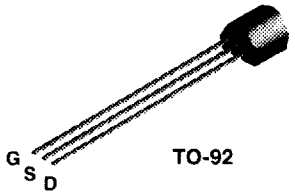
National Semiconductor

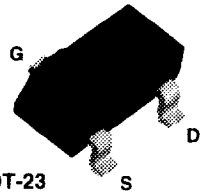
Discrete POWER & Signal Technologies

J201
J202



TO-92

MMBFJ201
MMBFJ202



SOT-23
Mark: 62P / 62Q

N-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 52.

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	50	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
		J201 / J202	*MMBFJ201	
P_D	Total Device Dissipation Derate above 25°C	625 5.0	350 2.8	mW mW/°C
$R_{\theta JC}$	Thermal Resistance, Junction to Case	83.3		°C/W
$R_{\theta JA}$	Thermal Resistance, Junction to Ambient	200	357	°C/W

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

N-Channel General Purpose Amplifier
(continued)

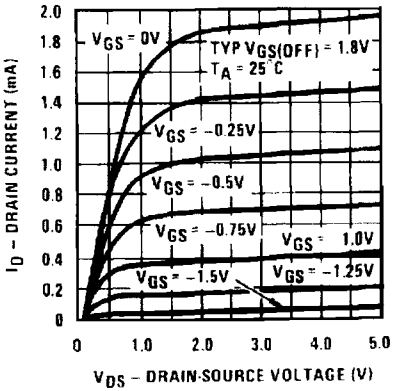
Electrical Characteristics
TA = 25°C unless otherwise noted

Symbol	Parameter	Test Conditions		Min	Max	Units
OFF CHARACTERISTICS						
$V_{(BR)GSS}$	Gate-Source Breakdown Voltage	I_G = - 1.0 µA, V_{DS} = 0		- 40		V
I_{GSS}	Gate Reverse Current	V_{GS} = - 20 V, V_{DS} = 0			-100	pA
$V_{GS(off)}$	Gate-Source Cutoff Voltage	V_{DS} = 20 V, I_D = 10 nA	**J201**	- 0.3	- 1.5	V
			J202	- 0.8	- 4.0	V
ON CHARACTERISTICS						
I_{DSS}	Zero-Gate Voltage Drain Current*	V_{DS} = 20 V, I_{GS} = 0	**J201**	0.2	1.0	mA
			J202	0.9	4.5	mA
SMALL SIGNAL CHARACTERISTICS						
y_{fs}	Forward Transfer Admittance	V_{DS} = 20, f = 1.0 kHz	**J201**	500		µmhos
			J202	1000		µmhos

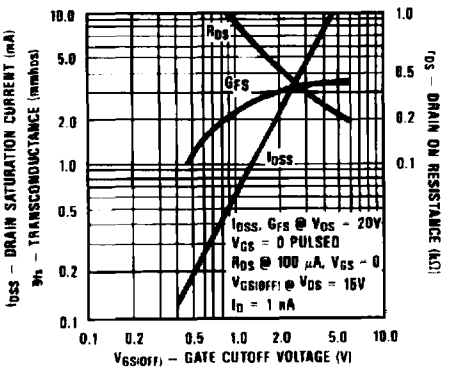
*Pulse Test: Pulse Width ≤ 300 µS

Typical Characteristics

Common Drain-Source



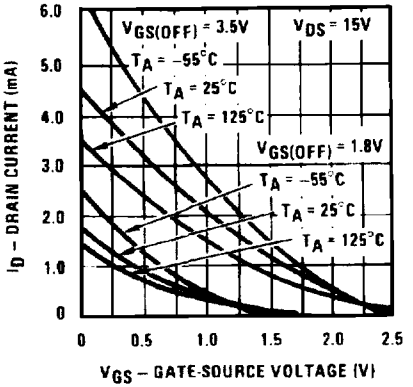
Parameter Interactions



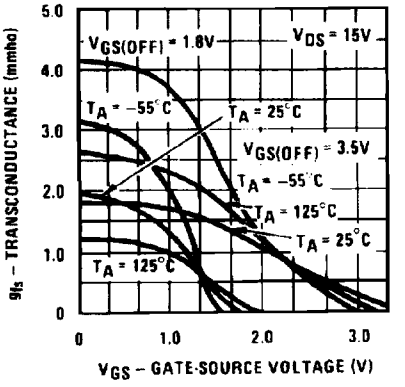
N-Channel General Purpose Amplifier
(continued)

Typical Characteristics (continued)

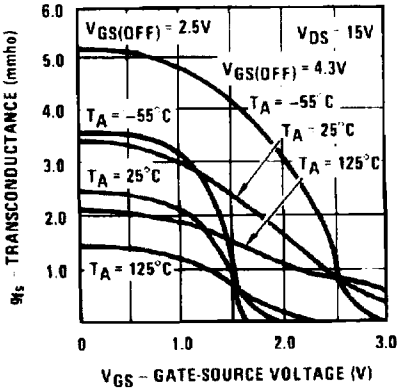
Transfer Charactersitics



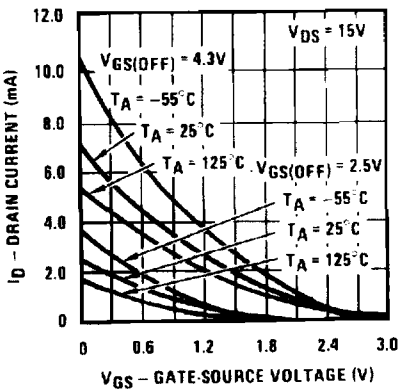
Transfer Characteristics



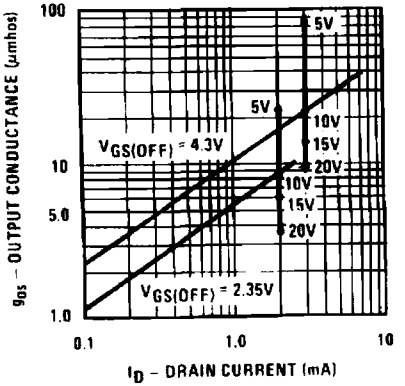
Transfer Characteristics



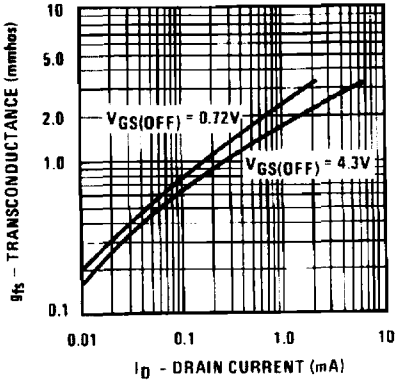
Transfer Characteristics



Output Conductance vs. Drain Current

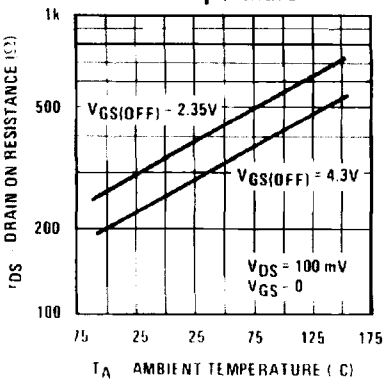


Transconductance vs. Drain Current

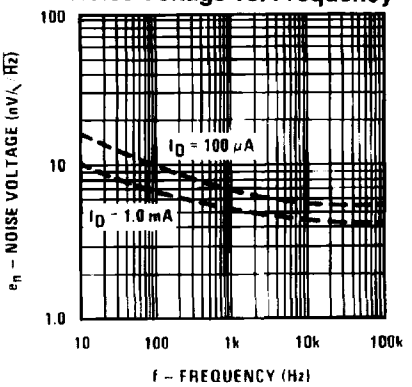


Typical Characteristics (continued)

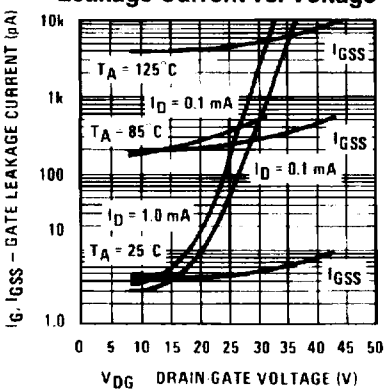
Channel Resistance vs. Temperature



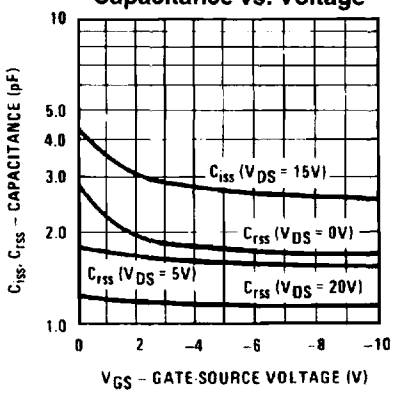
Noise Voltage vs. Frequency



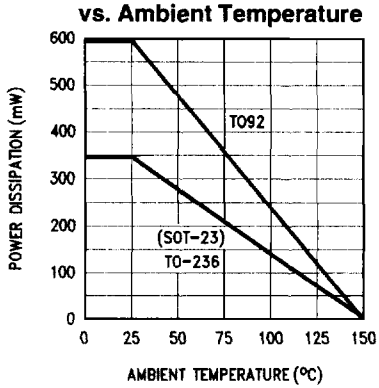
Leakage Current vs. Voltage



Capacitance vs. Voltage



Total Power Dissipation vs. Ambient Temperature



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