



UT2321

Power MOSFET

P-CHANNEL ENHANCEMENT MODE FIELD EFFECT TRANSISTOR

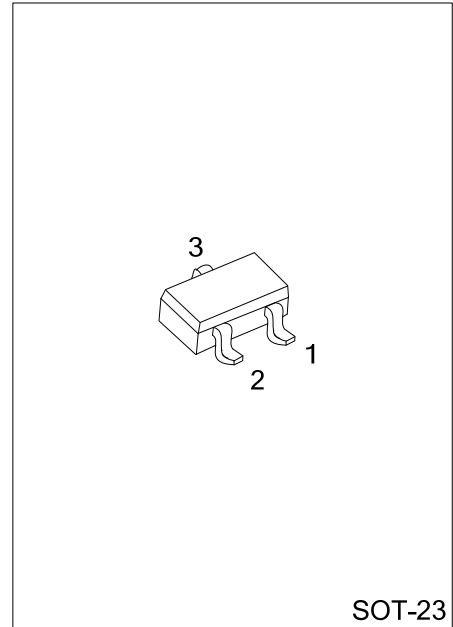
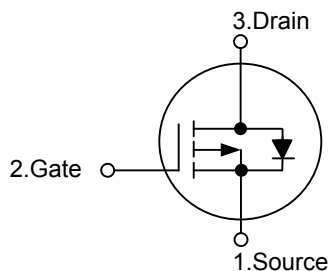
DESCRIPTION

The **UT2321** uses advanced trench technology to provide excellent $R_{DS(ON)}$, low gate charge and operation with low gate voltages. This device is suitable for use as a load switch or in PWM applications.

FEATURES

- * $R_{DS(ON)} < 55m\Omega$ @ $V_{GS} = -4.5V$
- * $R_{DS(ON)} < 80m\Omega$ @ $V_{GS} = -2.5V$
- * Low capacitance
- * Low gate charge
- * Fast switching capability
- * Avalanche energy specified

SYMBOL



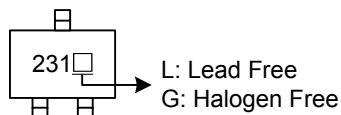
SOT-23

ORDERING INFORMATION

Ordering Number		Package	Pin Assignment			Packing
Lead Free	Halogen Free		1	2	3	
UT2321L-AE3-R	UT2321G-AE3-R	SOT-23	S	G	D	Tape Reel

UT2321L-AE3-R		(1) Packing Type	(1) R: Tape Reel
		(2) Package Type	(2) AE3: SOT-23
		(3) Lead Plating	(3) G: Halogen Free, L: Lead Free

MARKING



■ ABSOLUTE MAXIMUM RATINGS (Ta=25°C, unless otherwise specified)

PARAMETER	SYMBOL	RATINGS	UNIT
Drain-Source Voltage	V_{DS}	-20	V
Gate-Source Voltage	V_{GS}	± 12	V
Continuous Drain Current (Note 2)	I_D	-3.8	A
Pulsed Drain Current (Note 2)	I_{DM}	-15.2	A
Power Dissipation	P_D	1.25	W
Junction Temperature	T_J	+150	°C
Storage Temperature	T_{STG}	-55 ~ +150	°C

Note: 1. 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.

2. Pulse width limited by $T_{J(MAX)}$

■ THERMAL DATA

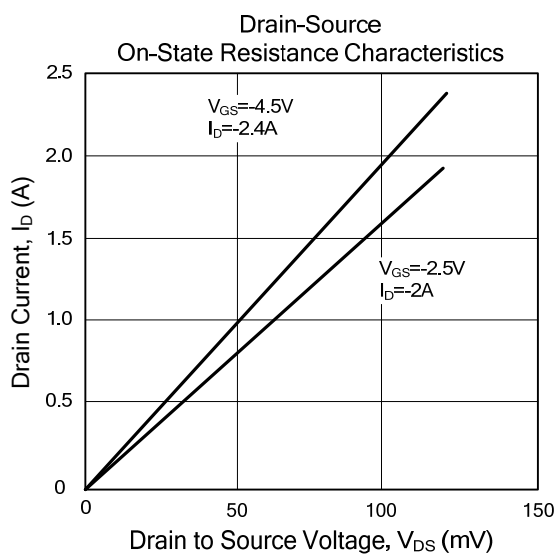
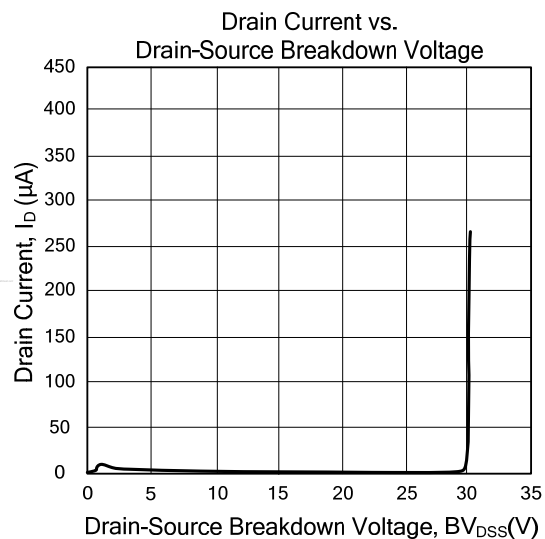
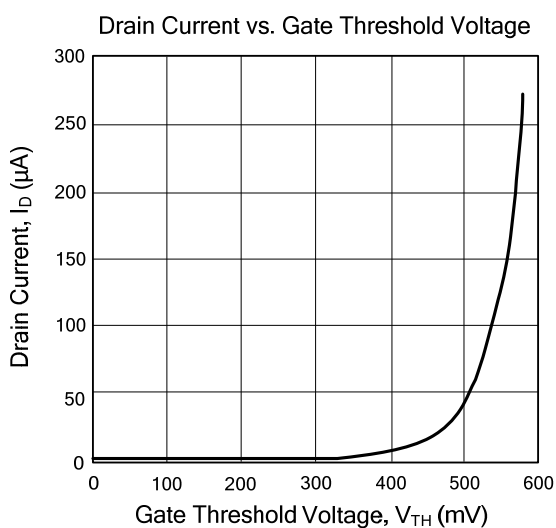
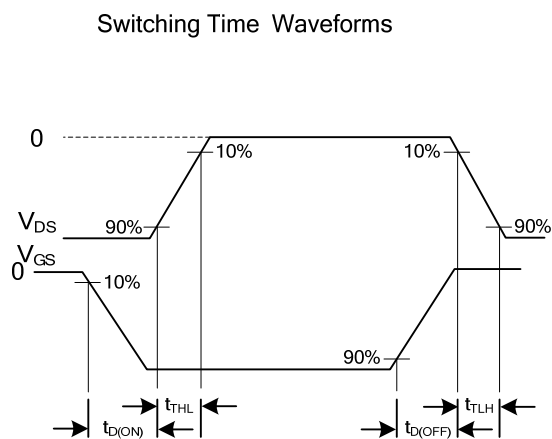
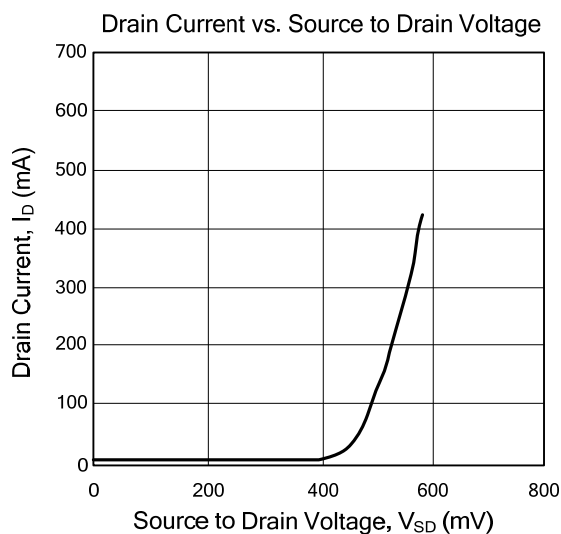
PARAMETER	SYMBOL	MIN	TYP	MAX	UNIT
Junction to Ambient	θ_{JA}			100	°C/W

■ ELECTRICAL CHARACTERISTICS ($T_J=25^\circ\text{C}$, unless otherwise specified)

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
OFF CHARACTERISTICS						
Drain-Source Breakdown Voltage	BV _{DSS}	V _{GS} =0V, I _D =-250μA	-20			V
Drain-Source Leakage Current	I _{DSS}	V _{DS} =-16V, V _{GS} =0V			-1	μA
Gate-Source Leakage Current	Forward	I _{GSS}	V _{GS} =12V, V _{DS} =0V		100	nA
	Reverse		V _{GS} =-12V, V _{DS} =0V		-100	nA
ON CHARACTERISTICS(Note)						
Gate-Threshold Voltage	V _{GS(TH)}	V _{DS} =V _{GS} , I _D =-250μA	-0.4		-1.0	V
Static Drain-Source On-Resistance	R _{DS(ON)}	V _{GS} =-4.5V, I _D =-2.4A		45	55	mΩ
		V _{GS} =-2.5V, I _D =-2.0A		65	80	mΩ
DYNAMIC PARAMETERS						
Input Capacitance	C _{ISS}	V _{DS} =-10 V, V _{GS} =0V, f=1.0MHz		1500		pF
Output Capacitance	C _{OSS}			270		pF
Reverse Transfer Capacitance	C _{RSS}			185		pF
SWITCHING PARAMETERS						
Total Gate Charge	Q _G	V _{DS} =-10V, V _{GS} =-4.5V, I _D =-2.4A		14.8	19	nC
Gate-Source Charge	Q _{GS}			2.8		nC
Gate-Drain Charge	Q _{GD}			4.4		nC
Turn-ON Delay Time	t _{D(ON)}	V _{DD} =-10V, I _D =-1A, V _{GS} =-4.5V, R _{GEN} =6 Ω		13	24	ns
Turn-ON Rise Time	t _R			8	24	ns
Turn-OFF Delay Time	t _{D(OFF)}			65	256	ns
Turn-OFF Fall-Time	t _F			29	72	ns
DRAIN-SOURCE DIODE CHARACTERISTICS AND MAXIMUM RATINGS						
Diode Forward Voltage(Note)	V _{SD}	V _{GS} =0V, I _S =-0.42A			-1.2	V
Maximum Body-Diode Continuous Current	I _S				-0.42	A

Note: Pulse Test: Pulse Width $\leq 300\mu s$, Duty Cycle $\leq 2\%$.

TYPICAL CHARACTERISTICS



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