

P-Channel JFETs

Product Summary

Part Number	$V_{GS(off)}$ (V)	$V_{(BR)GSS}$ Min (V)	g_{fs} Min (mS)	I_{DSS} Min (mA)
2N5460	0.75 to 6	40	1	-1
2N5461	1 to 7.5	40	1.5	-2
2N5462	1.8 to 9	40	2	-4

Features

- High Input Impedance
- Very Low Noise
- High Gain: $A_V = 80$ @ 20 μ A

Benefits

- Low Signal Loss/System Error
- High System Sensitivity
- High-Quality Low-Level Signal Amplification

Applications

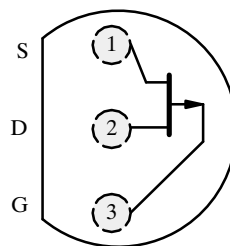
- Low-Current, Low-Voltage Amplifiers
- High-Side Switching
- Ultrahigh Input Impedance Pre-Amplifiers

Description

The 2N5460/5461/5462 are p-channel JFETs designed to provide all-around performance in a wide range of amplifier and analog switch applications.

The TO-226AA (TO-92) plastic package provides a low cost option, and the series is also available in tape-and-reel for automated assembly, (see Packaging Information).

TO-226AA
(TO-92)



Top View

Absolute Maximum Ratings

Gate-Drain Voltage	40 V
Gate-Source Voltage	40 V
Gate Current	-10 mA
Storage Temperature	-65 to 150°C
Operating Junction Temperature	-55 to 150°C

Lead Temperature ($1/16''$ from case for 10 sec.)	300°C
Power Dissipation ^a	350 mW

Notes

a. Derate 2.8 mW/°C above 25°C

Specifications^a

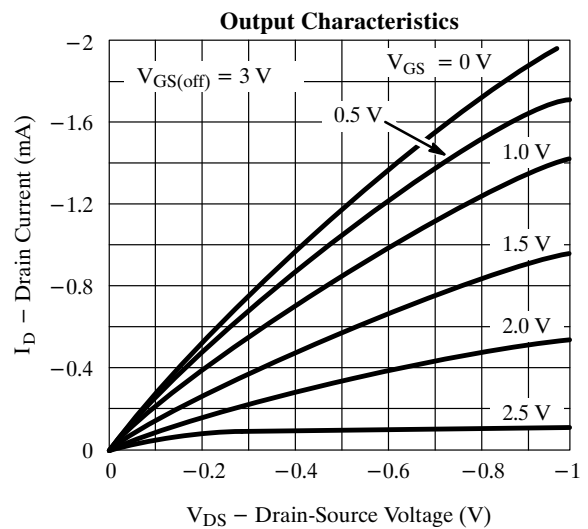
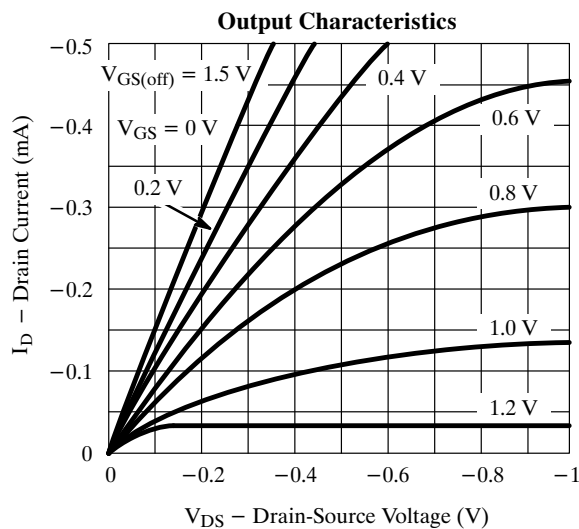
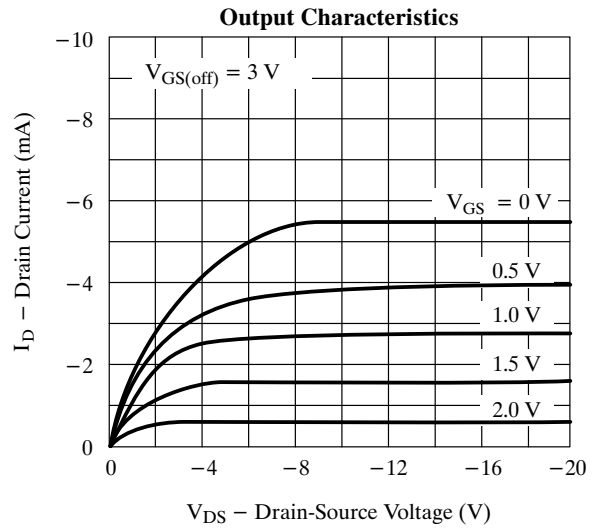
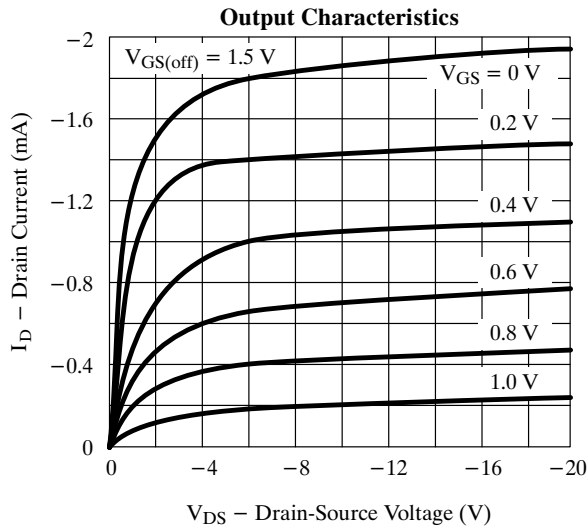
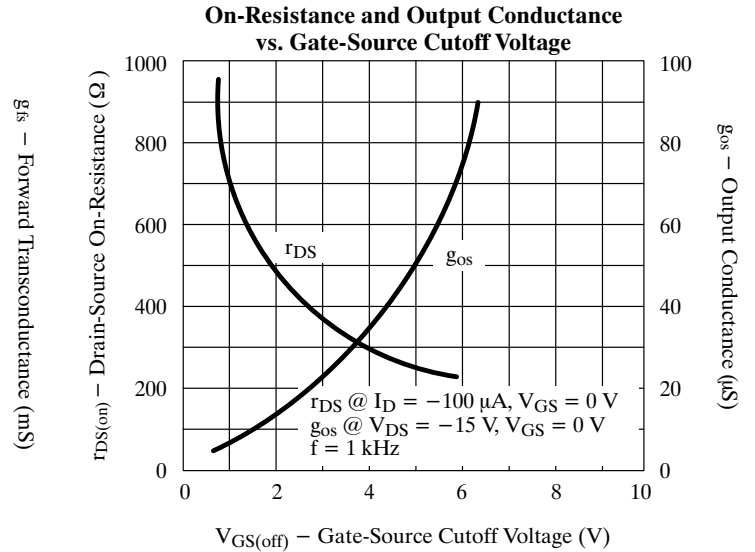
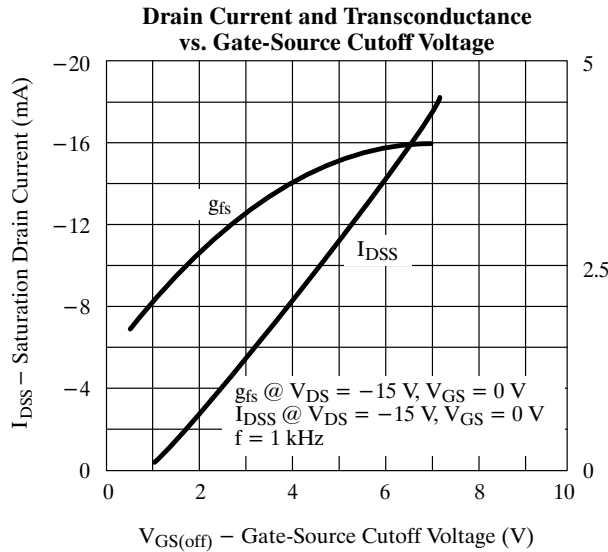
Parameter	Symbol	Test Conditions	Typ ^b	Limits						Unit	
				2N5460		2N5461		2N5462			
				Min	Max	Min	Max	Min	Max		
Static											
Gate-Source Breakdown Voltage	$V_{(BR)GSS}$	$I_G = 10 \mu A, V_{DS} = 0 V$	55	40		40		40		V	
Gate-Source Cutoff Voltage	$V_{GS(off)}$	$V_{DS} = -15 V, I_D = -1 \mu A$		0.75	6	1	7.5	1.8	9		
Saturation Drain Current ^c	I_{DSS}	$V_{DS} = -15 V, V_{GS} = 0 V$		-1	-5	-2	-9	-4	-16	mA	
Gate Reverse Current	I_{GSS}	$V_{GS} = 20 V, V_{DS} = 0 V$	0.003		5		5		5	nA	
		$T_A = 100^\circ C$	0.0003		1		1		1	μA	
Gate Operating Current	I_G	$V_{DG} = -20 V, I_D = -0.1 mA$	3							pA	
Drain Cutoff Current	$I_{D(off)}$	$V_{DS} = -15 V, V_{GS} = 10 V$	-5								
Gate-Source Voltage	V_{GS}	$V_{DS} = -15 V$	$I_D = -0.1 mA$	1.3	0.5	4					V
			$I_D = -0.2 mA$	2.3			0.8	4.5			
			$I_D = -0.4 mA$	3.8					1.5	6	
Gate-Source Forward Voltage	$V_{GS(F)}$	$I_G = -1 mA, V_{DS} = 0 V$	-0.7								
Dynamic											
Common-Source Forward Transconductance	g_{fs}	$V_{DS} = -15 V, V_{GS} = 0 V$ $f = 1 kHz$		1	4	1.5	5	2	6	mS	
Common-Source Output Conductance	g_{os}				75		75		75	μS	
Common-Source Input Capacitance	C_{iss}	$V_{DS} = -15 V, V_{GS} = 0 V$ $f = 1 MHz$	4.5		7		7		7	pF	
Common-Source Reverse Transfer Capacitance	C_{rss}		1.2								
Common-Source Output Capacitance	C_{oss}		1.5		2		2		2		
Equivalent Input Noise Voltage	\bar{e}_n	$V_{DS} = -15 V, V_{GS} = 0 V$ $f = 100 Hz$	15		115		115		115	nV/\sqrt{Hz}	
Noise Figure	NF	$V_{DS} = -15 V, V_{GS} = 0 V$ $f = 100 Hz, R_G = 1 M\Omega, BW = 1 Hz$	0.2		2.5		2.5		2.5	dB	

Notes

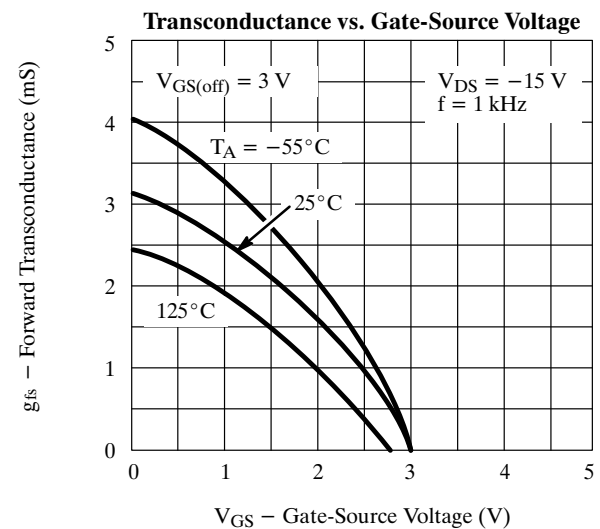
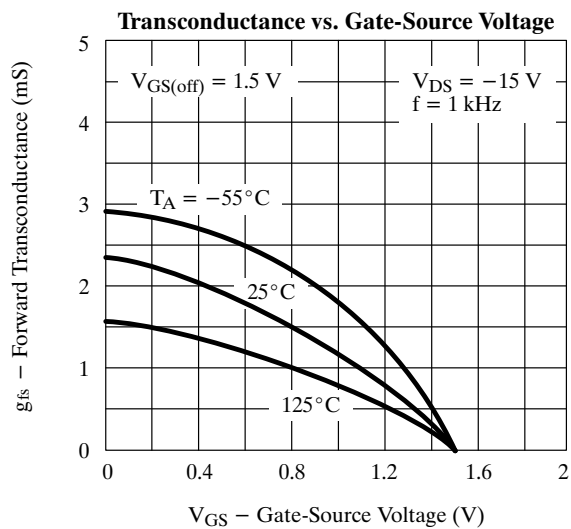
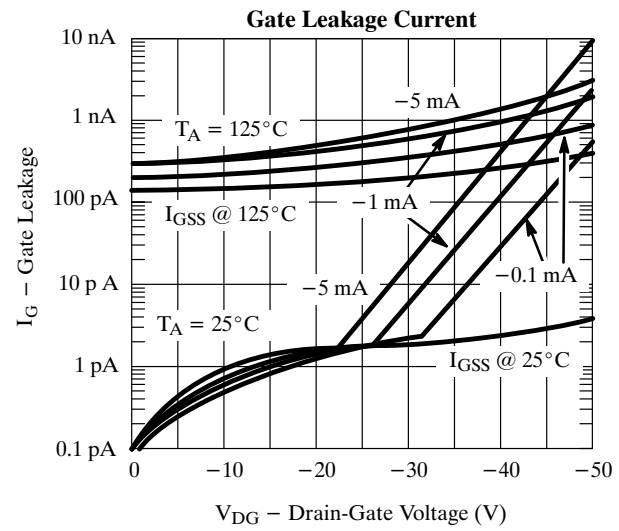
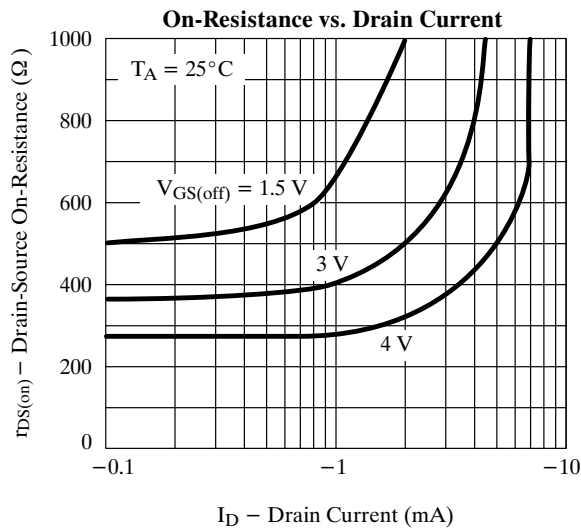
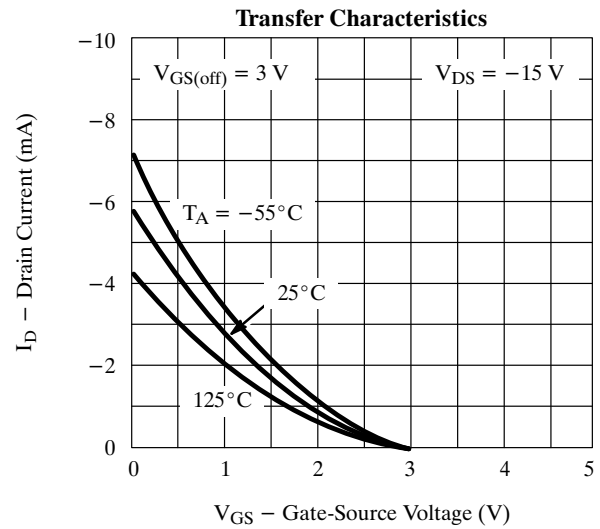
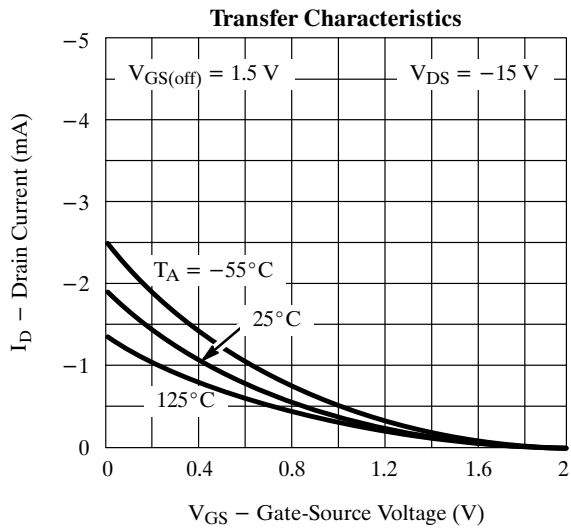
- a. $T_A = 25^\circ C$ unless otherwise noted.
- b. Typical values are for DESIGN AID ONLY, not guaranteed nor subject to production testing.
- c. Pulse test: $PW \leq 300 \mu s$ duty cycle $\leq 2\%$.

PSCIB

Typical Characteristics



Typical Characteristics (Cont'd)



Typical Characteristics (Cont'd)

