



# UCF1923

**JFET**

## N-CHANNEL JUNCTION FIELD EFFECT TRANSISTOR

### DESCRIPTION

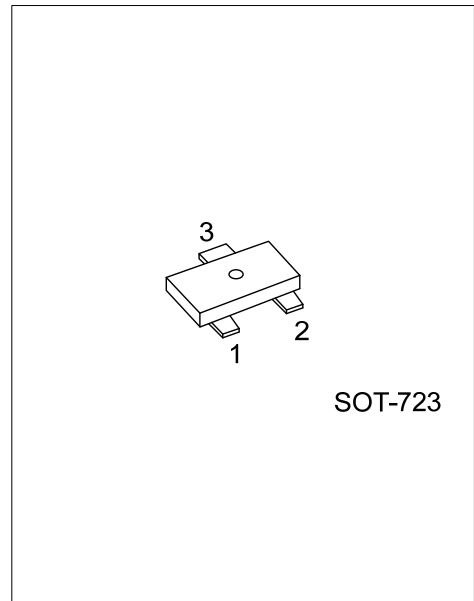
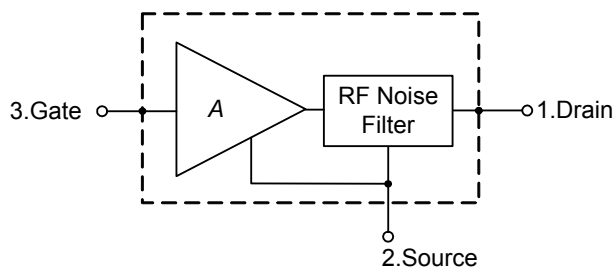
The UTC **UCF1923** is an N-channel junction FET, it uses UTC's advanced technology to provide the customers with high ESD voltage and low noise.

The UTC **UCF1923** is suitable for PADs, portable audio and MP3 players.

### FEATURES

- \* Very low noise
- \* High ESD voltage

### EQUIVALENT CIRCUIT



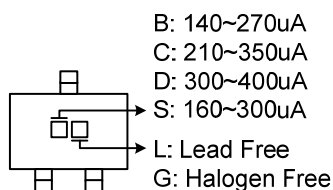
### ORDERING INFORMATION

Ordering Number		Package	Pin Assignment			Packing
Lead Free	Halogen Free		1	2	3	
UCF1923L-x-AQ3-R	UCF1923G-x-AQ3-R	SOT-723	D	S	G	Tape Reel

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

<p>UCF1923G-x-AQ3-R</p>	<p>(1) R: Tape Reel                  (2) AQ3: SOT-723                  (3) x: Refer to Classification of <math>I_{DSS}</math>                  (4) G: Halogen Free and Lead Free, L: Lead Free</p>
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### MARKING



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

PARAMETER	SYMBOL	RATINGS	UNIT
Gate to Drain Voltage	$V_{GDO}$	-6.5	V
Drain Current	$I_D$	10	mA
Gate Current	$I_G$	10	mA
Allowable Power Dissipation	$P_D$	100	mW
Junction Temperature	$T_J$	+125	$^\circ\text{C}$
Storage Temperature Range	$T_{STG}$	-55 ~ +125	$^\circ\text{C}$

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.

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

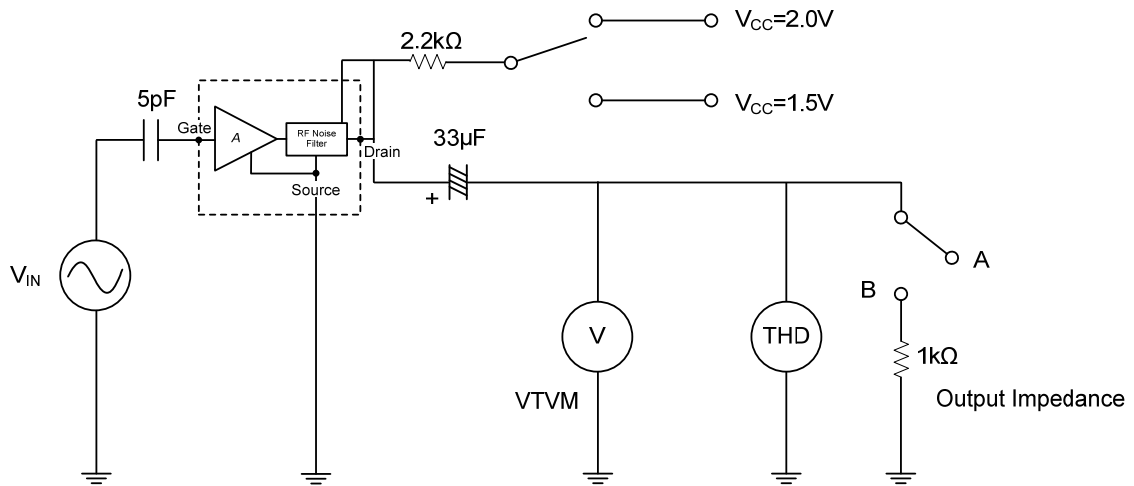
PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
<b>OFF CHARACTERISTICS</b>						
Gate to Drain Breakdown Voltage	$V_{(BR)GDO}$	$I_G=-100\mu\text{A}$	-6.5			V
Drain Current	$I_{DSS}$	$V_{DS}=2\text{V}, V_{GS}=0\text{V}$	140		400	$\mu\text{A}$
<b>ON CHARACTERISTICS</b>						
Gate Off Voltage	$V_{GS(OFF)}$	$V_{DS}=2\text{V}, I_D=1\mu\text{A}, I_{DSS}=250\mu\text{A}$	-0.2		-1.5	V
Forward Transfer Admittance	$ Y_{fs} $	$V_{DS}=2\text{V}, V_{GS}=0\text{V}, I_{DSS}=250\mu\text{A}$	0.4			mS
<b>DYNAMIC PARAMETERS</b>						
Input Capacitance	$C_{ISS}$	$V_{DS}=2\text{V}, V_{GS}=0\text{V}, f=1\text{MHz}$		14.7		pF
Reverse Transfer Capacitance	$C_{RSS}$			8.3		pF
Voltage Gain	$G_V$	$V_{DD}=2\text{V}, R_L=2.2\text{k}\Omega, C_g=5\text{pF}, f=1\text{kHz}, V_{IN}=10\text{mV}, I_{DSS}=100\mu\text{A}$		3.4		dB
Delta Voltage Gain	$\Delta G_V(\text{V})$	$V_{DD}=2\text{V}\sim 1.5\text{V}, R_L=2.2\text{k}\Omega, C_g=5\text{pF}, f=1\text{kHz}, V_{IN}=10\text{mV}$		0.7		dB
Frequency Characteristics	$\Delta G_V(\text{f})$	$V_{DD}=2\text{V}, R_L=2.2\text{k}\Omega, C_g=5\text{pF}, f=1\text{kHz}\sim 110\text{Hz}, V_{IN}=10\text{mV}$		-0.2		dB
Output Impedance	$Z_O$	$f=1\text{kHz}$			2200	$\Omega$
Output Noise Voltage	$V_{NO}$	$V_{DD}=3\text{V}, C_g=5\text{pF}, \text{A-Curve Filter}, R_L=2.2\text{k}\Omega, I_{DSS}=250\mu\text{A}$			-104	dB
Total Harmonic Distortion	THD	$V_{DD}=2\text{V}, R_L=2.2\text{k}\Omega, C_g=5\text{pF}, f=1\text{kHz}, V_{IN}=30\text{mV}, I_{DSS}=250\mu\text{A}$		1.0		%

■ CLASSIFICATION OF  $I_{DSS}$

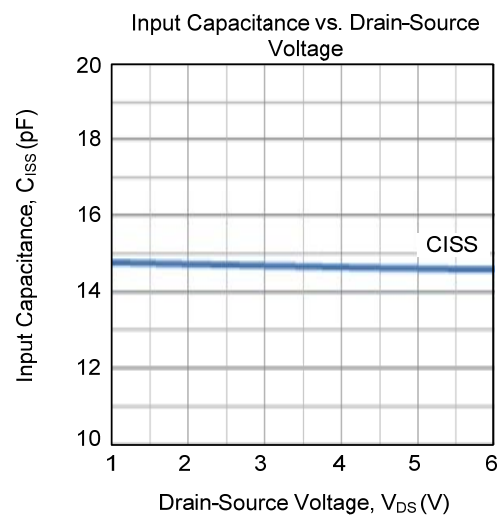
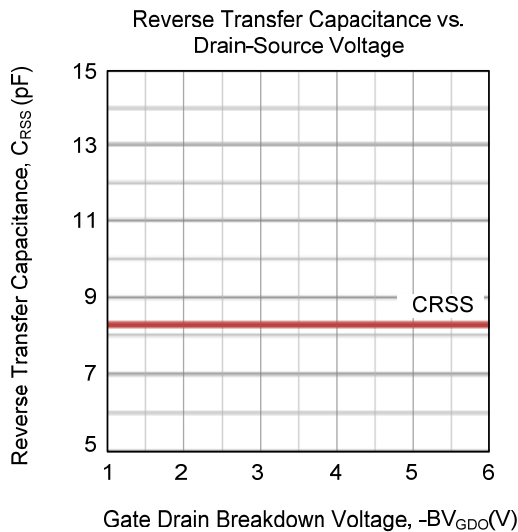
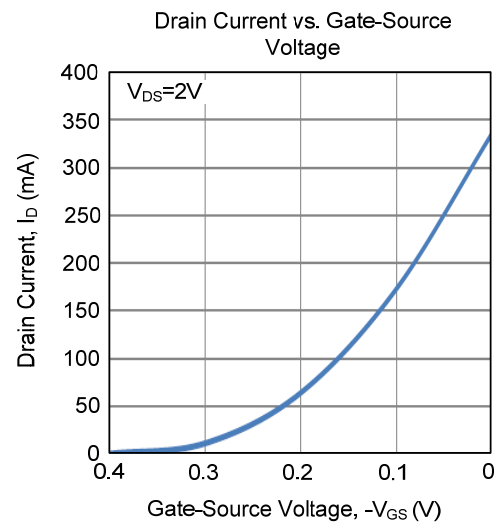
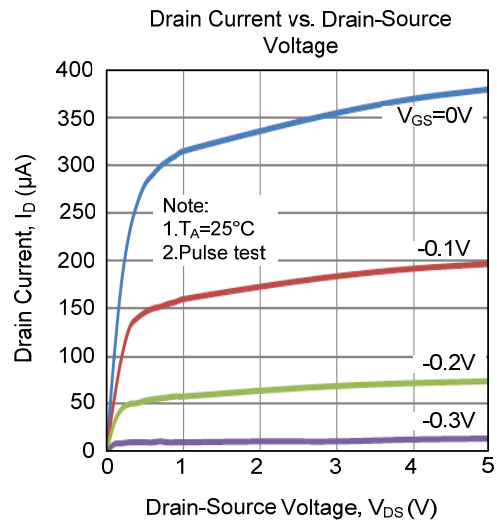
RANK	B	C	D	S
$I_{DSS} (\mu\text{A})$	140 ~ 270	210 ~ 350	300 ~ 400	160 ~ 300

## ■ TEST CIRCUITS

- Voltage Gain
- Frequency Characteristics
- Distortion
- Reduced Voltage Characteristics
- Output Noise Voltage



■ TYPICAL CHARACTERISTICS



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