



K4059

Preliminary

N-CHANNEL JFET

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

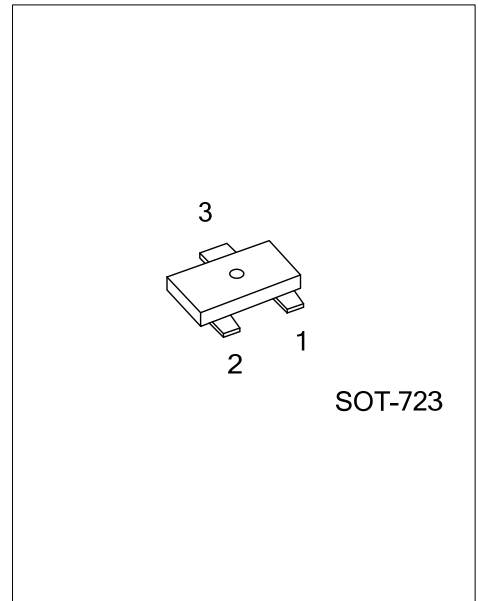
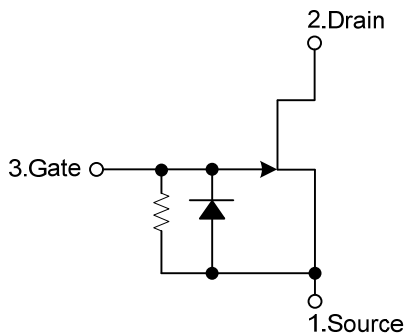
■ DESCRIPTION

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.

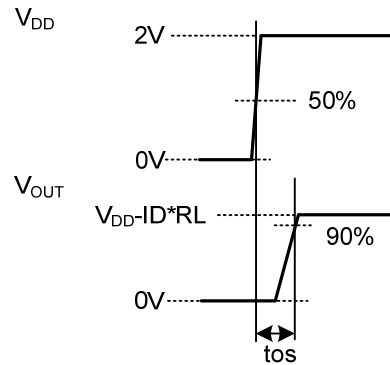
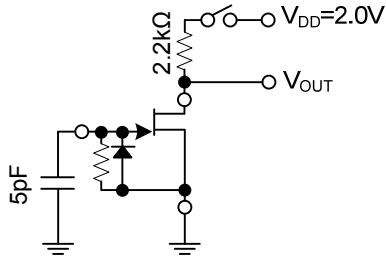
■ ELECTRICAL CHARACTERISTICS (T_A=25°C)

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



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