UNISONIC TECHNOLOGIES CO., LTD

UT3310 **Power MOSFET**

P-CHANNEL ENHANCEMENT MODE POWER MOSFET

DESCRIPTION

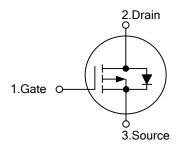
The UTC UT3310 is a P-channel enhancement mode Power MOSFET. The UTC UT3310 uses advanced technology to provide customers with fast switching, low on-resistance and cost-effectiveness.

The UTC UT3310 is generally applied in low voltage and battery power applications.

FEATURES

- * Gate Drive Capability: 2.5V
- * Simple Drive Requirement

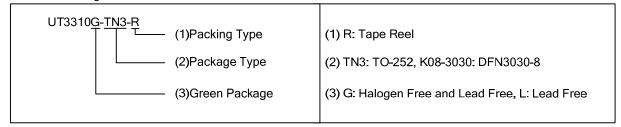




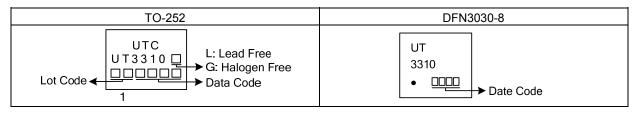
ORDERING INFORMATION

Ordering Number		Doolsons	Pin Assignment						Doolsing			
Lead Free	Halogen Free	Package	1	2	3	4	5	6	7	8	Packing	
UT3310L-TN3-R	UT3310G-TN3-R	TO-252	G	D	S	-	-	-	-	ı	Tape Reel	
UT3310L-K08-3030-R	UT3310G-K08-3030-R	DFN3030-8	S	S	S	G	D	D	D	D	Tape Reel	

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



MARKING



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TO-252

DFN3030-8

■ ABSOLUTE MAXIMUM RATINGS

PARAMETER		SYMBOL	RATINGS	UNIT
Drain to Source Voltage		$V_{ extsf{DSS}}$	-20	V
Gate to Source Voltage		V_{GSS}	±12	V
Continuous Drain Current (T _A =25°C, \	/ _{GS} =10V)	I_{D}	-10	Α
Pulsed Drain Current		I_{DM}	-24	Α
Total Power Dissipation (T _A =25°C)	TO-252	P _D	1.13	W
	DFN3030-8		3.2	W
Linear Derating Factor			0.01	W/°C
Junction Temperature		T_J	150	Ô
Ambient Operating Temperature		T_OPR	-55 ~ + 150	Ô
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	TO-252	0	110	°C/W
	DFN3030-8	θ_{JA}	39	°C/W
lunation to Coop	TO-252	0	5.0	°C/W
Junction to Case	DFN3030-8	$\theta_{ extsf{JC}}$	6	°C/W

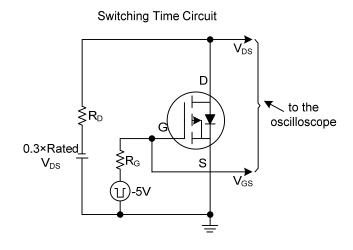
■ **ELECTRICAL CHARACTERISTICS** (T_J =25°C, unless otherwise specified)

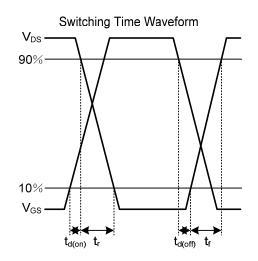
Description	2.2	0) (1 1 2 0 1								
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT			
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	OFF CHARACTERISTICS									
$\begin{array}{c} \text{Drain-Source Leakage Current} & l_{DSS} & V_{DS}=-20V, V_{GS}=0V & -1 & \mu A \\ \text{Drain-Source Leakage Current} & l_{GSS} & V_{DS}=0V, V_{GS}=\pm 12V & \pm 100 & nA \\ \textbf{DN CHARACTERISTICS} & & & & & & & & & & & & & & & & & & &$	Drain-Source Breakdown Voltage	BV _{DSS}	V _{GS} =0V, I _D =-250μA	-20			V			
Gate-Source Leakage Current I_{GSS} $V_{DS}=0V$, $V_{GS}=\pm12V$ ± 100 nAON CHARACTERISTICSGate Threshold Voltage $V_{GS(TH)}$ $V_{DS}=V_{GS}$, $I_{D}=-250\mu A$ -0.5 V Drain-Source On-State Resistance $R_{DS(ON)}$ $V_{GS}=-4.5V$, $I_{D}=-2.8A$ 150 $m\Omega$ DYNAMIC PARAMETERS $V_{DS}=-2.5V$, $I_{D}=-2.0A$ $V_{DS}=-2.5V$, $I_{D}=-2.0A$ $V_{DS}=-2.5V$, $I_{D}=-2.0A$ DUITURE Capacitance C_{ISS} $V_{DS}=-6V$, $V_{GS}=0V$, $I_{D}=-2.0A$ $V_{DS}=-2.5V$, $I_{D}=-2.0A$ DUITURE Capacitance C_{ISS} $V_{DS}=-6V$, $V_{GS}=0V$, $I_{D}=-2.0A$ I_{BO} DUITURE Capacitance $V_{DS}=-6V$,	Breakdown Voltage Temperature Coefficient	$\Delta BV_{DSS}/\Delta T_{J}$	Reference to 25°C, I _D =-1mA		-0.1		V/°C			
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	Drain-Source Leakage Current	I _{DSS}	V _{DS} =-20V,V _{GS} =0V			-1	μΑ			
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	Gate-Source Leakage Current	I_{GSS}	V _{DS} =0V ,V _{GS} =±12V			±100	nA			
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	ON CHARACTERISTICS									
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	Gate Threshold Voltage	$V_{GS(TH)}$	$V_{DS} = V_{GS}$, $I_D = -250 \mu A$	-0.5			>			
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	Drain Source On State Registance		V _{GS} =-4.5V, I _D =-2.8A			150	mΩ			
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	Diam-Source On-State Resistance		V _{GS} =-2.5V, I _D =-2.0A			250	mΩ			
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	DYNAMIC PARAMETERS									
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	Input Capacitance	C _{ISS}			300		рF			
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	Output Capacitance		V_{DS} =-6V, V_{GS} =0V,f =1.0MHz		180		рF			
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	Reverse Transfer Capacitance	C _{RSS}			60		рF			
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	SWITCHING PARAMETERS									
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	Total Gate Charge (Note2)	Q_{G}			6		nC			
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	Gate-Source Charge	Q_{GS}	V_{DS} =-6V, V_{GS} =-5V, I_{D} =-2.8A		1.5		nC			
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	Gate-Drain Charge	Q_GD			0.6		nC			
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	Turn-ON Delay Time (Note2)	t _{D(ON)}			25		ns			
Turn-OFF Fall Time t_F 60 ns SOURCE-DRAIN DIODE RATINGS AND CHARACTERISTICS Continuous Source Current (Body Diode) I_S $V_D=V_G=0V$, $V_S=-1.2V$ -10 A Pulsed Source Current (Body Diode) I_{SM} (Note1) -24 A	Turn-ON Rise Time	t _R	V_{DS} =-6V, V_{GS} =-5V, I_{D} =-1A		60		ns			
Turn-OFF Fall Time t_F 60 ns SOURCE-DRAIN DIODE RATINGS AND CHARACTERISTICS Continuous Source Current (Body Diode) I_S $V_D = V_G = 0V$, $V_S = -1.2V$ -10 A Pulsed Source Current (Body Diode) I_{SM} (Note1) -24 A	Turn-OFF Delay Time	t _{D(OFF)}	$R_G=6\Omega$, $R_D=6\Omega$		70		ns			
Continuous Source Current (Body Diode) I_S $V_D=V_G=0V$, $V_S=-1.2V$ -10 A Pulsed Source Current (Body Diode) I_{SM} (Note1) -24 A	Turn-OFF Fall Time				60		ns			
Pulsed Source Current (Body Diode) I _{SM} (Note1) -24 A	SOURCE-DRAIN DIODE RATINGS AND CHARACTERISTICS									
	Continuous Source Current (Body Diode)	Is	V _D =V _G =0V , V _S =-1.2V			-10	Α			
Drain-Source Diode Forward Voltage V_{SD} I_{S} =-10A, V_{GS} =0V (Note2) -1.2 V	Pulsed Source Current (Body Diode)	I _{SM}	(Note1)			-24	Α			
	Drain-Source Diode Forward Voltage	V _{SD}	I _S =-10A, V _{GS} =0V (Note2)			-1.2	V			

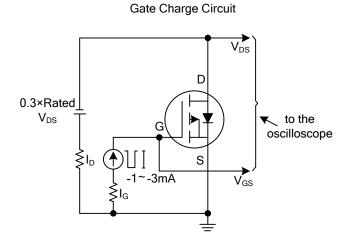
Notes:1. Pulse width limited by safe operating area.

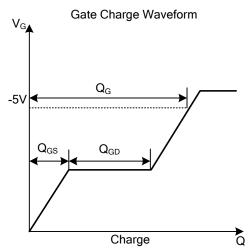
2. Pulse width ≤300us , duty cycle ≤2%.

■ TYPICAL CHARACTERISTICS



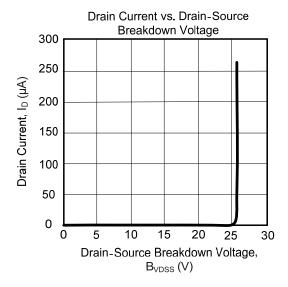


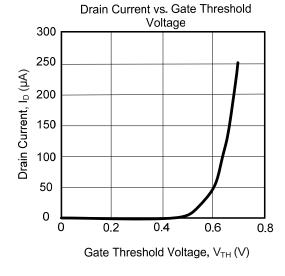


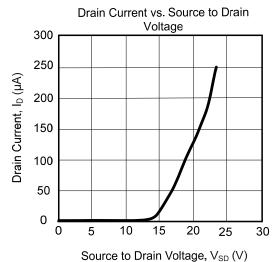


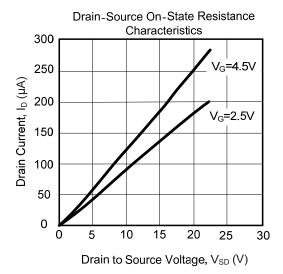
UT3310 Power MOSFET

■ TYPICAL CHARACTERISTICS









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