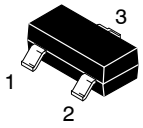
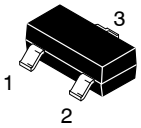
N-Channel General-Purpose Amplifier

MMBFJ201, MMBFJ202



SOT−23 (TO−236)
CASE 318−08



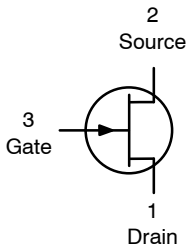
SOT−23
CASE 318BM

Description

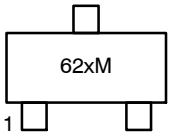
This device is designed primarily for low level audio and general−purpose applications with high impedance signal sources. Sourced from process 52.

Applications

- These are Pb−Free Devices



MARKING DIAGRAM



62x = Specific Device Code
x = P or Q
M = Date Code

ORDERING INFORMATION

See detailed ordering and shipping information on page 4 of this data sheet.

ABSOLUTE MAXIMUM RATINGS (T_A = 25°C unless otherwise noted) (Note 1, 2)

Symbol	Parameter	Value	Unit
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

Stresses exceeding those listed in the Maximum Ratings table may damage the device. If any of these limits are exceeded, device functionality should not be assumed, damage may occur and reliability may be affected.

1. These ratings are based on a maximum junction temperature of 150°C.
2. These are steady−state limits. **onsemi** should be consulted on applications involving pulsed or low−duty−cycle operations.

THERMAL CHARACTERISTICS (T_A = 25°C unless otherwise noted) (Note 3)

Symbol	Parameter	Max	Unit
P_D	Total Device Dissipation	350	mW
	Derate Above 25°C	2.8	mW/°C
$R_{\theta JA}$	Thermal Resistance, Junction−to−Ambient	357	°C/W

3. Device mounted on FR−4 PCB 36 mm x 18 mm x 1.5 mm; mounting pad for the collector lead minimum 6 cm^2.

ELECTRICAL CHARACTERISTICS (T_A = 25°C unless otherwise noted)

Symbol	Parameter	Test Condition		Min	Max	Unit
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 Cut−Off Voltage	V_{DS} = 20 V, I_D = 10 nA	MMBFJ201	−0.3	−1.5	V
			MMBFJ202	−0.8	−4.0	
ON CHARACTERISTICS						
I_{DSS}	Zero−Gate Voltage Drain Current (Note 4)	V_{DS} = 20 V, I_{GS} = 0	MMBFJ201	0.2	1.0	mA
			MMBFJ202	0.9	4.5	
SMALL SIGNAL CHARACTERISTICS						
y_{FS}	Forward Transfer Admittance	V_{DS} = 20 V, f = 1.0 kHz	MMBFJ201	500		μmhos
			MMBFJ202	1000		

Product parametric performance is indicated in the Electrical Characteristics for the listed test conditions, unless otherwise noted. Product performance may not be indicated by the Electrical Characteristics if operated under different conditions.

4. Pulse test: pulse width ≤ 300 μs, duty cycle ≤ 2%.

TYPICAL PERFORMANCE CHARACTERISTICS

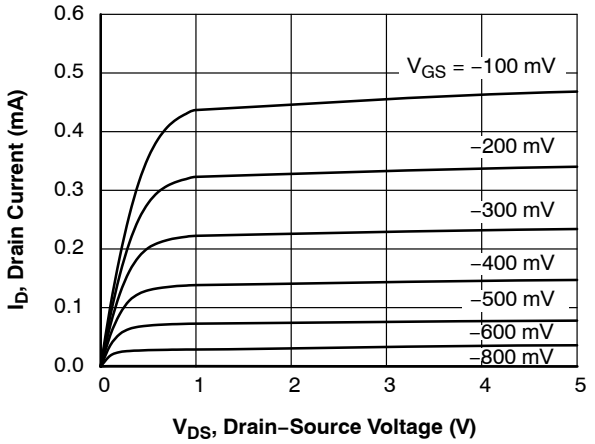


Figure 1. Common Drain−Source (MMBJF201)

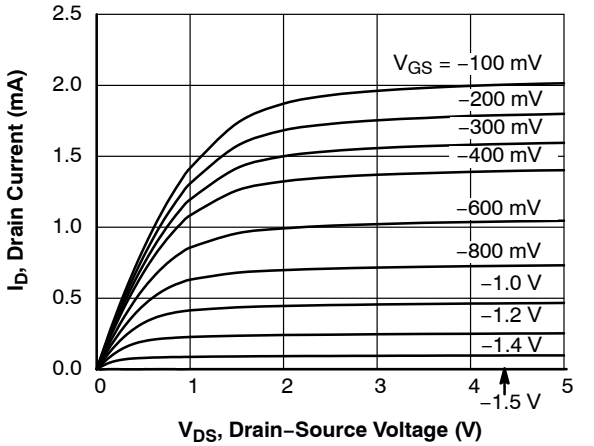


Figure 2. Common Drain−Source (MMBJF202)

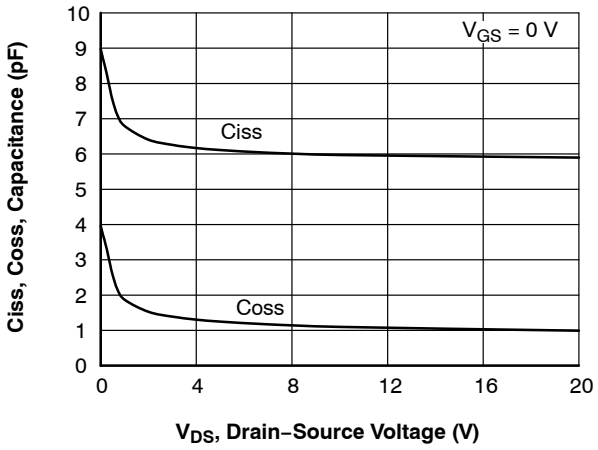


Figure 3. Capacitance vs. Voltage (MMBJF201)

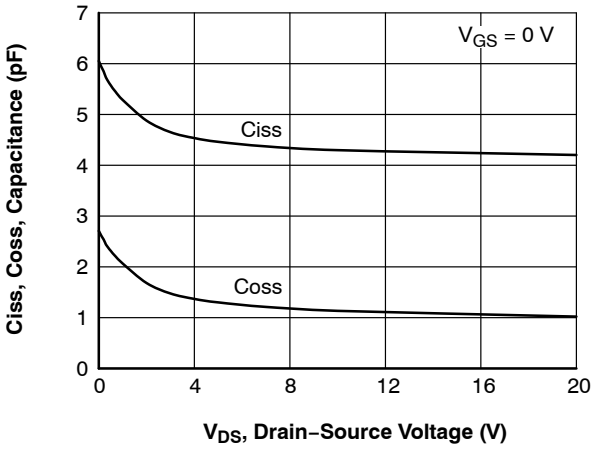


Figure 4. Capacitance vs. Voltage (MMBJF202)

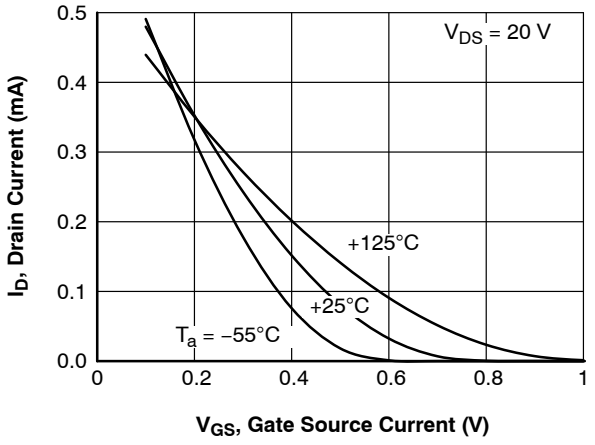


Figure 5. Transfer Characteristics (MMBFJ201)

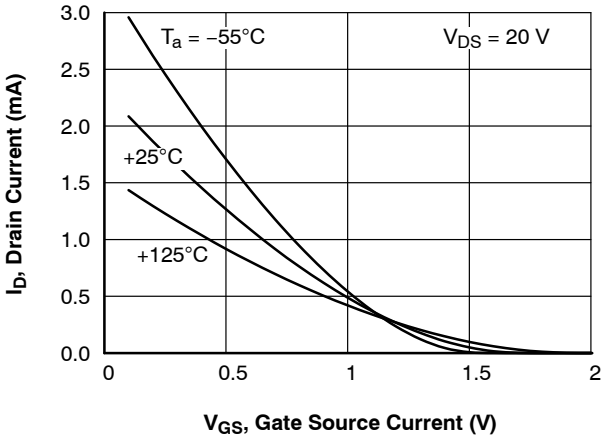


Figure 6. Transfer Characteristics (MMBFJ202)

TYPICAL PERFORMANCE CHARACTERISTICS (continued)

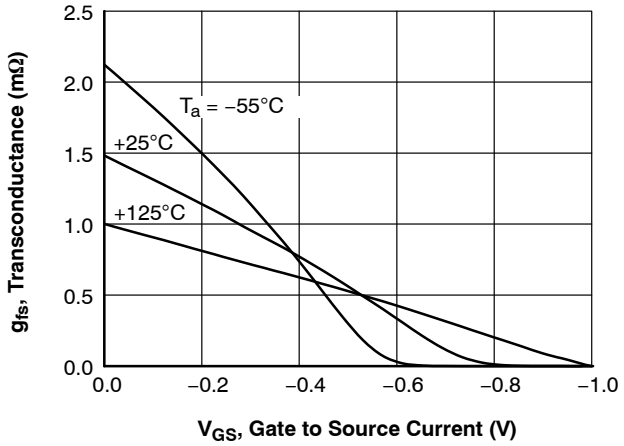


Figure 7. Transfer Characteristics (MMBFJ201)

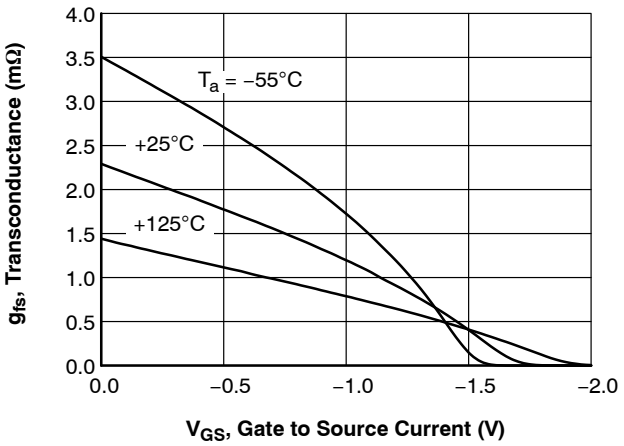


Figure 8. Transfer Characteristics (MMBFJ202)

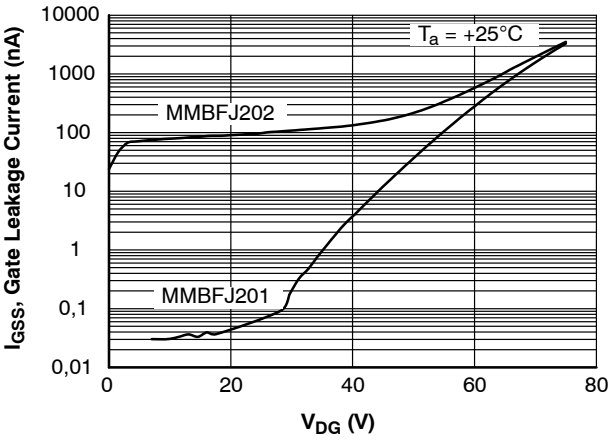


Figure 9. Leakage Current vs. Voltage

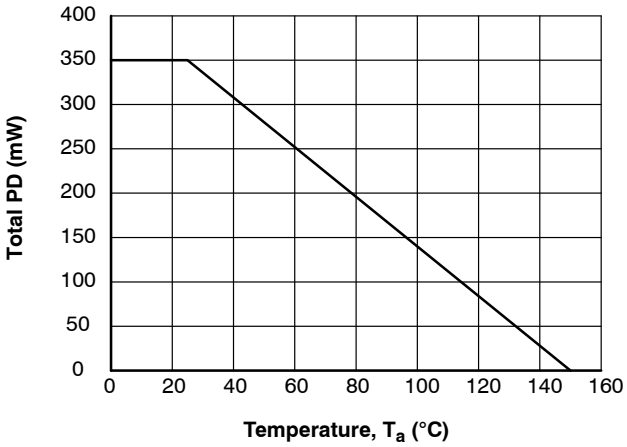


Figure 10. Total PD vs. Temperature

ORDERING INFORMATION

Part Number	Top Mark	Package	Shipping†
MMBFJ201	62P	SOT−23 (Pb−Free)	3000 / Tape & Reel
MMBFJ202	62Q	SOT−23 (TO−236) (Pb−Free)	3000 / Tape & Reel

†For information on tape and reel specifications, including part orientation and tape sizes, please refer to our Tape and Reel Packaging Specifications Brochure, BRD8011/D.

ADDITIONAL INFORMATION

TECHNICAL PUBLICATIONS:
Technical Library: www.onsemi.com/design/resources/technical−documentation
onsemi Website: www.onsemi.com

ONLINE SUPPORT: www.onsemi.com/support
For additional information, please contact your local Sales Representative at
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