DYNAMIC PARAMETERS						
Input Capacitance	C_{ISS}	$V_{GS}=0V, V_{DS}=25V, f=1.0MHz$		700	900	pF
Output Capacitance	C_{OSS}			50	65	pF
Reverse Transfer Capacitance	C_{RSS}			40	55	pF
SWITCHING PARAMETERS						
Turn-ON Delay Time	$t_{D(ON)}$	$V_{DD}=30V, V_{GS}=10V, I_D=0.5A, R_G=25\Omega$		30	50	ns
Rise Time	t_R			30	50	ns
Turn-OFF Delay Time	$t_{D(OFF)}$			290	350	ns
Fall-Time	t_F			50	80	ns
Total Gate Charge	Q_G	$V_{DS}=10V, V_{GS}=10V, I_D=2A$		90	110	nC
Gate to Source Charge	Q_{GS}			6		nC
Gate to Drain Charge	Q_{GD}			7		nC
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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