

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

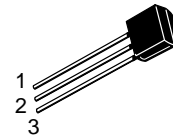
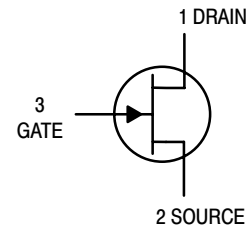
MAXIMUM RATINGS

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 @ $T_A = 25^\circ\text{C}$ Derate above 25°C	P_D	310 2.82	mW mW/ $^\circ\text{C}$
Operating Junction Temperature	T_J	135	$^\circ\text{C}$
Storage Temperature Range	T_{stg}	-65 to +150	$^\circ\text{C}$



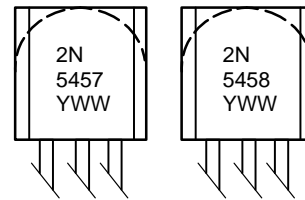
ON Semiconductor™

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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.

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ELECTRICAL CHARACTERISTICS ($T_A = 25^\circ\text{C}$ unless otherwise noted)

Characteristic	Symbol	Min	Min	Max	Unit
OFF CHARACTERISTICS					
Gate-Source Breakdown Voltage ($I_G = -10 \mu\text{Adc}$, $V_{DS} = 0$)	$V_{(BR)GSS}$	-25	-25	-	Vdc
Gate Reverse Current ($V_{GS} = -15 \text{Vdc}$, $V_{DS} = 0$) ($V_{GS} = -15 \text{Vdc}$, $V_{DS} = 0$, $T_A = 100^\circ\text{C}$)	I_{GSS}	-	-	1.0 -200	nAdc
Gate-Source Cutoff Voltage ($V_{DS} = 15 \text{Vdc}$, $i_D = 1 \text{nAdc}$)	$V_{GS(off)}$	-1.0 -2.0	-	-6.0 -7.0	Vdc
Gate-Source Voltage ($V_{DS} = 15 \text{Vdc}$, $i_D = 100 \mu\text{Adc}$) ($V_{DS} = 15 \text{Vdc}$, $i_D = 200 \mu\text{Adc}$)	V_{GS}	-	-2.5 -3.5	-6.0 -7.0	Vdc

ON CHARACTERISTICS

Zero-Gate-Voltage Drain Current (Note 1.) ($V_{DS} = 20 \text{Vdc}$, $V_{GS} = 0$)	2N5638 2N5639	I_{DSS}	1.0 2.0	3.0 6.0	5.0 9.0	mAdc
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DYNAMIC CHARACTERISTICS

Forward Transfer Admittance (Note 1.) ($V_{DS} = 15 \text{Vdc}$, $V_{GS} = 0$, $f = 1 \text{kHz}$)	2N5638 2N5639	$ Y_{fs} $	1000 1500	3000 4000	5000 5500	μmhos
Forward Transfer Admittance (Note 1.) ($V_{DS} = 15 \text{Vdc}$, $V_{GS} = 0$, $f = 1 \text{kHz}$)		$ Y_{os} $	-	10	50	μmhos
Input Capacitance ($V_{DS} = 15 \text{Vdc}$, $V_{GS} = 0$, $f = 1 \text{kHz}$)		C_{iss}	-	4.5	7.0	pF
Reverse Transfer Capacitance ($V_{DS} = 15 \text{Vdc}$, $V_{GS} = 0$, $f = 1 \text{kHz}$)		C_{rss}	-	1.5	3.0	pF

1. Pulse Width $\leq 630 \text{ms}$, Duty Cycle $\leq 10\%$.

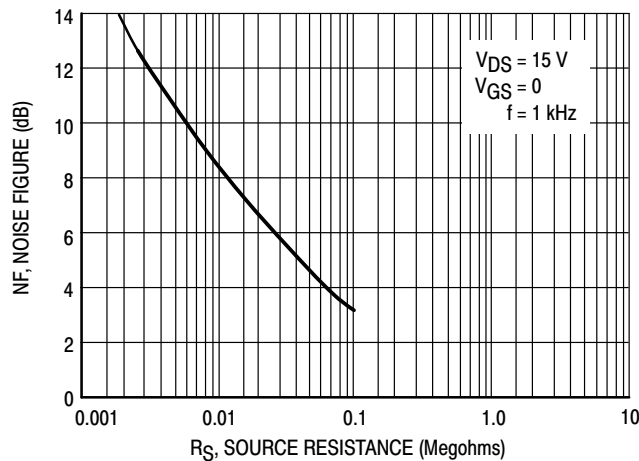


Figure 1. Noise Figure versus Source Resistance

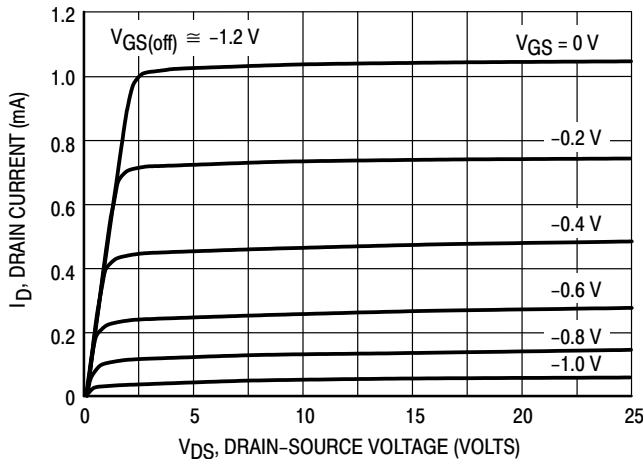


Figure 2. Typical Drain Characteristics

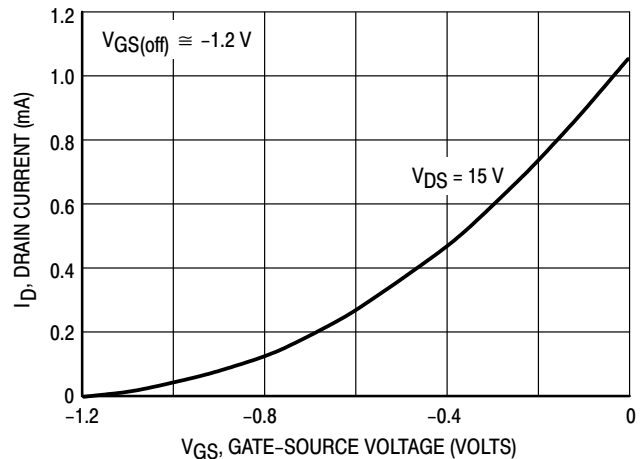


Figure 3. Common Source Transfer Characteristics

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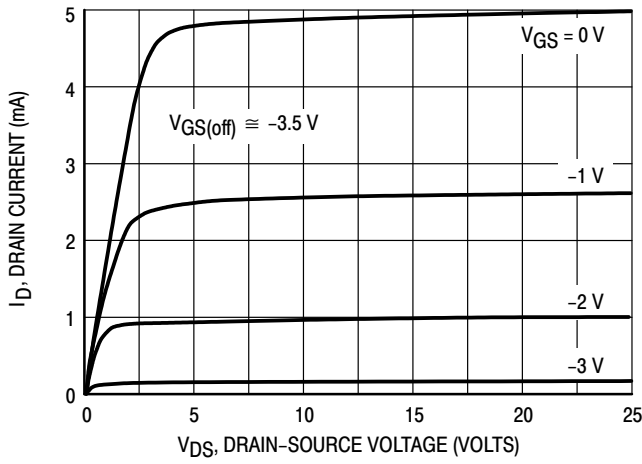


Figure 4. Typical Drain Characteristics

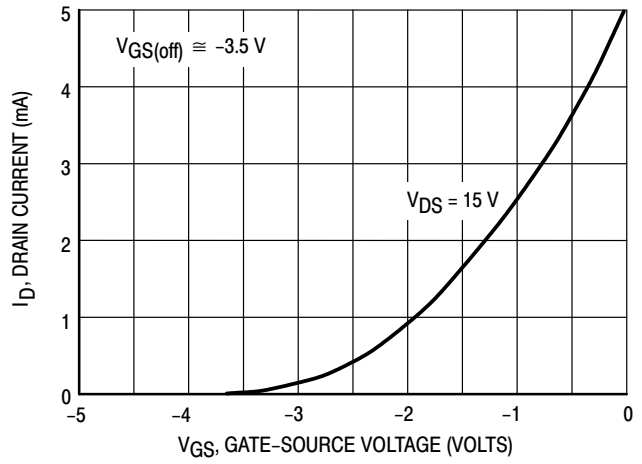


Figure 5. Common Source Transfer Characteristics

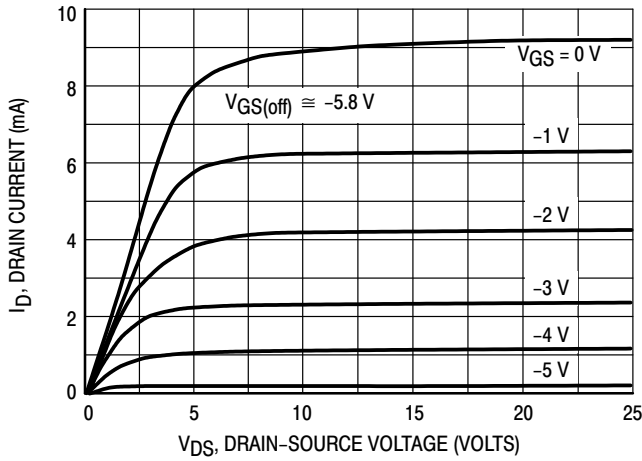


Figure 6. Typical Drain Characteristics

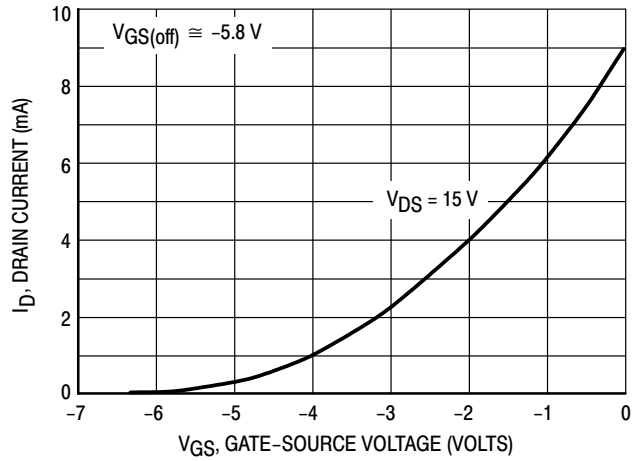


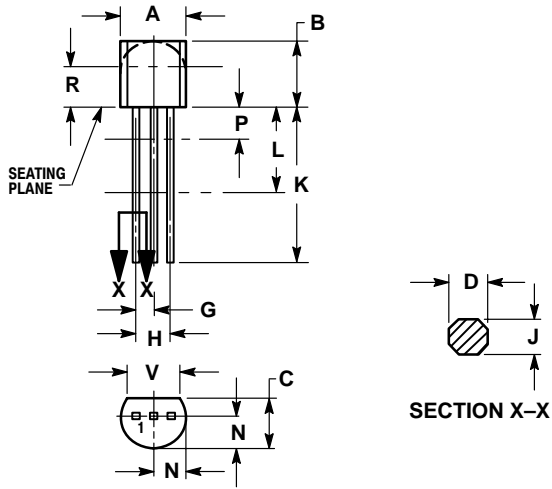
Figure 7. Common Source Transfer Characteristics

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} .

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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.

DIM	INCHES		MILLIMETERS	
	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	---

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