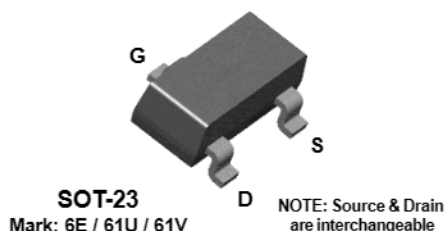
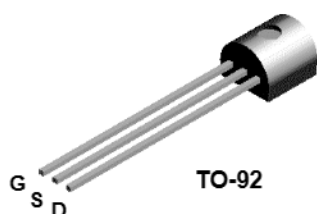


2N5460
2N5461
2N5462

MMBF5460
MMBF5461
MMBF5462



P-Channel General Purpose Amplifier

This device is designed primarily for low level audio and general purpose applications with high impedance signal sources. Sourced from Process 89.

Absolute Maximum Ratings*

TA = 25°C unless otherwise noted

Symbol	Parameter	Value	Units
V _{DG}	Drain-Gate Voltage	- 40	V
V _{GS}	Gate-Source Voltage	40	V
I _{GF}	Forward Gate Current	10	mA
T _J , T _{stg}	Operating and Storage Junction Temperature Range	-55 to +150	°C

*These ratings are limiting values above which the serviceability of any semiconductor device may be impaired.

NOTES:

- 1) These ratings are based on a maximum junction temperature of 150 degrees C.
- 2) These are steady state limits. The factory should be consulted on applications involving pulsed or low duty cycle operations.

Thermal Characteristics

TA = 25°C unless otherwise noted

Symbol	Characteristic	Max		Units
		2N5460-5462	*MMBF5460-5462	
P _D	Total Device Dissipation Derate above 25°C	350 2.8	225 1.8	mW mW/°C
R _{θJC}	Thermal Resistance, Junction to Case	125		°C/W
R _{θJA}	Thermal Resistance, Junction to Ambient	357	556	°C/W

*Device mounted on FR-4 PCB 1.6" X 1.6" X 0.06."

2N5460 / 5461 / 5462 / MMBF5460 / MMBF5461 / MMBF5462

P-Channel General Purpose Amplifier

(continued)

Electrical Characteristics

TA = 25°C unless otherwise noted

Symbol	Parameter	Test Conditions	Min	Typ	Max	Units
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OFF CHARACTERISTICS

V _{(BR)GSS}	Gate-Source Breakdown Voltage	I _G = 10 μ A, V _{DS} = 0	40			V
I _{GSS}	Gate Reverse Current	V _{GS} = 20 V, V _{DS} = 0 V _{GS} = 20 V, V _{DS} = 0, T _A = 100°C			5.0 1.0	nA μ A
V _{GS(off)}	Gate-Source Cutoff Voltage	V _{DS} = 15 V, I _D = 1.0 μ A 5460 5461 5462	0.75 1.0 1.8		6.0 7.5 9.0	V V V
V _{GS}	Gate-Source Voltage	V _{DS} = 15 V, I _D = 0.1 mA V _{DS} = 15 V, I _D = 0.2 mA V _{DS} = 15 V, I _D = 0.4 mA 5460 5461 5462	0.5 0.8 1.5		4.0 4.5 6.0	V V V

ON CHARACTERISTICS

I _{DSS}	Zero-Gate Voltage Drain Current*	V _{DS} = 15 V, V _{GS} = 0 5460 5461 5462	- 1.0 - 2.0 - 4.0		- 5.0 - 9.0 - 16	mA mA mA
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SMALL SIGNAL CHARACTERISTICS

g _{fs}	Forward Transfer Conductance	V _{DS} = 15 V, V _{GS} = 0, f = 1.0 kHz 5460 5461 5462	1000 1500 2000		4000 5000 6000	μ mhos μ mhos μ mhos
g _{os}	Output Conductance	V _{DS} = 15 V, V _{GS} = 0, f = 1.0 kHz			75	μ mhos
C _{iss}	Input Capacitance	V _{DS} = 15 V, V _{GS} = 0, f = 1.0 MHz		5.0	7.0	pF
C _{rss}	Reverse Transfer Capacitance	V _{DS} = 15 V, V _{GS} = 0, f = 1.0 MHz		1.0	2.0	pF
NF	Noise Figure	V _{DS} = 15 V, V _{GS} = 0, R _G = 1.0 megohm, f = 100 Hz, BW = 1.0 Hz		1.0	2.5	dB
e _n	Equivalent Short-Circuit Input Noise Voltage	V _{DS} = 15 V, V _{GS} = 0, f = 100 Hz, BW = 1.0 Hz		60	115	nV/ $\sqrt{\text{Hz}}$

*Pulse Test: Pulse Width $\leq$ 300 ms, Duty Cycle $\leq$ 2%

2N5460 / 5461 / 5462 / MMBF5460 / MMBF5461 / MMBF5462

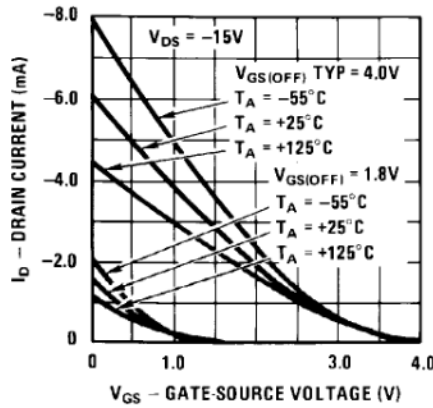
P-Channel General Purpose Amplifier

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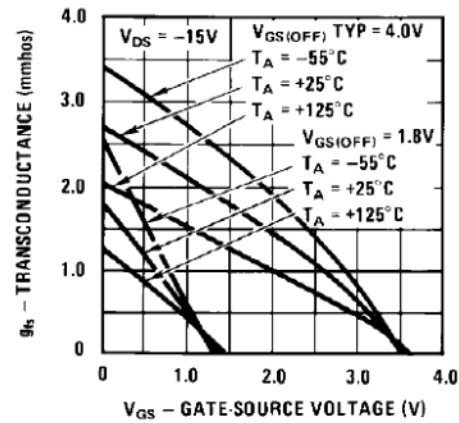
2N5460 / 5461 / 5462 / MMBF5460 / MMBF5461 / MMBF5462

Typical Characteristics (continued)

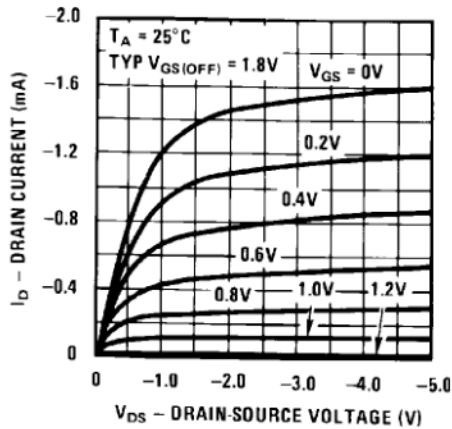
Transfer Characteristics



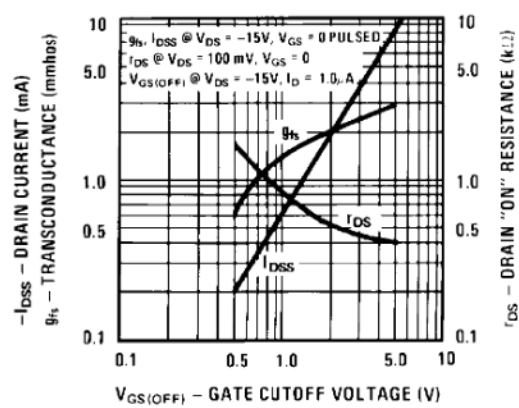
Transfer Characteristics



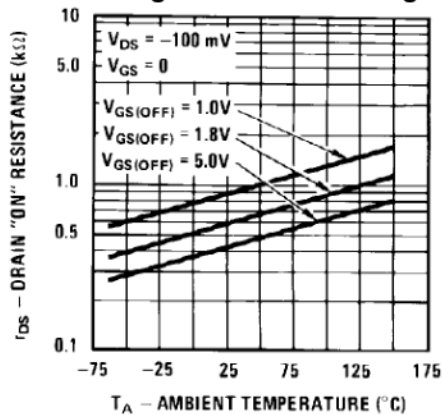
Common Drain-Source



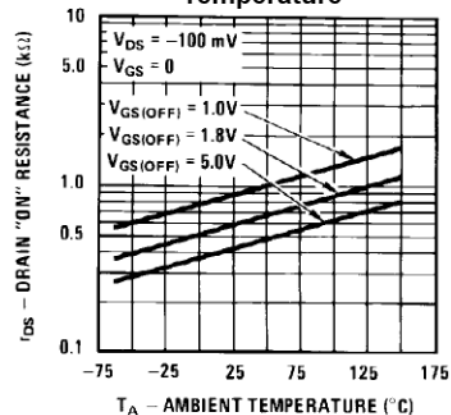
Parameter Interactions



Leakage Current vs. Voltage



Channel Resistance vs. Temperature

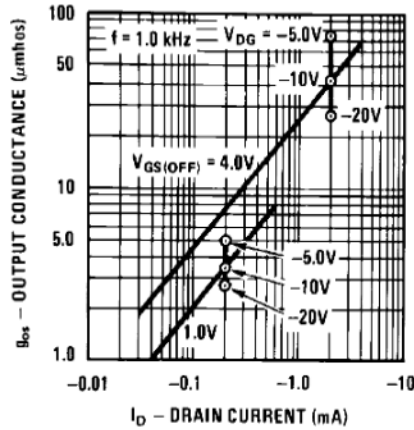


P-Channel General Purpose Amplifier

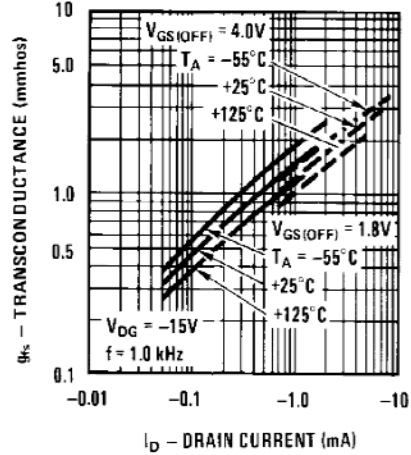
(continued)

Typical Characteristics (continued)

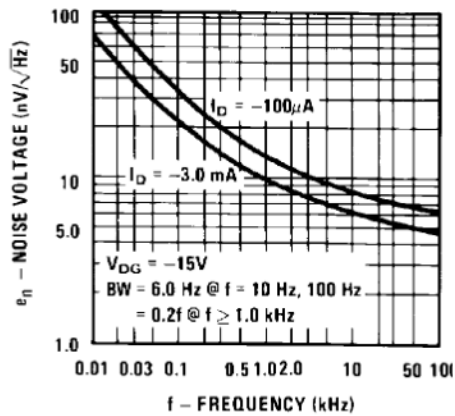
Output Conductance vs.
Drain Current



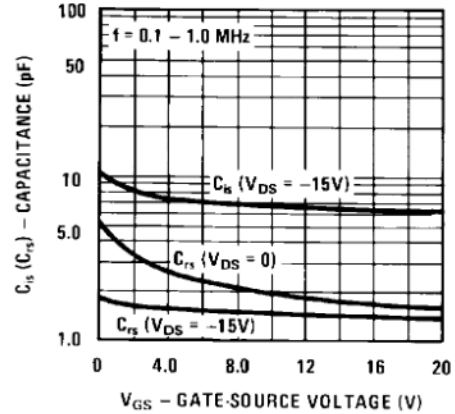
Transconductance vs.
Drain Current



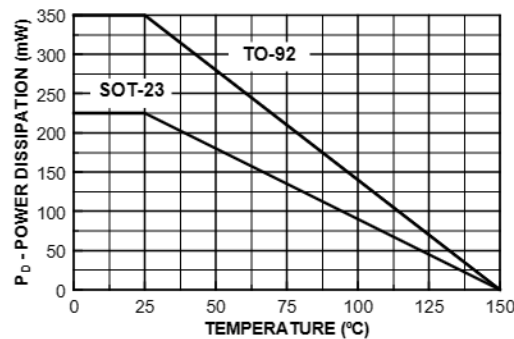
Noise Voltage vs. Frequency



Capacitance vs. Voltage



Power Dissipation vs.
Ambient Temperature



2N5460 / 5461 / 5462 / MMBF5460 / MMBF5461 / MMBF5462

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