



UT2311

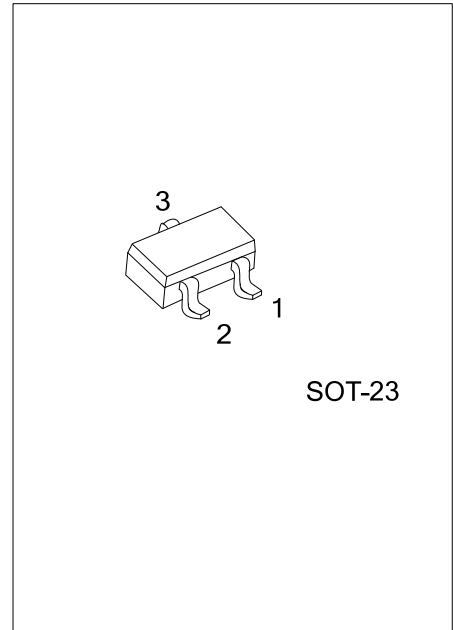
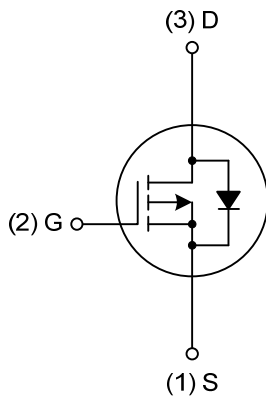
Power MOSFET

20V P-CHANNEL ENHANCEMENT MODE MOSFET

■ FEATURES

- * Extremely low on-resistance due to high density cell
- * Perfect thermal performance and electrical capability with advanced technology of trench process

■ SYMBOL



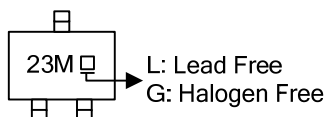
SOT-23

■ ORDERING INFORMATION

Ordering Number		Package	Pin Assignment			Packing
Lead Free	Halogen Free		1	2	3	
UT2311L-AE3-R	UT2311G-AE3-R	SOT-23	S	G	D	Tape Reel

UT2311G-AE3-R (1) Packing Type (2) Package Type (3) Halogen Free	(1) R: Tape Reel (2) AE3: SOT-23 (3) G: Halogen Free, L: Lead Free
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■ MARKING



■ ABSOLUTE MAXIMUM RATINGS ($T_A = 25^\circ\text{C}$, unless otherwise noted)

PARAMETER	SYMBOL	RATINGS	UNIT
Drain-Source Voltage	V_{DS}	-20	V
Gate-Source Voltage	V_{GS}	± 8	V
Continuous Drain Current	I_D	-4	A
Pulsed Drain Current	I_{DM}	-20	A
Power Dissipation ($T_A=25^\circ\text{C}$)	P_D	1.25	W
Junction Temperature	T_J	+150	$^\circ\text{C}$
Storage Temperature	T_{STG}	-55 ~ +150	$^\circ\text{C}$

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 (PCB mounted)	θ_{JA}	100	$^\circ\text{C/W}$

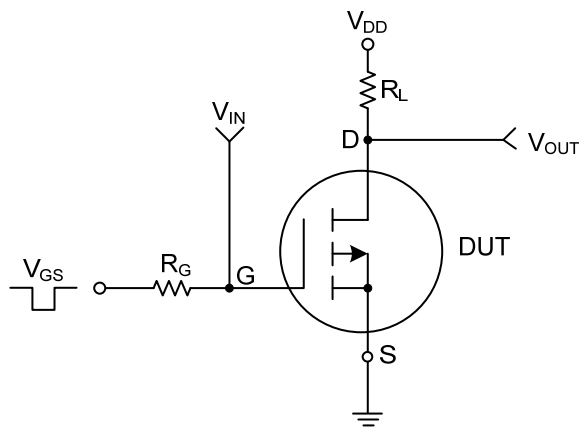
Note: Surface Mounted on FR4 board $t \leq 5\text{sec}$.

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

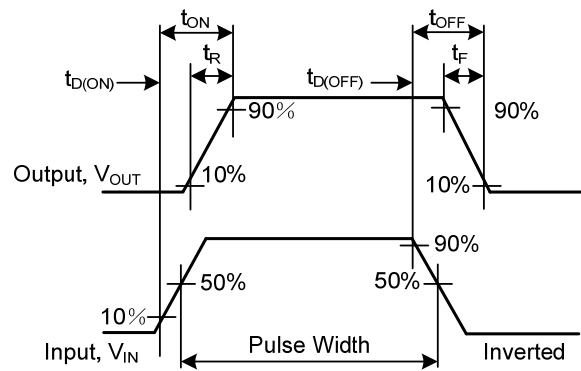
PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
OFF CHARACTERISTICS						
Drain-Source Breakdown Voltage	BV _{DSS}	V _{GS} =0V, I _D =-250μA	-20			V
Drain-Source Leakage Current	I _{DSS}	V _{DS} =-16V, V _{GS} =0V			-1.0	μA
Gate-Source Leakage Current	I _{GSS}	V _{GS} =±8V, V _{DS} =0V			±100	nA
ON CHARACTERISTICS						
Gate Threshold Voltage	V _{GS(TH)}	V _{DS} =V _{GS} , I _D =-250μA	-0.45			V
Static Drain-Source On-State Resistance	R _{DS(ON)}	V _{GS} =-4.5V, I _D =-4.0 A		45	55	mΩ
		V _{GS} =-2.5V, I _D =-2.5 A		75	85	mΩ
On-State Drain Current	I _{D(ON)}	V _{DS} ≥ -10V, V _{GS} =-4.5V	-6			A
DYNAMIC PARAMETERS ^b						
Input Capacitance	C _{ISS}	V _{DS} =-6V, V _{GS} =0 V, f=1.0MHz		970		pF
Output Capacitance	C _{OSS}			485		pF
Reverse Transfer Capacitance	C _{RSS}			160		pF
SWITCHING PARAMETERS ^b						
Turn-ON Delay Time	t _{D(ON)}	V _{DD} =-4V, V _{GEN} =-4.5V, I _D =-1A R _L =4Ω, R _G =6Ω		18		ns
Turn-ON Rise Time	t _R			45		ns
Turn-OFF Delay Time	t _{D(OFF)}			95		ns
Turn-OFF Fall-Time	t _F			65		ns
Total Gate Charge	Q _G	V _{GS} =-4.5V, V _{DS} =-6V, I _D =-4.0A		8.5	12	nC
Gate Source Charge	Q _{GS}			1.5		nC
Gate Drain Charge	Q _{GD}			2.1		nC
SOURCE- DRAIN DIODE RATINGS AND CHARACTERISTICS						
Drain-Source Diode Forward Voltage	V _{SD}	V _{GS} =0 V, I _S =-1.6A,		-0.8	-1.2	V
Maximum Continuous Drain-Source Diode Forward Current	I _S				-1.6	A

Note: Pulse test; pulse width $\leq 300\mu\text{s}$, duty cycle $\leq 2\%$.

■ TEST CIRCUITS AND WAVEFORMS

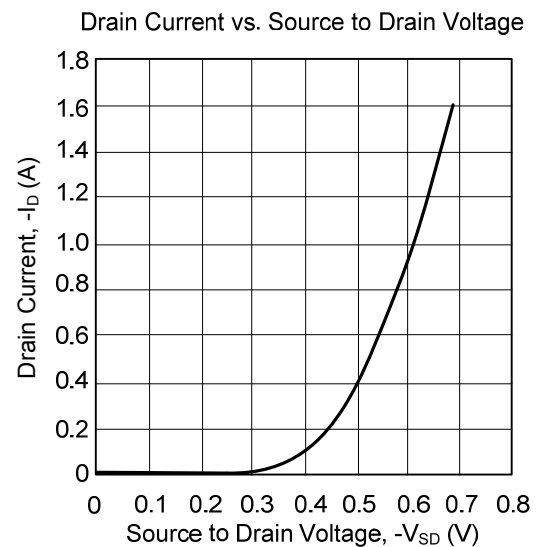
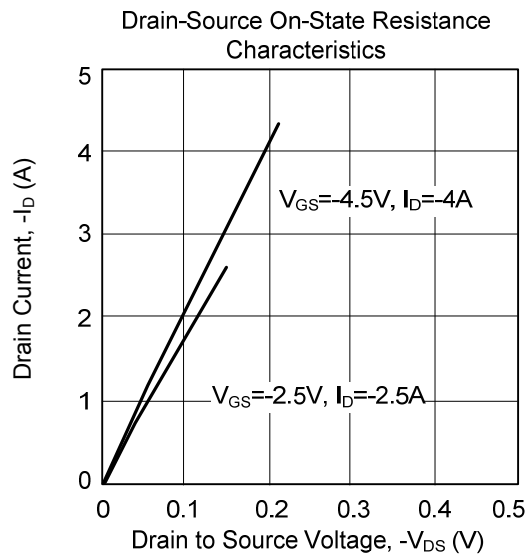
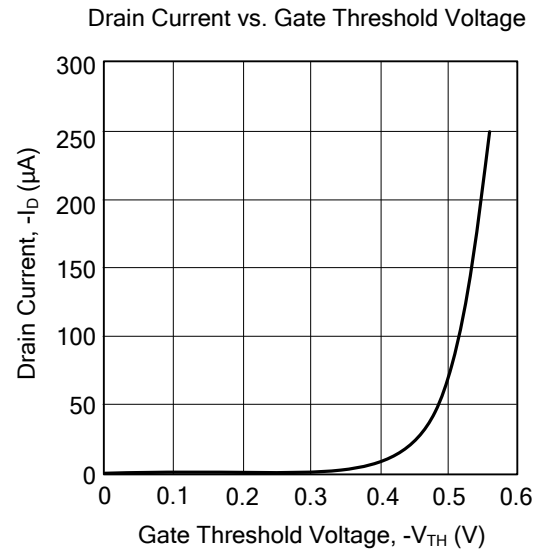
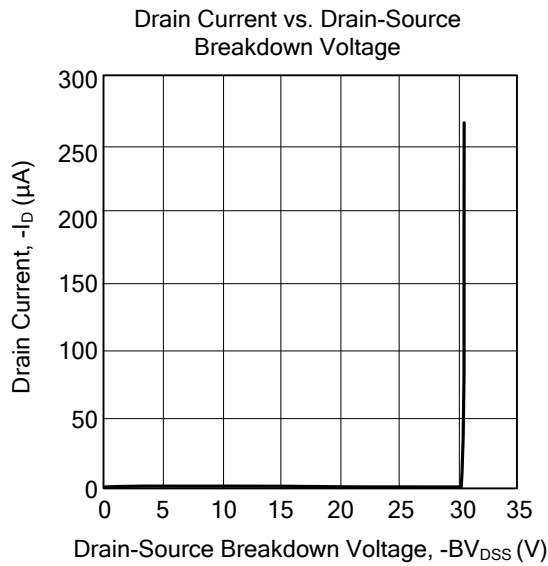


Switching Test Circuit



Switching Waveforms

TYPICAL CHARACTERISTICS



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