N-Channel JFET
15 V, 10 to 20 mA, 38 mS, CP

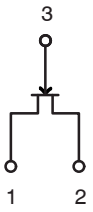
2SK2394

SC−59−3
318BJ

Features
- Large |yfs|
- Small C_{iss}
- Small−Sized Package Permitting 2SK2394−Applied Sets to be Made Small Slim
- Ultralow Noise Figure
- This is a Pb−Free Device

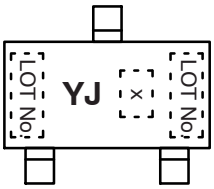
Applications
- AM Tuner RF Amplifier
- Low−Noise Amplifier

ELECTRICAL CONNECTION



1: Source
2: Drain
3: Gate

MARKING DIAGRAM



YJx = Specific Device Code
x = 6

ABSOLUTE MAXIMUM RATINGS at T_A = 25°C

Symbol	Parameter	Value	Unit
V_{DSX}	Drain−to−Source Voltage	15	V
V_{GDS}	Gate−to−Drain Voltage	−15	V
I_G	Gate Current	10	mA
I_D	Drain Current	50	mA
P_D	Allowable Power Dissipation	200	mW
T_J	Junction Temperature	150	°C
T_{stg}	Storage Temperature	−55 to +150	°C

Stresses exceeding those listed in the Maximum Ratings table may damage the device. If any of these limits are exceeded, device functionality should not be assumed, damage may occur and reliability may be affected.

ORDERING INFORMATION

Device	Package	Shipping†
2SK2394−6−TB−E	SC−59−3 (Pb−Free)	3000 / Tape & Reel

†For information on tape and reel specifications, including part orientation and tape sizes, please refer to our Tape and Reel Packaging Specification Brochure, BRD8011/D.

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ELECTRICAL CHARACTERISTICS at T_A = 25°C

Symbol	Parameter	Test Conditions	Ratings			Unit
			Min	Typ	Max	
$V_{(BR)GDS}$	Gate−to−Drain Breakdown Voltage	I_G = −10 μA, V_{DS} = 0 V	−15	–	–	V
I_{GSS}	Gate Cutoff Current	V_{GS} = −10 V, V_{DS} = 0 V	–	–	−1.0	nA
$V_{GS(off)}$	Cutoff Voltage	V_{DS} = 5 V, I_D = 100 μA	−0.3	−0.7	−1.0	V
I_{DSS}	Drain Current	V_{DS} = 5 V, V_{GS} = 0 V	10	–	20	mA
yfs	Forward Transfer Admittance	V_{DS} = 5 V, V_{GS} = 0 V, f = 1 kHz	20	38	–	mS
C_{iss}	Input Capacitance	V_{DS} = 5 V, V_{GS} = 0 V, f = 1 MHz	–	10.0	–	pF
C_{rss}	Reverse Transfer Capacitance		–	2.9	–	pF
NF	Noise Figure	V_{DS} = 5 V, R_g = 1 kΩ, I_D = 1 mA, f = 1 kHz	–	1.0	–	dB

Product parametric performance is indicated in the Electrical Characteristics for the listed test conditions, unless otherwise noted. Product performance may not be indicated by the Electrical Characteristics if operated under different conditions.

TYPICAL CHARACTERISTICS

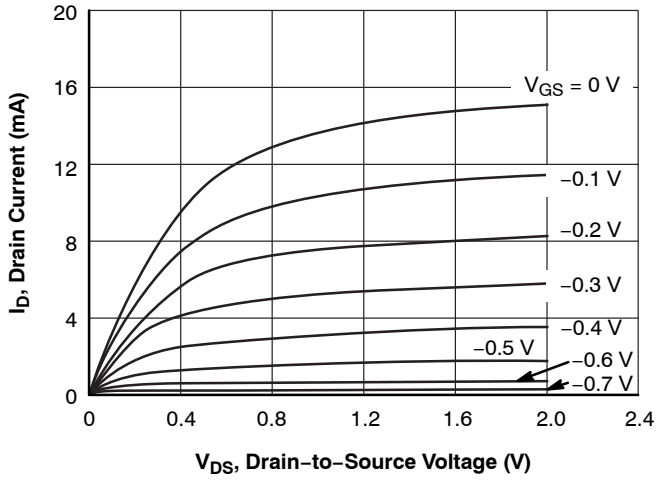


Figure 1. $I_D - V_{DS}$

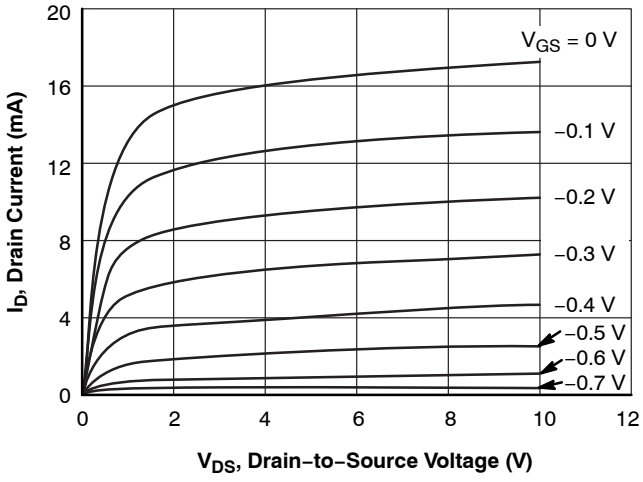


Figure 2. $I_D - V_{DS}$

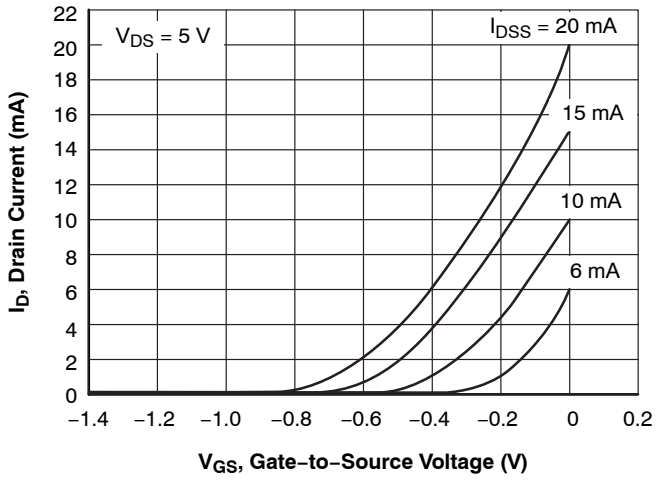


Figure 3. $I_D - V_{GS}$

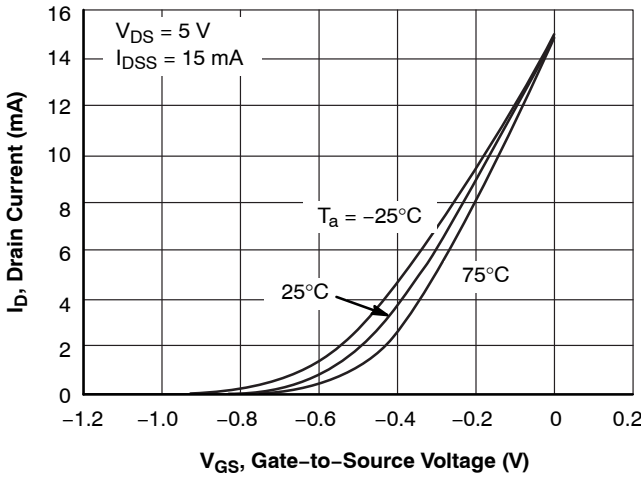


Figure 4. $I_D - V_{GS}$

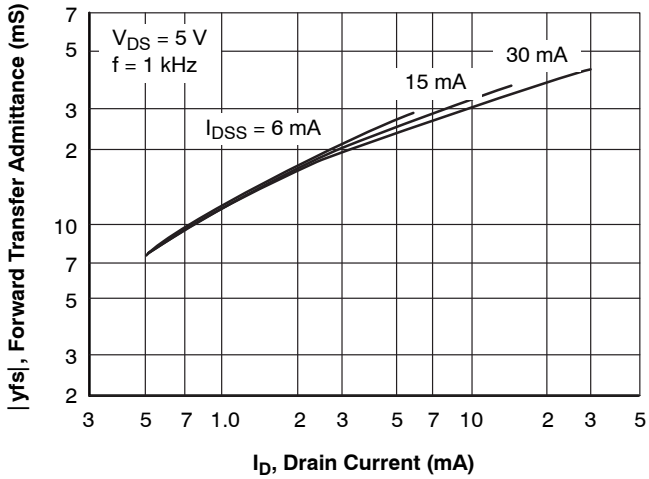


Figure 5. $|yfs| - I_D$

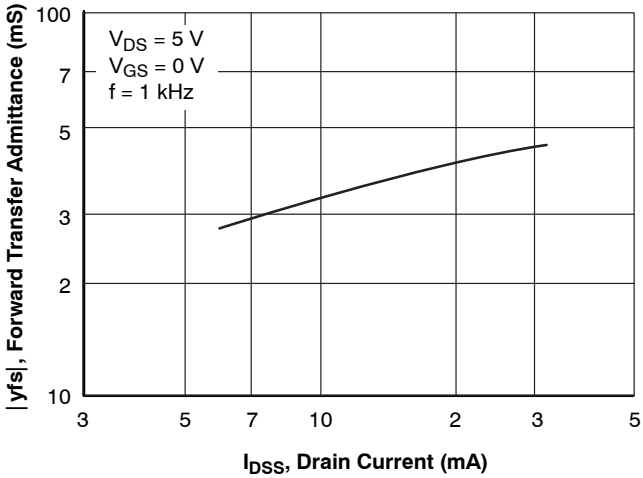


Figure 6. $|yfs| - I_{DSS}$

TYPICAL CHARACTERISTICS (continued)

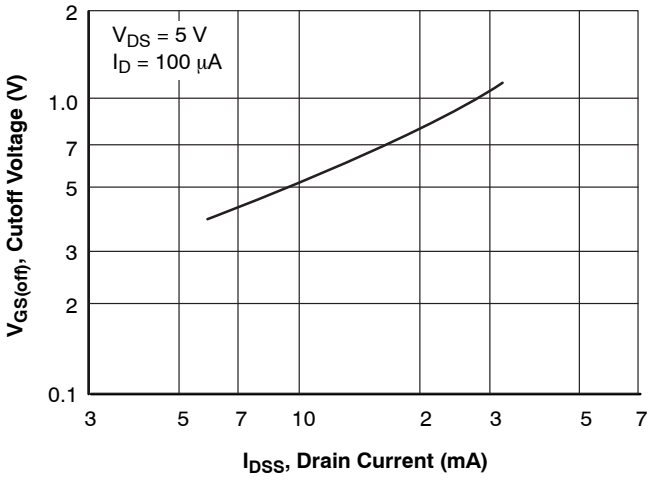


Figure 7. $V_{GS(off)}$ – I_{DSS}

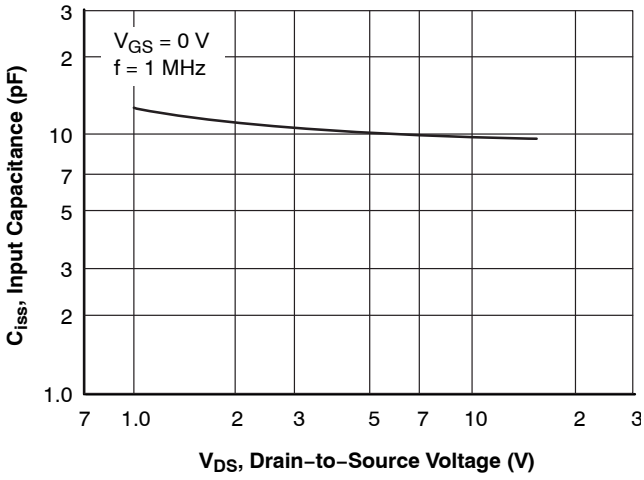


Figure 8. C_{iss} – V_{DS}

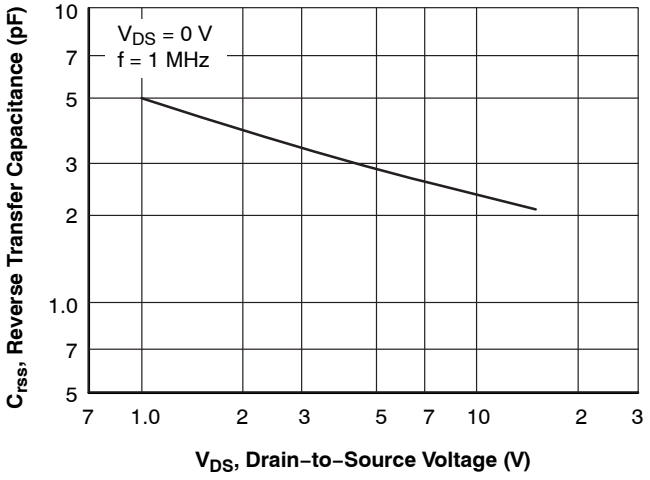


Figure 9. C_{rss} – V_{DS}

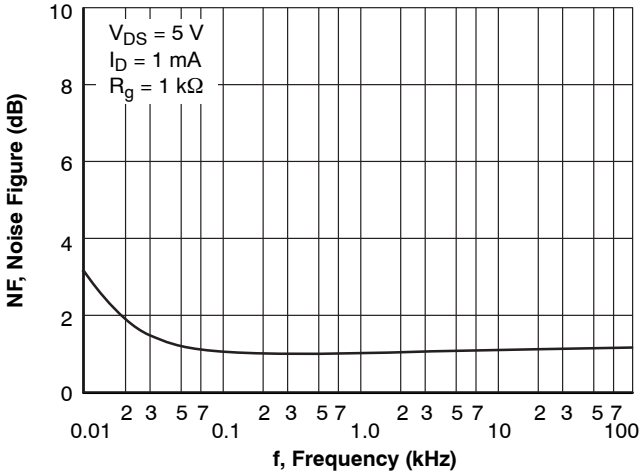


Figure 10. NF – f

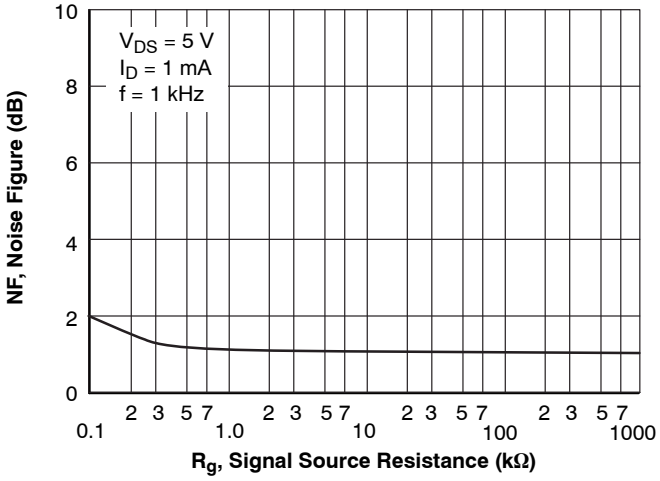


Figure 11. NF –R_g

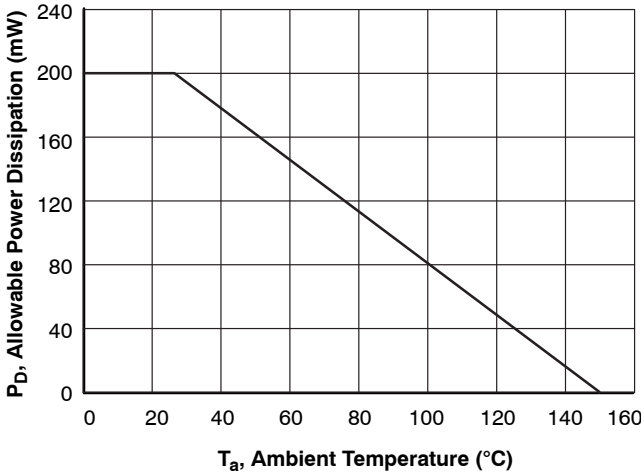
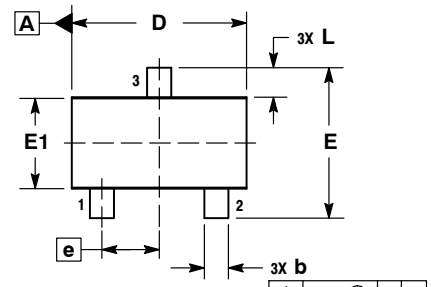


Figure 12. P_D – T_a

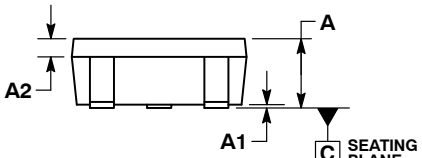
SCALE 2:1

SC−59 / CP3
CASE 318BJ
ISSUE O

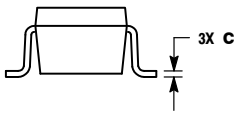
DATE 09 JAN 2015



TOP VIEW



SIDE VIEW

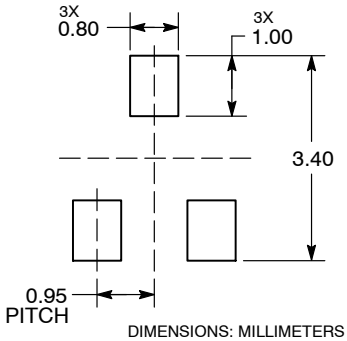


END VIEW

NOTES:
1. DIMENSIONING AND TOLERANCING PER ASME Y14.5M, 1994.
2. CONTROLLING DIMENSION: MILLIMETERS.
3. DIMENSIONS D AND E1 DO NOT INCLUDE MOLD FLASH, PROTRUSIONS, OR GATE BURRS. MOLD FLASH, PROTRUSIONS, OR GATE BURRS SHALL NOT EXCEED 0.20 PER SIDE.
4. DIMENSIONS D AND E1 ARE MEASURED AT THE OUTERMOST EXTREME OF THE PLASTIC BODY.
5. DIMENSIONS b AND c APPLY TO THE FLAT SECTION OF THE LEAD BETWEEN 0.10 AND 0.20 FROM THE TIP.

	MILLIMETERS	
DIM	MIN	MAX
A	0.95	1.35
A1	0.00	0.10
A2	0.20	0.40
b	0.35	0.50
c	0.10	0.20
D	2.75	3.05
E	2.30	2.70
E1	1.35	1.65
e	0.95 BSC	
L	0.35	0.75

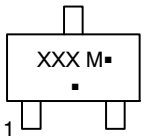
RECOMMENDED SOLDERING FOOTPRINT*



DIMENSIONS: MILLIMETERS

*For additional information on our Pb−Free strategy and soldering details, please download the **onsemi** Soldering and Mounting Techniques Reference Manual, SOLDERRM/D.

GENERIC MARKING DIAGRAM



XXX = Specific Device Code
M = Date Code
▪ = Pb−Free Package

(Note: Microdot may be in either location)

*This information is generic. Please refer to device data sheet for actual part marking. Pb−Free indicator, “G” or microdot “ ▪”, may or may not be present.

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