Ordering number:EN4839A

N-Channel Junction Silicon FET

2SK2394

Low-Noise HF Amplifier Applications

Applications

· AM tuner RF amplifier.
· Low-noise amplifier.

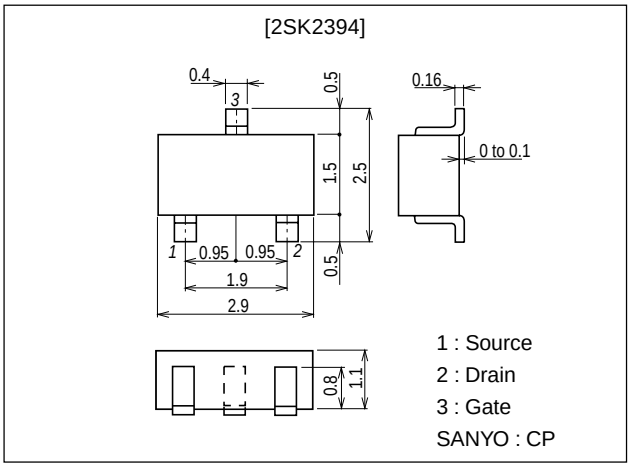
Features

· Large $|y_{fs}|$.
· Small Ciss.
· Small-sized package permitting 2SK2394-applied sets to be made small slim.
· Ultralow noise figure.

Package Dimensions

unit:mm

2050A



Specifications

Absolute Maximum Ratings at Ta = 25˚C

Parameter	Symbol	Conditions	Ratings	Unit
Drain-to-Source Voltage	V_{DSX}		15	V
Gate-to-Drain Voltage	V_{GDS}		–15	V
Gate Current	I_G		10	mA
Drain Current	I_D		50	mA
Allowable Power Dissipation	P_D		200	mW
Junction Temperature	Tj		150	˚C
Storage Temperature	Tstg		–55 to +150	˚C

Electrical Characteristics at Ta = 25˚C

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Gate-to-Drain Breakdown Voltage	$V_{(BR)GDS}$	I_G=–10μA, V_{DS}=0	–15			V
Gate Cutoff Current	I_{GSS}	V_{GS}=–10V, V_{DS}=0			–1.0	nA
Cutoff Voltage	$V_{GS(off)}$	V_{DS}=5V, I_D=100μA	–0.3	–0.7	–1.5	V
Drain Current	I_{DSS}	V_{DS}=5V, V_{GS}=0	6.0*		32.0*	mA
Forward Transfer Admittance	$\|y_{fs}\|$	V_{DS}=5V, V_{GS}=0, f=1kHz	20	38		mS
Input Capacitance	Ciss	V_{DS}=5V, V_{GS}=0, f=1MHz		10.0		pF
Reverse Transfer Capacitance	Crss	V_{DS}=5V, V_{GS}=0, f=1MHz		2.9		pF
Noise Figure	NF	V_{DS}=5V, Rg=1kΩ, I_D=1mA, f=1kHz		1.0		dB

* : The 2SK2394 is classified by I_{DSS} as follows : (unit : mA)

6.0	5	12.0	10.0	6	20.0	16.0	7	32.0

Marking : YJ
I_{DSS} rank : 5, 6, 7

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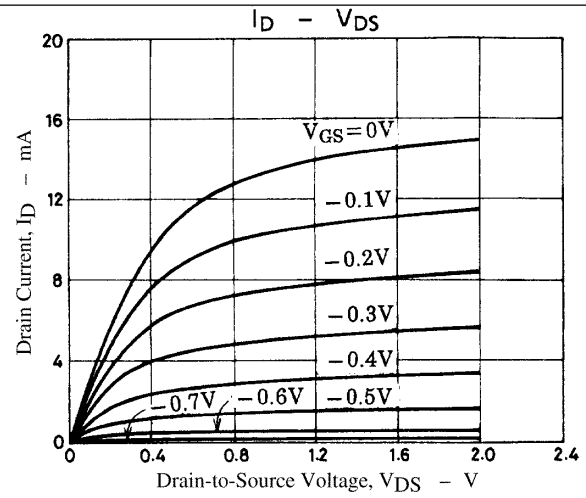
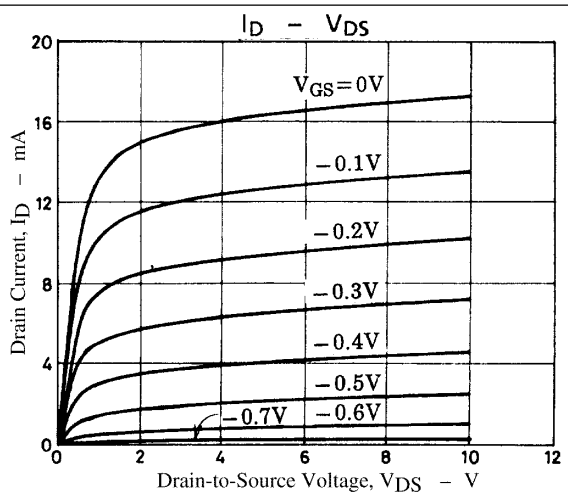
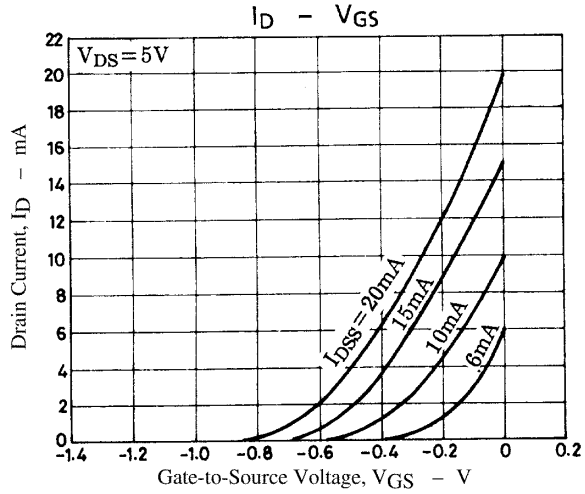
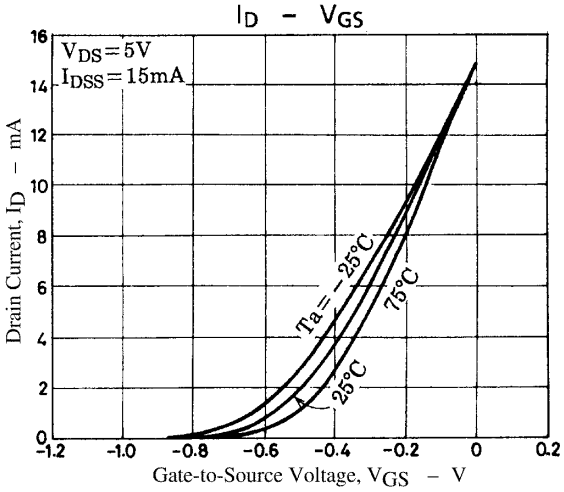
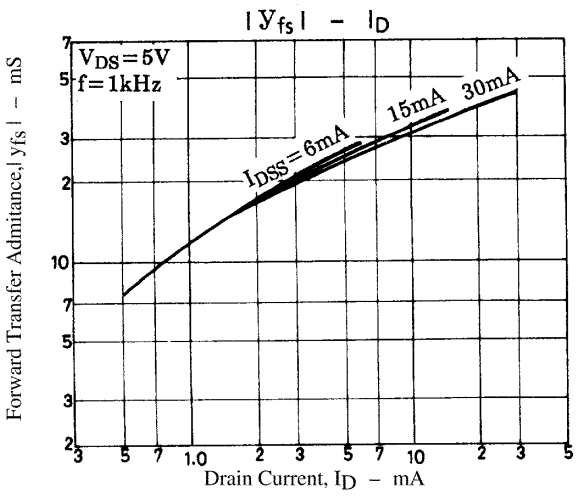
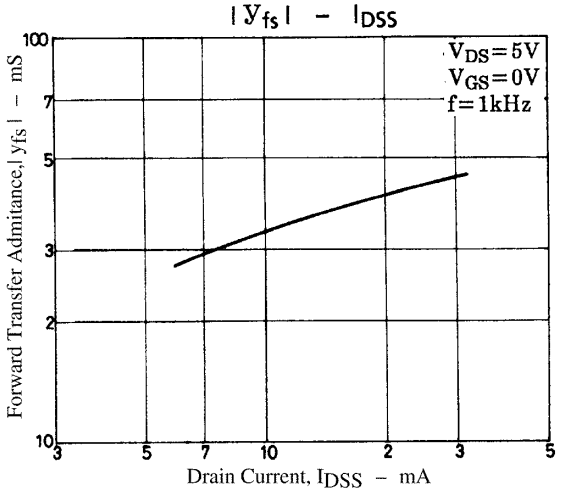

I_D – V_{DS}
V_{GS}=0V
–0.1V
–0.2V
–0.3V
–0.4V
–0.5V
–0.6V
–0.7V
Drain Current, I_D – mA
Drain-to-Source Voltage, V_{DS} – V

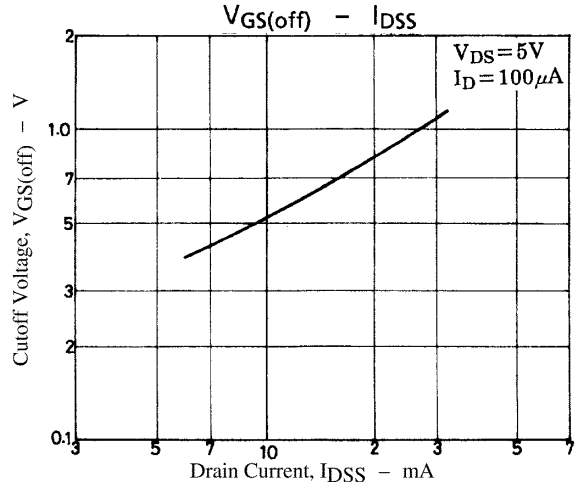

I_D – V_{DS}
V_{GS}=0V
–0.1V
–0.2V
–0.3V
–0.4V
–0.5V
–0.6V
–0.7V
Drain Current, I_D – mA
Drain-to-Source Voltage, V_{DS} – V

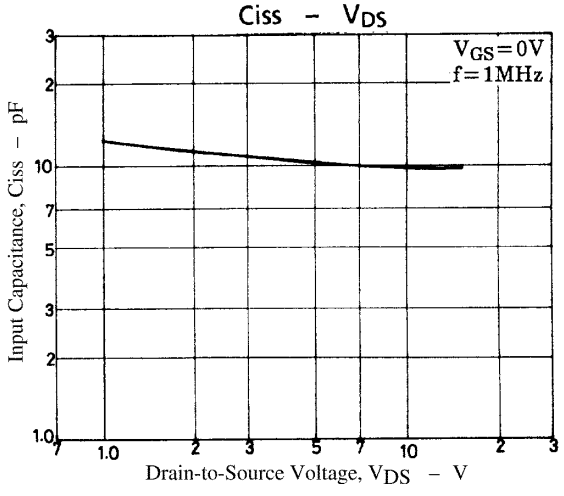

I_D – V_{GS}
V_{DS}=5V
I_{DSS}=20mA
15mA
10mA
6mA
Drain Current, I_D – mA
Gate-to-Source Voltage, V_{GS} – V


I_D – V_{GS}
V_{DS}=5V
I_{DSS}=15mA
Ta=–25°C
75°C
25°C
Drain Current, I_D – mA
Gate-to-Source Voltage, V_{GS} – V


$|y_{fs}|$ – I_D
V_{DS}=5V
f=1kHz
I_{DSS}=6mA
15mA
30mA
Forward Transfer Admitance, $|y_{fs}|$ – mS
Drain Current, I_D – mA


$|y_{fs}|$ – I_{DSS}
V_{DS}=5V
V_{GS}=0V
f=1kHz
Forward Transfer Admitance, $|y_{fs}|$ – mS
Drain Current, I_{DSS} – mA


$V_{GS(off)}$ – I_{DSS}
V_{DS}=5V
I_D=100μA
Cutoff Voltage, $V_{GS(off)}$ – V
Drain Current, I_{DSS} – mA


Ciss – V_{DS}
V_{GS}=0V
f=1MHz
Input Capacitance, Ciss – pF
Drain-to-Source Voltage, V_{DS} – V