NSVJ2394SA3

N-Channel JFET
15V, 10 to 32mA, 38mS

ON Semiconductor®

www.onsemi.com

Automotive JFET designed for compact and efficient designs and including high gain performance. AEC-Q101 qualified JFET and PPAP capable suitable for automotive applications.

Features

- Large | yfs |
- Small Ciss
- This Small Package Enables Sets to be Smaller and Thinner
- Ultralow Noise Figure
- Pb-Free and RoHS compliance
- AEC-Q101 qualified and PPAP capable.

Applications

- AM Tuner RF Amplifier
- Low Noise Amplifier

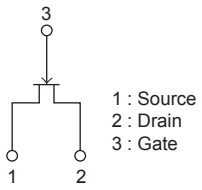
SPECIFICATIONS

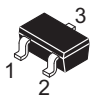
ABSOLUTE MAXIMUM RATINGS at Ta = 25°C (Note 1)

Parameter	Symbol	Value	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
Operating Junction and Storage Temperature	T_J, T_{Stg}	−55 to +150	°C

Note 1 : 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.

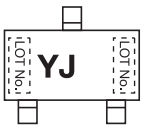
ELECTRICAL CONNECTION
N-Channel





SC-59 / CP3

MARKING



NSVJ2394SA3T1G

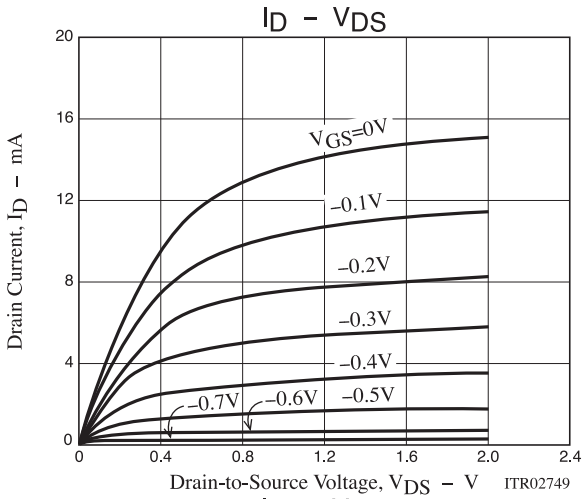
ORDERING INFORMATION

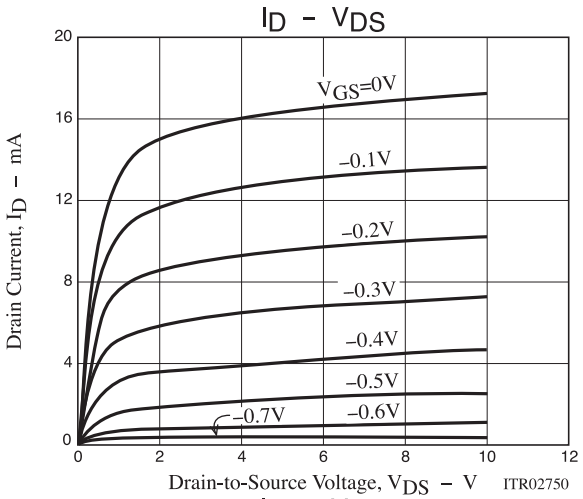
See detailed ordering and shipping information on page 5 of this data sheet

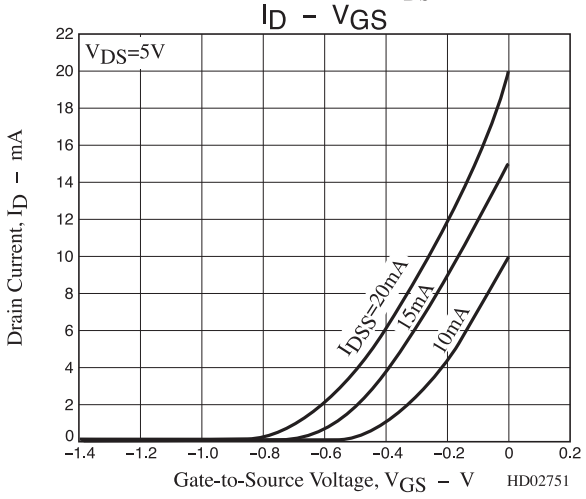
ELECTRICAL CHARACTERISTICS at Ta = 25°C (Note 2)

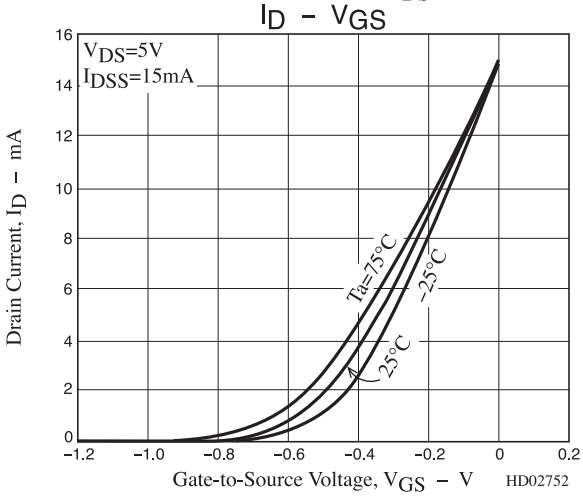
Parameter	Symbol	Conditions	Value			Unit
			min	typ	max	
Gate-to-Drain Breakdown Voltage	$V_{(BR)GDS}$	I_G = −10μA, V_{DS} = 0V,	−15			V
Gate Cutoff Current	I_{GSS}	V_{GS} = −10V, V_{DS} = 0V			−1.0	nA
Cutoff Voltage	$V_{GS(off)}$	V_{DS} = 5V, I_D = 100μA	−0.3	−0.7	−1.5	V
Drain Current	I_{DSS}	V_{DS} = 5V,V_{GS} = 0V	10		32	mA
Forward Transfer Admittance	| yfs |	V_{DS} = 5V, V_{GS} = 0V, f = 1kHz	20	38		mS
Input Capacitance	Ciss	V_{DS} = 5V, V_{GS} = 0V, f = 1MHz		10		pF
Reverse Transfer Capacitance	Crss			2.9		pF
Noise Figure	NF	V_{DS} = 5V, Rg = 1kΩ, I_D = 1mA, f = 1kHz		1.0		dB

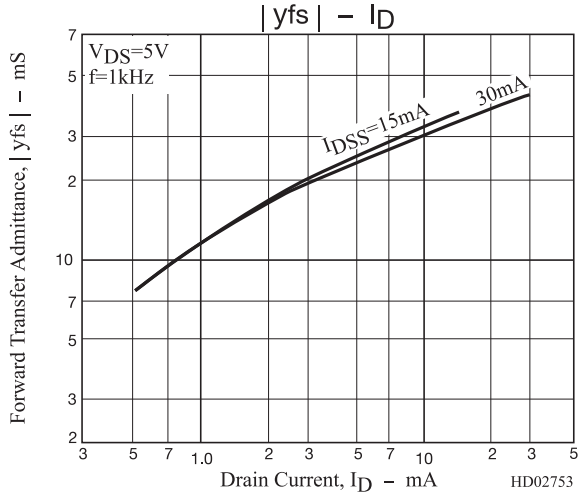
Note 2 : Product parametric performance is indicated in the Electrical Characteristics for the listed test conditions, unless otherwise noted. Product performance may not be indicated by the Electrical Characteristics if operated under different conditions.

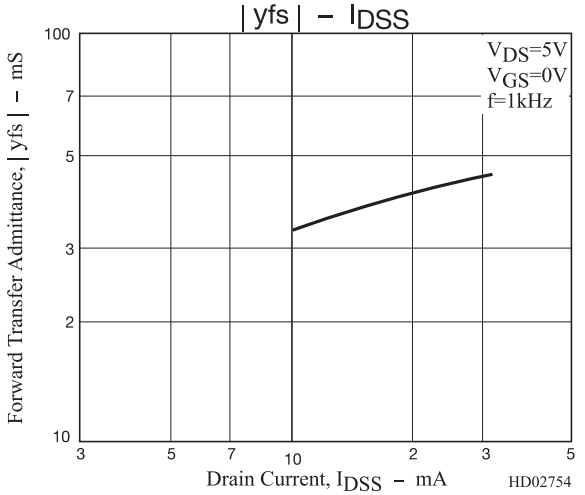


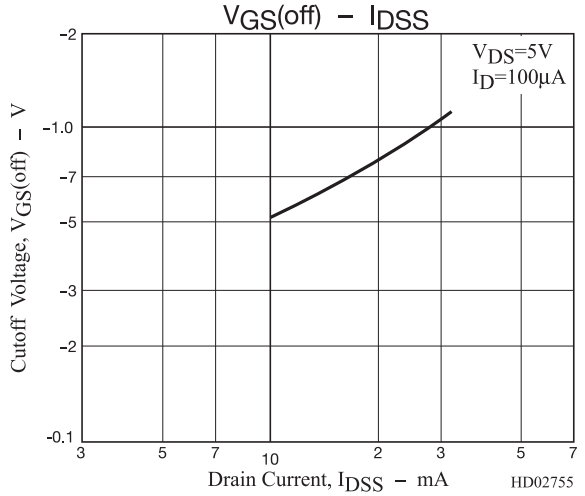


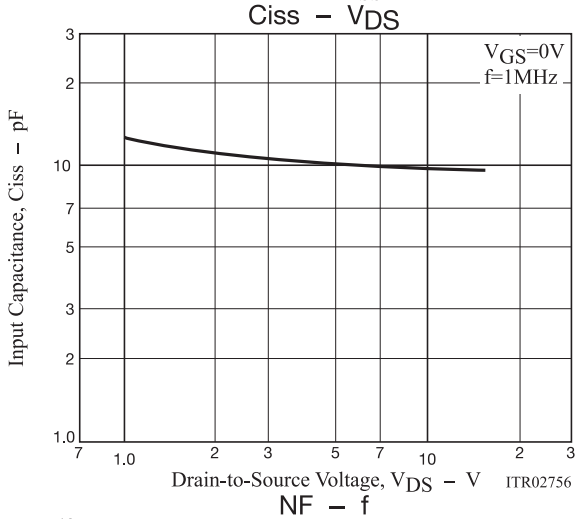


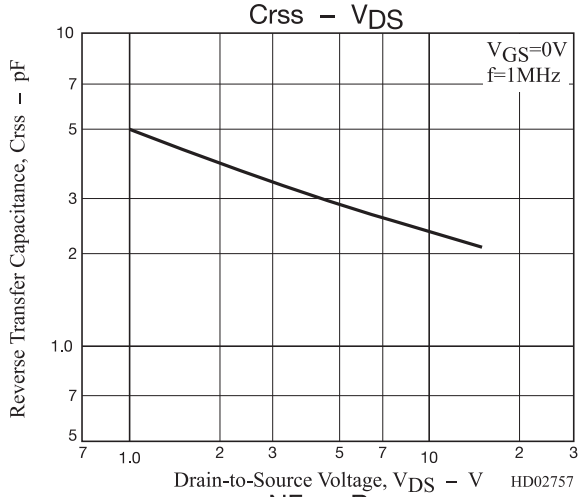


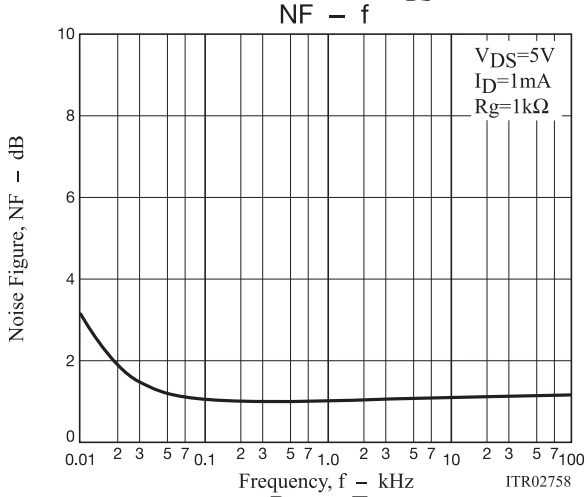

| yfs | – ID
VDS=5V
f=1kHz
IDSS=15mA
30mA
Forward Transfer Admittance, | yfs | – mS
Drain Current, ID – mA
HD02753

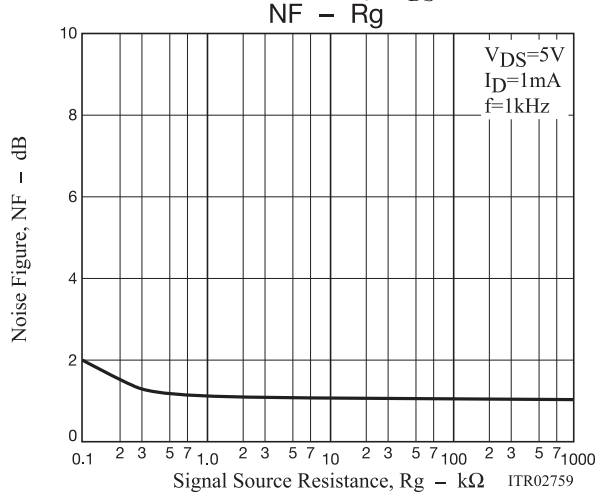

| yfs | – IDSS
VDS=5V
VGS=0V
f=1kHz
Forward Transfer Admittance, | yfs | – mS
Drain Current, IDSS – mA
HD02754

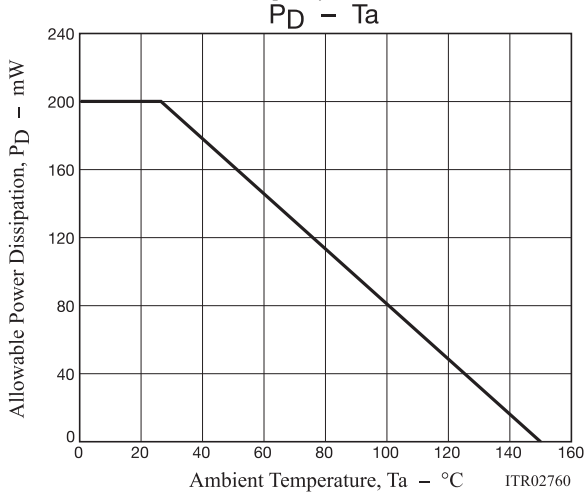

VGS(off) – IDSS
VDS=5V
ID=100µA
Cutoff Voltage, VGS(off) – V
Drain Current, IDSS – mA
HD02755


Ciss – VDS
VGS=0V
f=1MHz
Input Capacitance, Ciss – pF
Drain-to-Source Voltage, VDS – V
ITR02756


Crss – VDS
VGS=0V
f=1MHz
Reverse Transfer Capacitance, Crss – pF
Drain-to-Source Voltage, VDS – V
HD02757

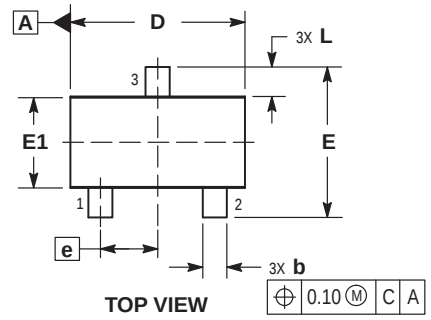

NF – f
VDS=5V
ID=1mA
Rg=1kΩ
Noise Figure, NF – dB
Frequency, f – kHz
ITR02758


NF – Rg
VDS=5V
ID=1mA
f=1kHz
Noise Figure, NF – dB
Signal Source Resistance, Rg – kΩ
ITR02759

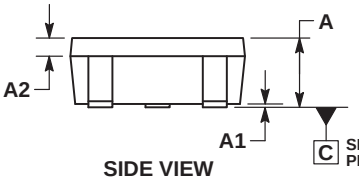

PD – Ta
Allowable Power Dissipation, PD – mW
Ambient Temperature, Ta – °C
ITR02760

PACKAGE DIMENSIONS
unit : mm

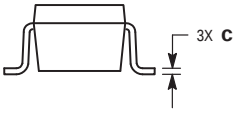
SC-59 / CP3
CASE 318BJ
ISSUE O



TOP VIEW



SIDE VIEW

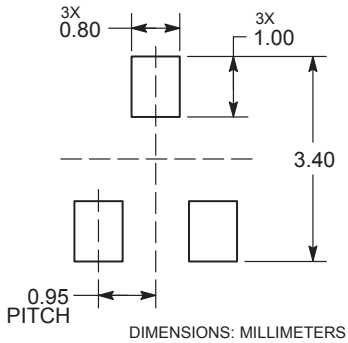


END VIEW

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

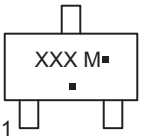
RECOMMENDED SOLDERING FOOTPRINT*



DIMENSIONS: MILLIMETERS

*For additional information on our Pb-Free strategy and soldering details, please download the ON Semiconductor 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.

ORDERING INFORMATION

Device	Marking	Package	Shipping
NSVJ2394SA3T1G	YJ	SC-59 3-Lead / CP3 (Pb-Free)	3,000 / Tape & Reel

† For information on tape and reel specifications, including part orientation and tape sizes, please refer to our Tape and Reel Packaging Specifications Brochure, BRD8011/D. http://www.onsemi.com/pub_link/Collateral/BRD8011-D.PDF