



K4059

Preliminary

N-CHANNEL JFET

**FIELD EFFECT TRANSISTOR
SILICON N CHANNEL
JUNCTION TYPE**

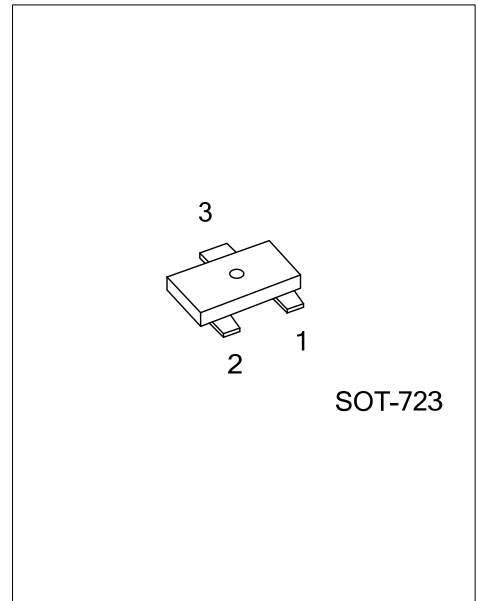
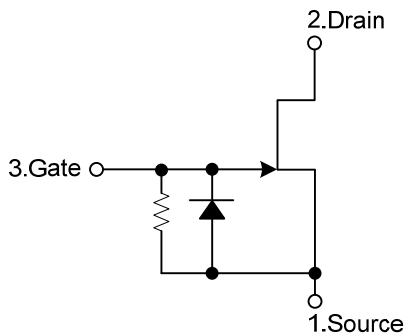
■ DESCRIPTION

The UTC **K4059** is an N-channel JFET, it uses UTC's advanced technology to provide customers with low input capacitance and low forward transfer admittance.

■ FEATURES

- * Low forward transfer admittance
- * Low input capacitance

■ EQUIVALENT CIRCUIT



■ ORDERING INFORMATION

Ordering Number		Package	Pin Assignment			Packing
Lead Free	Halogen Free		1	2	3	
K4059L-x-AQ3-R	K4059G-x-AQ3-R	SOT-723	S	D	G	Tape Reel

<p>K4059L-x-AQ3-R</p>	(1)Packing Type	(1) R: Tape Reel
	(2)Package Type	(2) AQ3: SOT-723
	(3)Rank	(3) x: refer to CLASSIFICATION OF I_{BSS}
	(4)Lead Free	(4) L: Lead Free, G: Halogen Free

■ ABSOLUTE MAXIMUM RATINGS (T_A=25°C)

PARAMETER	SYMBOL	RATINGS	UNIT
Gate-Drain Voltage	V _{GDO}	-20	V
Gate-Current	I _G	10	mA
Drain Power Dissipation (T _A =25°C)	P _D	100	mW
Junction Temperature	T _J	125	°C
Storage Temperature Range	T _{STG}	-55~125	°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.

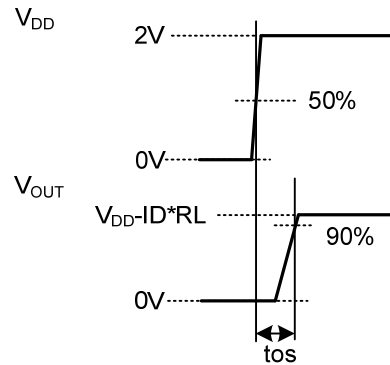
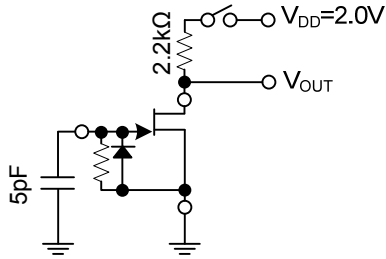
■ ELECTRICAL CHARACTERISTICS (T_A=25°C)

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT	
Drain Current	I _{DSS}	V _{GS} =0, V _{DS} =2V	K4059-A	140	240	μA	
			K4059-B	210	350	μA	
			K4059-C	320	500	μA	
Drain Current	I _D	V _{DD} =2V, R _L =2.2kΩ, C _g =5pF	K4059-A	125	260	μA	
			K4059-B	190	370	μA	
			K4059-C	290	500	μA	
Gate-Drain Voltage	V _{(BR)GDO}	I _G =-10μA	-20			V	
Gate-Source Cut-Off Voltage	V _{GS(OFF)}	V _{DS} =2V, I _D =1μA	-0.1		-1.0	V	
Forward Transfer Admittance	Y _{fs}	V _{DS} =2V, V _{GS} =0V	1.35	1.85		mS	
Input Capacitance	C _{ISS}	V _{DS} =2V, V _{GS} =0, f=1MHz		4.0		pF	
Voltage Gain	G _V	V _{DD} =2V, R _L =2.2kΩ, C _g =5pF, f=1kHz, V _{IN} =100mV	K4059-A	-1.2	+0.9	dB	
			K4059-B	-0.2	+1.4	dB	
			K4059-C	+0.5	+1.8	dB	
Delta Voltage Gain	ΔG _{V(f)}	V _{DD} =2V, R _L =2.2kΩ, C _g =5pF, f=1kHz~100Hz, V _{IN} =100mV		0	-1	dB	
Delta Voltage Gain	ΔG _{V(V)}	V _{DD} =2V~1.5V, R _L =2.2kΩ, C _g =5pF, f=1kHz, V _{IN} =100mV	K4059-A		-0.6	-1.1	dB
			K4059-B		-0.8	-1.7	dB
			K4059-C		-1.4	-3.2	dB
Noise Voltage	V _N	V _{DD} =2V, R _L =1kΩ, C _g =10pF, G _V =80dB, A-Curve Filter	K4059-A		33	75	mV
			K4059-B		38	80	mV
			K4059-C		42	90	mV
Total Harmonic Distortion	THD	V _{DD} =2V, R _L =2.2kΩ, C _g =5pF, f=1kHz, V _{IN} =50mV	K4059-A		1.3		%
			K4059-B		0.6		%
			K4059-C		0.1		%
Time Output Stability	t _{OS}	V _{DD} =2V, R _L =2.2kΩ, C _g =5pF		100	200	ms	

■ CLASSIFICATION OF I_{DSS}

RANK	A	B	C
RANGE	140-240	210-350	320-500

■ TEST CIRCUIT



UTC assumes no responsibility for equipment failures that result from using products at values that exceed, even momentarily, rated values (such as maximum ratings, operating condition ranges, or other parameters) listed in products specifications of any and all UTC products described or contained herein. UTC products are not designed for use in life support appliances, devices or systems where malfunction of these products can be reasonably expected to result in personal injury. Reproduction in whole or in part is prohibited without the prior written consent of the copyright owner. The information presented in this document does not form part of any quotation or contract, is believed to be accurate and reliable and may be changed without notice.