

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

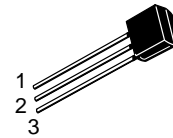
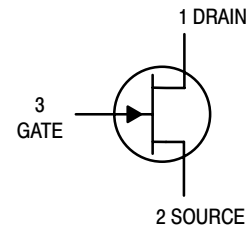
MAXIMUM RATINGS

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	$^\circ\text{C}$



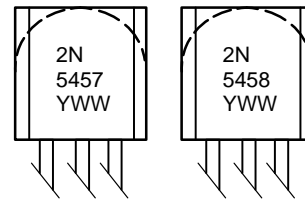
ON Semiconductor™

<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.

2N5457, 2N5458

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)	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)	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)	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)	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%.

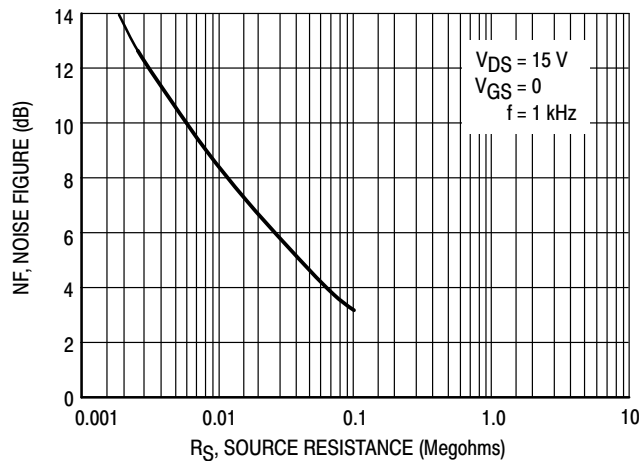


Figure 1. Noise Figure versus Source Resistance

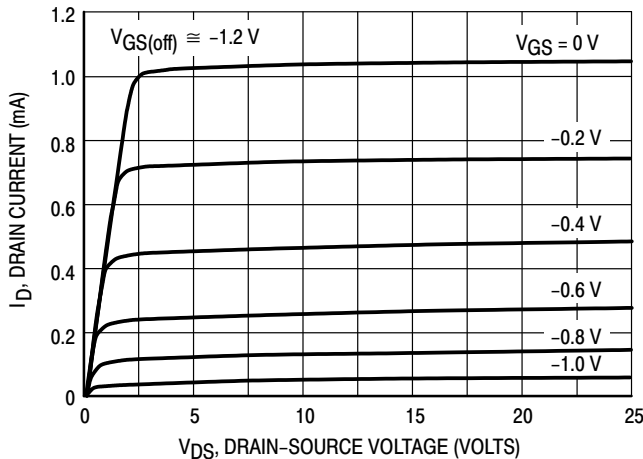


Figure 2. Typical Drain Characteristics

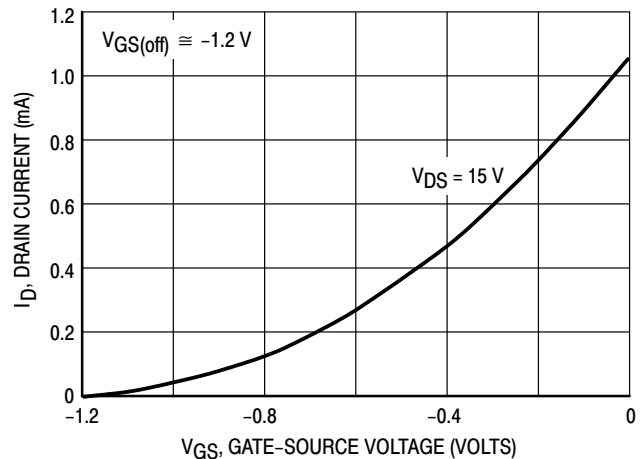


Figure 3. Common Source Transfer Characteristics

2N5457, 2N5458

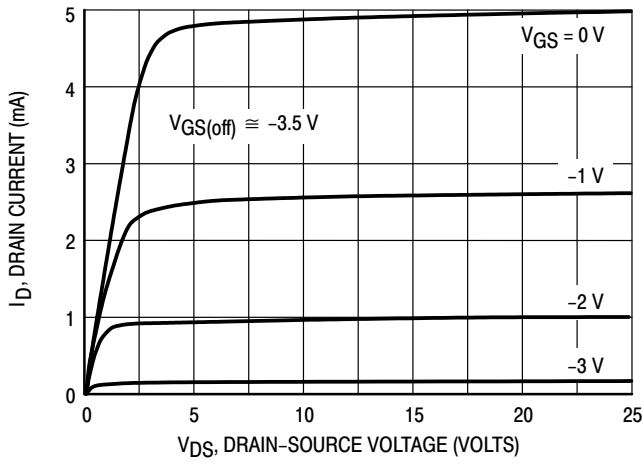


Figure 4. Typical Drain Characteristics

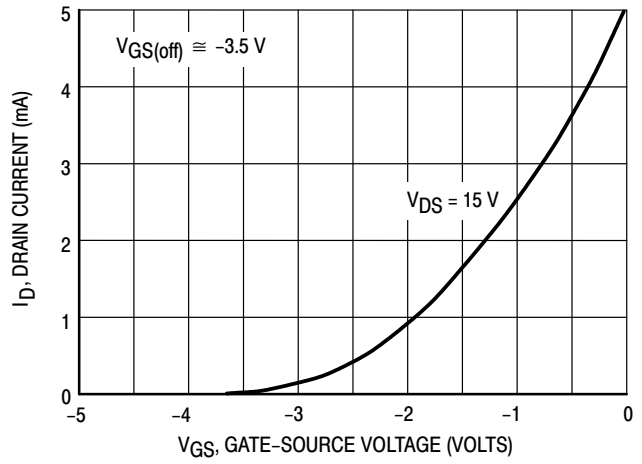


Figure 5. Common Source Transfer Characteristics

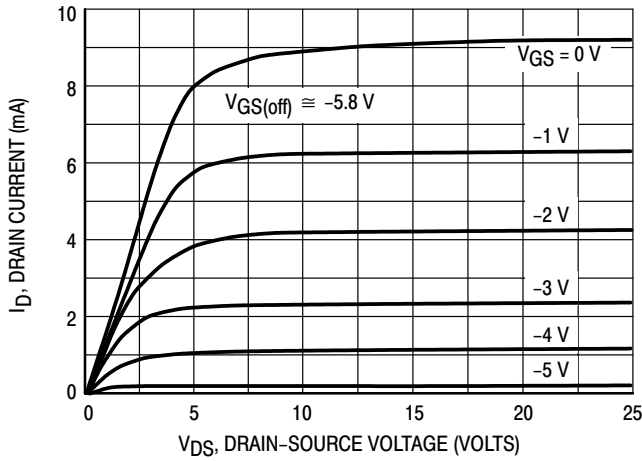


Figure 6. Typical Drain Characteristics

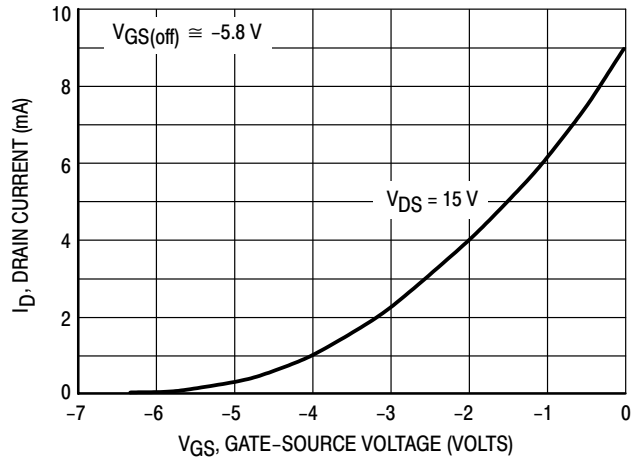


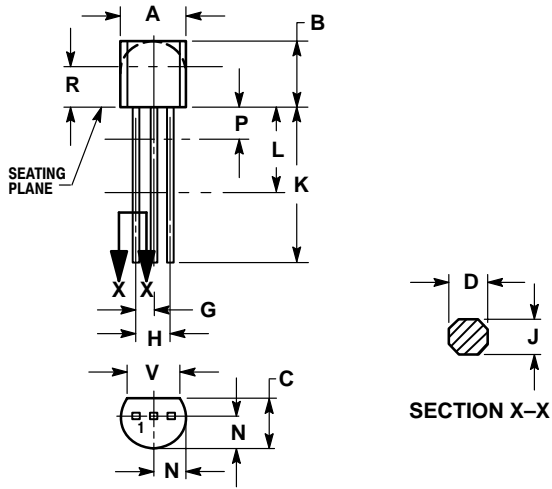
Figure 7. Common Source Transfer Characteristics

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} .

2N5457, 2N5458

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	---

ON Semiconductor and  are trademarks of Semiconductor Components Industries, LLC (SCILLC). SCILLC reserves the right to make changes without further notice to any products herein. SCILLC makes no warranty, representation or guarantee regarding the suitability of its products for any particular purpose, nor does SCILLC assume any liability arising out of the application or use of any product or circuit, and specifically disclaims any and all liability, including without limitation special, consequential or incidental damages. "Typical" parameters which may be provided in SCILLC data sheets and/or specifications can and do vary in different applications and actual performance may vary over time. All operating parameters, including "Typicals" must be validated for each customer application by customer's technical experts. SCILLC does not convey any license under its patent rights nor the rights of others. SCILLC products are not designed, intended, or authorized for use as components in systems intended for surgical implant into the body, or other applications intended to support or sustain life, or for any other application in which the failure of the SCILLC product could create a situation where personal injury or death may occur. Should Buyer purchase or use SCILLC products for any such unintended or unauthorized application, Buyer shall indemnify and hold SCILLC and its officers, employees, subsidiaries, affiliates, and distributors harmless against all claims, costs, damages, and expenses, and reasonable attorney fees arising out of, directly or indirectly, any claim of personal injury or death associated with such unintended or unauthorized use, even if such claim alleges that SCILLC was negligent regarding the design or manufacture of the part. SCILLC is an Equal Opportunity/Affirmative Action Employer.

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.