2N5457, 2N5458

2N5457 and 2N5458 are Preferred Devices

JFETs - General Purpose

N–Channel – Depletion

N–Channel Junction Field Effect Transistors, depletion mode (Type A) designed for audio and switching applications.

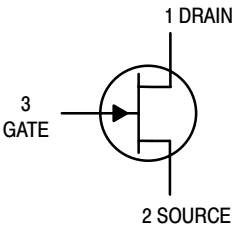
- N–Channel for Higher Gain
- Drain and Source Interchangeable
- High AC Input Impedance
- High DC Input Resistance
- Low Transfer and Input Capacitance
- Low Cross–Modulation and Intermodulation Distortion
- Unibloc Plastic Encapsulated Package

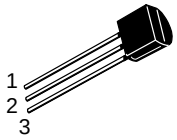
MAXIMUM RATINGS

Rating	Symbol	Value	Unit
Drain–Source Voltage	V_{DS}	25	Vdc
Drain–Gate Voltage	V_{DG}	25	Vdc
Reverse Gate–Source Voltage	V_{GSR}	–25	Vdc
Gate Current	I_G	10	mAdc
Total Device Dissipation @ T_A = 25°C Derate above 25°C	P_D	 310 2.82	 mW mW/°C
Operating Junction Temperature	T_J	135	°C
Storage Temperature Range	T_{stg}	–65 to +150	°C

ON Semiconductor™

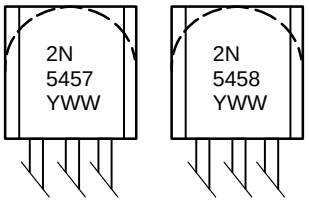
http://onsemi.com





TO–92
CASE 29
STYLE 5

MARKING DIAGRAMS



Y = Year
WW = Work Week

ORDERING INFORMATION

Device	Package	Shipping
2N5457	TO–92	5000 Units/Box
2N5458	TO–92	5000 Units/Box

Preferred devices are recommended choices for future use and best overall value.

ELECTRICAL CHARACTERISTICS (T_A = 25°C unless otherwise noted)

Characteristic		Symbol	Min	Min	Max	Unit
OFF CHARACTERISTICS						
Gate–Source Breakdown Voltage	(I_G = –10 μAdc, V_{DS} = 0)	$V_{(BR)GSS}$	–25	–25	–	Vdc
Gate Reverse Current	(V_{GS} = –15 Vdc, V_{DS} = 0) (V_{GS} = –15 Vdc, V_{DS} = 0, T_A = 100°C)	I_{GSS}	– –	– –	1.0 –200	nAdc
Gate–Source Cutoff Voltage (V_{DS} = 15 Vdc, i_D = 1 nAdc)	2N5457 2N5458	$V_{GS(off)}$	–1.0 –2.0	– –	–6.0 –7.0	Vdc
Gate–Source Voltage (V_{DS} = 15 Vdc, i_D = 100 μAdc) (V_{DS} = 15 Vdc, i_D = 200 μAdc)	 2N5457 2N5458	V_{GS}	– –	–2.5 –3.5	–6.0 –7.0	Vdc
ON CHARACTERISTICS						
Zero–Gate–Voltage Drain Current (Note 1.) (V_{DS} = 20 Vdc, V_{GS} = 0)	2N5638 2N5639	I_{DSS}	1.0 2.0	3.0 6.0	5.0 9.0	mAdc
DYNAMIC CHARACTERISTICS						
Forward Transfer Admittance (Note 1.) (V_{DS} = 15 Vdc, V_{GS} = 0, f = 1 kHz)	2N5638 2N5639	$\|Y_{fs}\|$	1000 1500	3000 4000	5000 5500	μmhos
Forward Transfer Admittance (Note 1.)	(V_{DS} = 15 Vdc, V_{GS} = 0, f = 1 kHz)	$\|Y_{os}\|$	–	10	50	μmhos
Input Capacitance	(V_{DS} = 15 Vdc, V_{GS} = 0, f = 1 kHz)	C_{iss}	–	4.5	7.0	pF
Reverse Transfer Capacitance	(V_{DS} = 15 Vdc, V_{GS} = 0, f = 1 kHz)	C_{rss}	–	1.5	3.0	pF

1. Pulse Width ≤ 630 ms, Duty Cycle ≤ 10%.

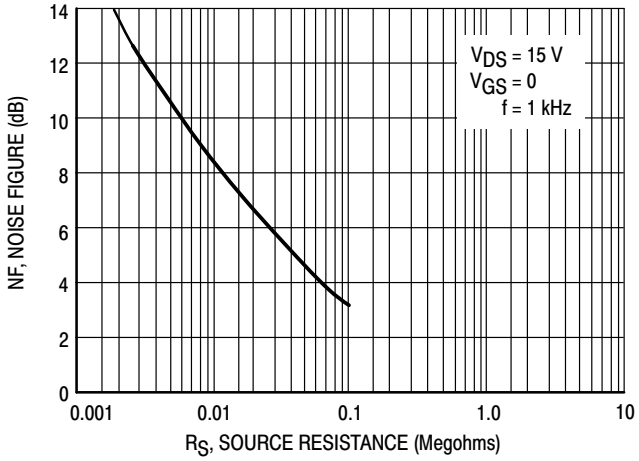


Figure 1. Noise Figure versus Source Resistance

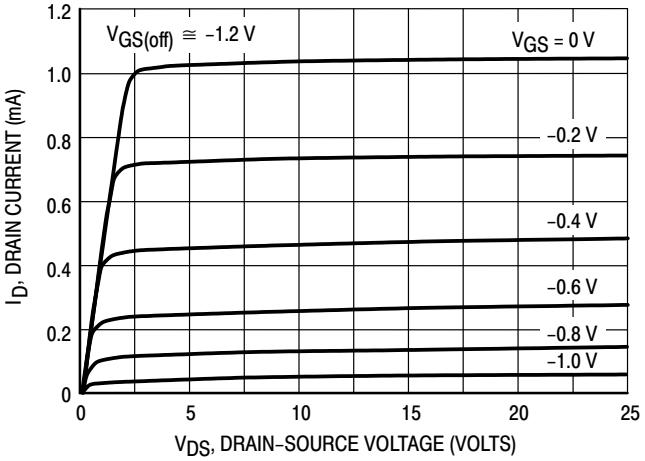


Figure 2. Typical Drain Characteristics

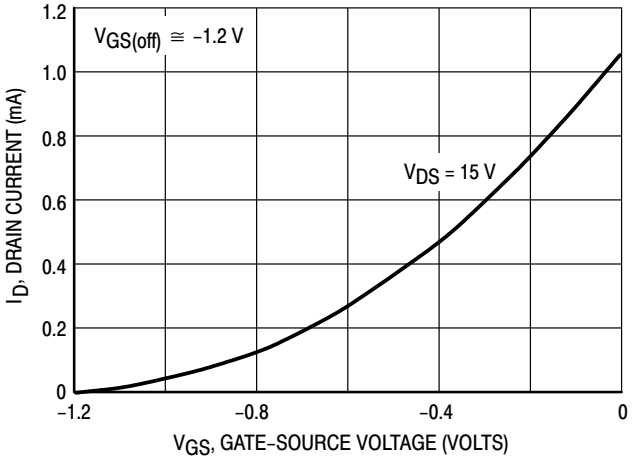


Figure 3. Common Source Transfer Characteristics

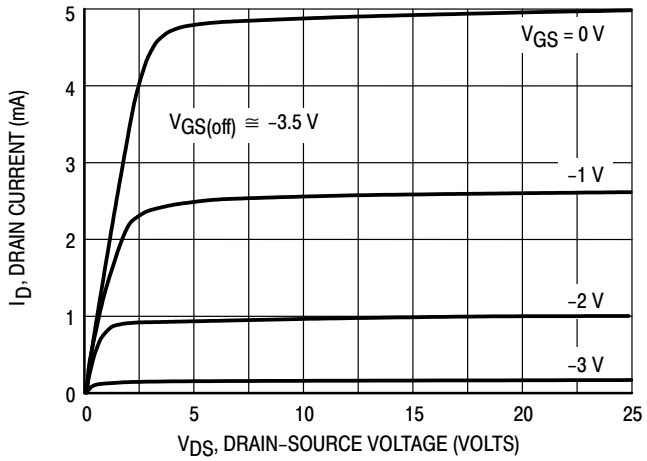


Figure 4. Typical Drain Characteristics

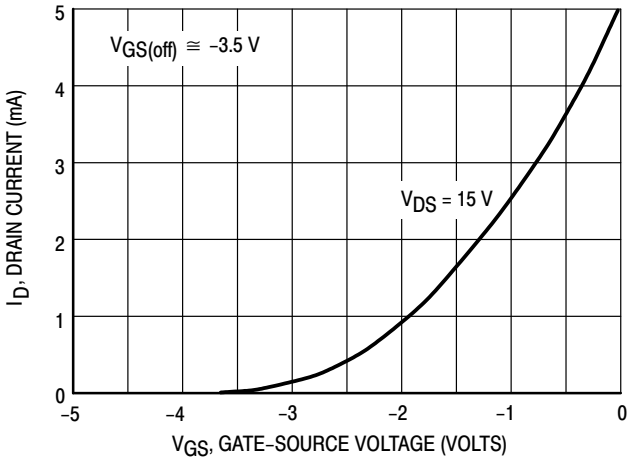


Figure 5. Common Source Transfer Characteristics

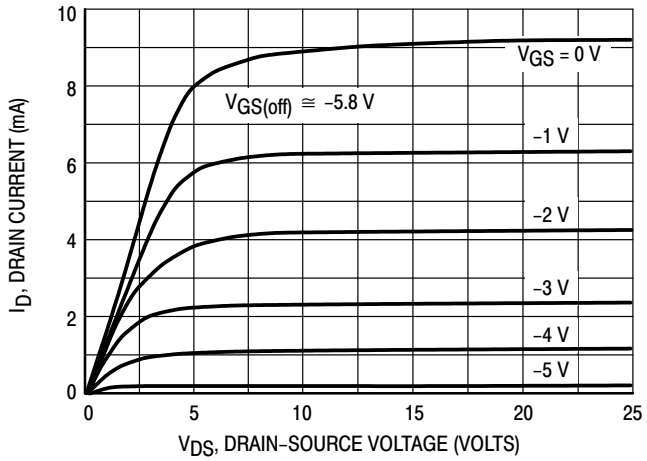


Figure 6. Typical Drain Characteristics

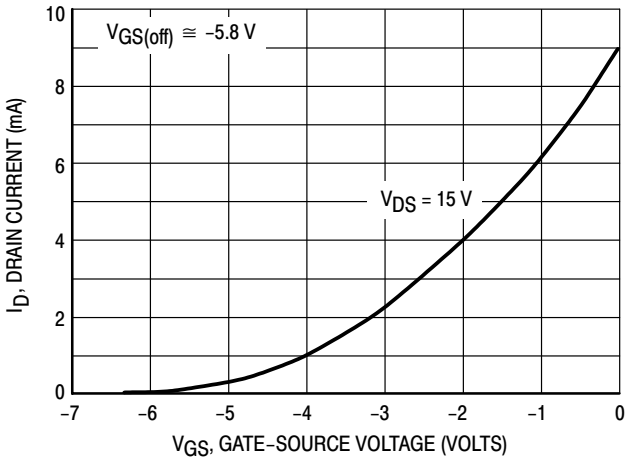
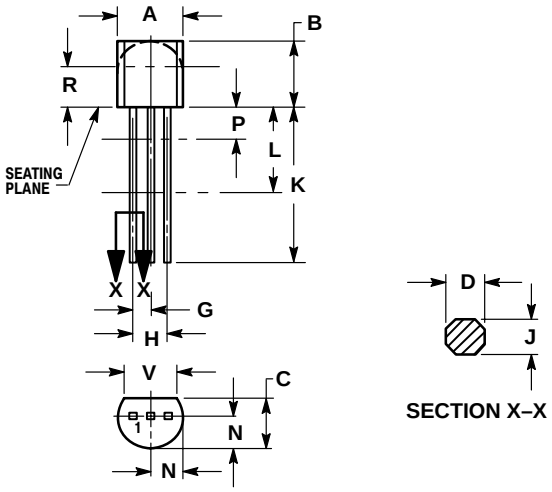


Figure 7. Common Source Transfer Characteristics

NOTE: Note: Graphical data is presented for dc conditions. Tabular data is given for pulsed conditions (Pulse Width = 630 ms, Duty Cycle = 10%). Under dc conditions, self heating in higher I_{DSS} units reduces I_{DSS}.

PACKAGE DIMENSIONS

TO–92 (TO–226)
CASE 29–11
ISSUE AL



NOTES:
1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.
2. CONTROLLING DIMENSION: INCH.
3. CONTOUR OF PACKAGE BEYOND DIMENSION R IS UNCONTROLLED.
4. LEAD DIMENSION IS UNCONTROLLED IN P AND BEYOND DIMENSION K MINIMUM.

	INCHES		MILLIMETERS	
DIM	MIN	MAX	MIN	MAX
A	0.175	0.205	4.45	5.20
B	0.170	0.210	4.32	5.33
C	0.125	0.165	3.18	4.19
D	0.016	0.021	0.407	0.533
G	0.045	0.055	1.15	1.39
H	0.095	0.105	2.42	2.66
J	0.015	0.020	0.39	0.50
K	0.500	---	12.70	---
L	0.250	---	6.35	---
N	0.080	0.105	2.04	2.66
P	---	0.100	---	2.54
R	0.115	---	2.93	---
V	0.135	---	3.43	---

PUBLICATION ORDERING INFORMATION

Literature Fulfillment:
Literature Distribution Center for ON Semiconductor
P.O. Box 5163, Denver, Colorado 80217 USA
Phone: 303–675–2175 or 800–344–3860 Toll Free USA/Canada
Fax: 303–675–2176 or 800–344–3867 Toll Free USA/Canada
Email: ONlit@hibbertco.com

N. American Technical Support: 800–282–9855 Toll Free USA/Canada

JAPAN: ON Semiconductor, Japan Customer Focus Center
4–32–1 Nishi–Gotanda, Shinagawa–ku, Tokyo, Japan 141–0031
Phone: 81–3–5740–2700
Email: r14525@onsemi.com

ON Semiconductor Website: http://onsemi.com

For additional information, please contact your local Sales Representative.