



2SK209

JFET

FIELD EFFECT TRANSISTOR SILICON N-CHANNEL JUNCTION TYPE

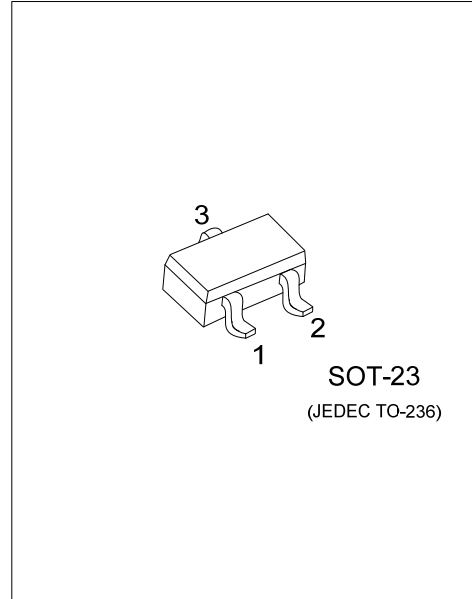
DESCRIPTION

The UTC **2SK209** is an N-channel junction silicon FET, it uses UTC's advanced technology to provide the customers with low I_{GSS} and low C_{RSS} .

The UTC **2SK209** is suitable for audio frequency low noise amplifier, impedance conversion, infrared sensor applications.

FEATURES

- * High breakdown voltage: $V_{GDS} = -50V$
- * High input impedance: $I_{GSS} = -1nA$ (max) at $V_{GS} = -30V$



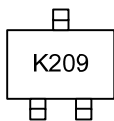
ORDERING INFORMATION

Ordering Number		Package	Pin Assignment			Packing
Lead Free	Halogen Free		1	2	3	
2SK209L-xx-AE3-R	2SK209G-xx-AE3-R	SOT-23	S	D	G	Tape Reel

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

<p>2SK209G-xx-AE3-R</p> <ul style="list-style-type: none"> (1) Packing Type (2) Package Type (3) Rank (4) Green Package 	<ul style="list-style-type: none"> (1) R: Tape Reel (2) AE3: SOT-23 (3) xx: refer to Classification of I_{DSS} (4) G: Halogen Free and Lead Free, L: Lead Free
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MARKING



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

PARAMETER	SYMBOL	RATINGS	UNIT
Gate-Drain Voltage	V_{GDS}	-50	V
Gate Current	I_G	10	mA
Power Dissipation	P_D	150	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.

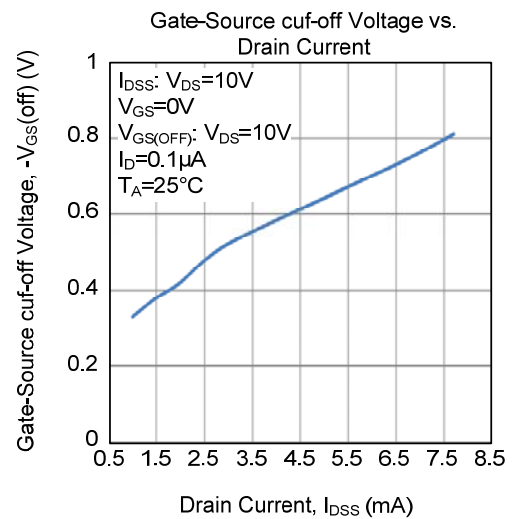
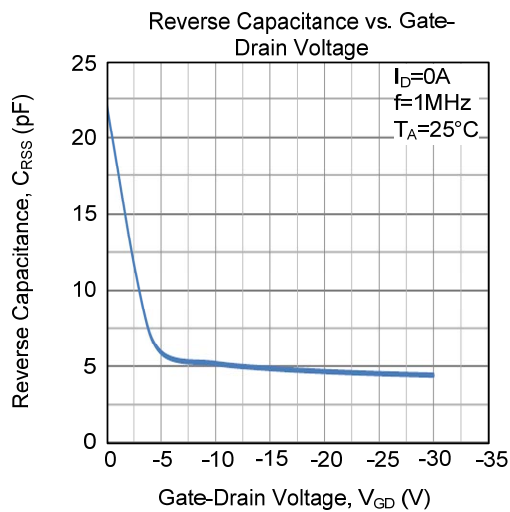
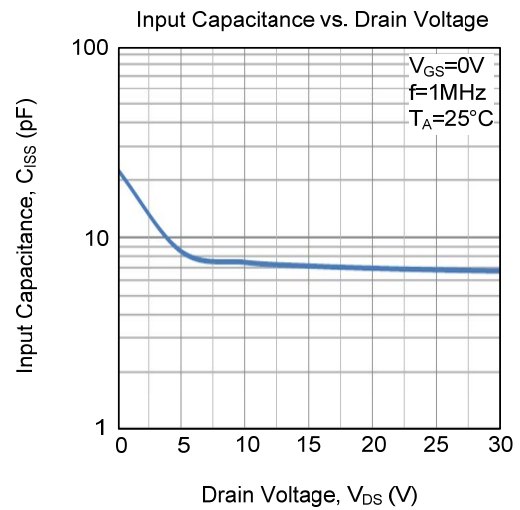
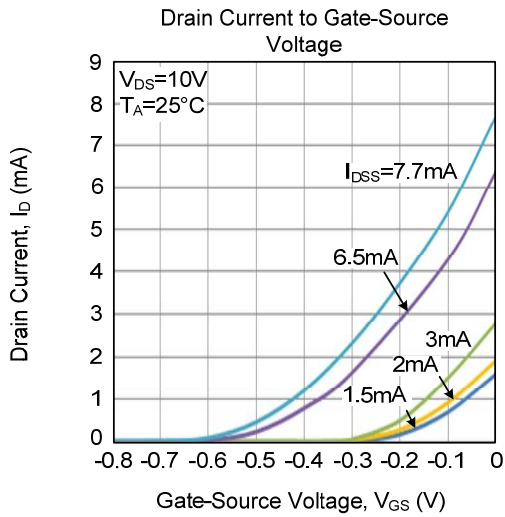
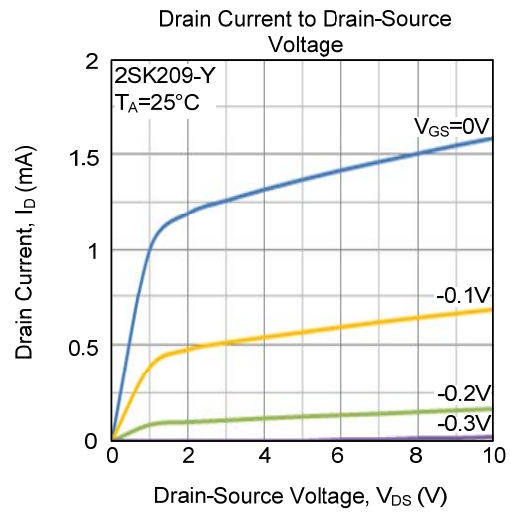
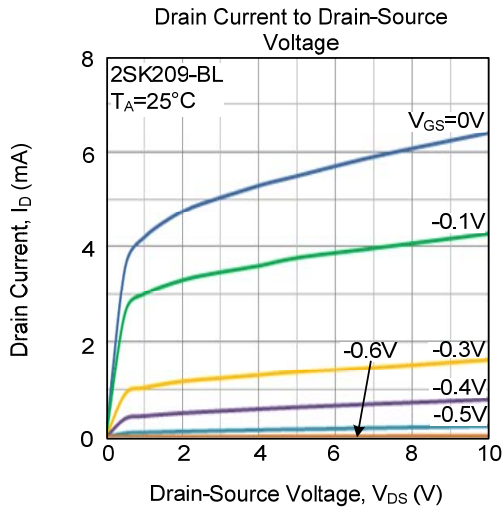
■ ELECTRICAL CHARACTERISTICS ($T_C=25^\circ\text{C}$, unless otherwise specified)

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
OFF CHARACTERISTICS						
Gate Cut-off Current	I_{GSS}	$V_{GS}=-30\text{V}, V_{DS}=0\text{V}$			-1.0	nA
Gate-Drain Breakdown Voltage	$V_{(BR)GDS}$	$I_G=-100\mu\text{A}, V_{DS}=0\text{V}$	-50			V
Drain-Source Leakage Current	I_{DSS}	$V_{DS}=10\text{V}, V_{GS}=0\text{V}$	1.2		14	mA
Forward Transfer Admittance	$ y_{fs} $	$V_{GS}=0\text{V}, V_{DS}=10\text{V}, f=1\text{kHz}$	4.0			mS
ON CHARACTERISTICS						
Cutoff Voltage	$V_{GS(OFF)}$	$V_{DS}=10\text{V}, I_D=0.1\mu\text{A}$	-0.2		-1.5	V
DYNAMIC PARAMETERS						
Input Capacitance	C_{ISS}	$V_{DS}=10\text{V}, V_{GS}=0\text{V}, f=1\text{MHz}$		13		pF
Reverse Transfer Capacitance	C_{RSS}	$V_{DG}=10\text{V}, I_D=0\text{A}, f=1\text{MHz}$		3		pF
Noise Figure	NF	$V_{DS}=10\text{V}, R_G=1\text{k}\Omega, I_D=0.5\text{A}, f=10\text{Hz}$		6		dB
		$V_{DS}=10\text{V}, R_G=1\text{k}\Omega, I_D=0.5\text{A}, f=1\text{kHz}$		1		dB

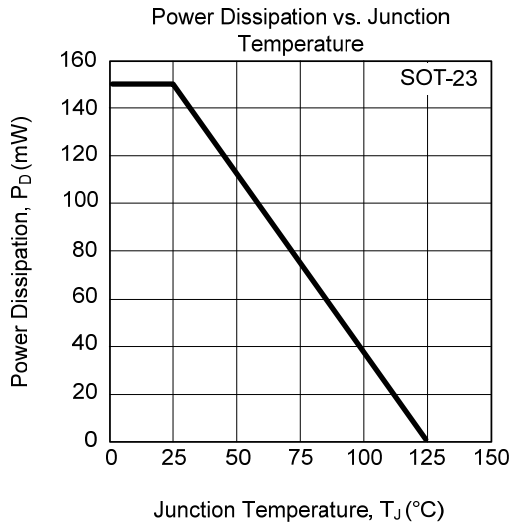
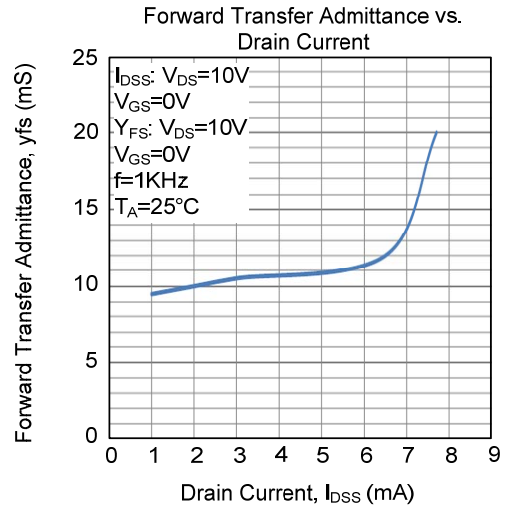
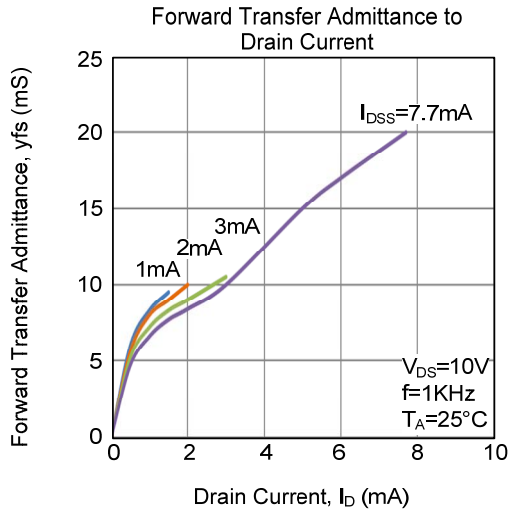
■ CLASSIFICATION OF I_{DSS}

RANK	Y	GR	BL
RANGE	1.2 ~ 3.0	2.6 ~ 6.5	6.0 ~ 14

TYPICAL CHARACTERISTICS



■ TYPICAL CHARACTERISTICS



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