



UT2311

Preliminary

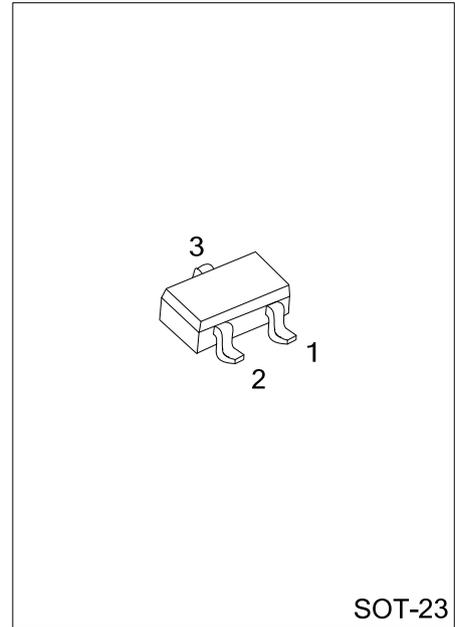
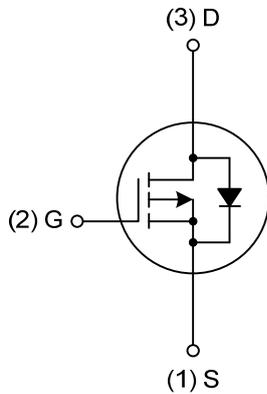
Power MOSFET

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
- * Halogen Free

■ SYMBOL

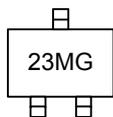


■ ORDERING INFORMATION

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

<p>UT2311G-AE3-R</p> <p>(1) Packing Type</p> <p>(2) Package Type</p> <p>(3) Halogen Free</p>	<p>(1) R: Tape Reel</p> <p>(2) AE3: SOT-23</p> <p>(3) G: Halogen Free</p>
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■ MARKING



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

PARAMETER	SYMBOL	RATINGS	UNIT
Drain-Source Voltage	V _{DSS}	-20	V
Gate-Source Voltage	V _{GSS}	±8	V
Continuous Drain Current	I _D	-4	A
Pulsed Drain Current	I _{DM}	-20	A
Power Dissipation (Ta=25°C)	P _D	1.25	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 (PCB mounted)	θ _{JA}	100	°C/W

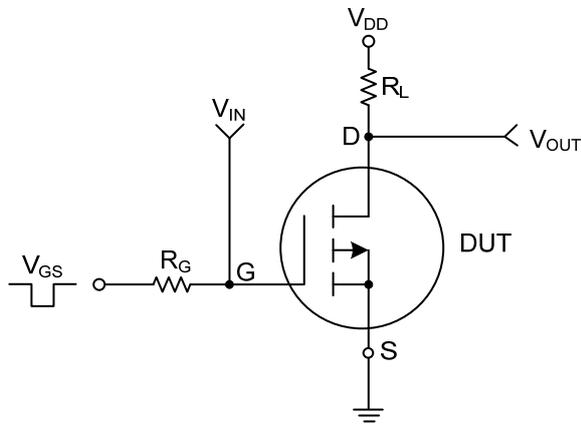
Note: Surface Mounted on FR4 board t ≤ 5sec.

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

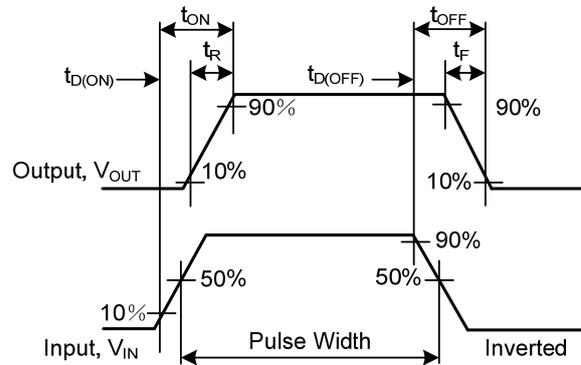
PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
OFF CHARACTERISTICS						
Drain-Source Breakdown Voltage	BV _{DSS}	V _{GS} = 0V, I _D = -250μA	-20			V
Drain-Source Leakage Current	I _{DSS}	V _{DS} = -16V, V _{GS} = 0V			-1.0	μA
Gate-Source Leakage Current	I _{GSS}	V _{GS} = ±8V, V _{DS} = 0V			±100	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 ≤ 300μs, duty cycle ≤ 2%.

■ TEST CIRCUITS AND WAVEFORMS



Switching Test Circuit



Switching Waveforms

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