

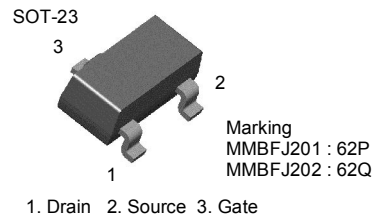
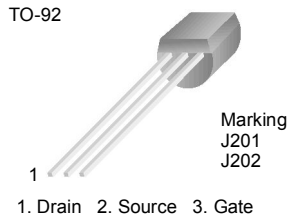


THE DATASHEET OF MMBFJ203



J201 - J202 / MMBFJ201 - MMBFJ203 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* $T_a=25^\circ\text{C}$ 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 ~ 150	$^\circ\text{C}$

* 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°C .
- 2) These are steady state limits. The factory should be consulted on applications involving pulsed or low duty cycle operations.

Thermal Characteristics* $T_a=25^\circ\text{C}$ unless otherwise noted

Symbol	Parameter	Value		Units
		J201 - J202	MMBFJ201 - MMBFJ203	
P_D	Total Device Dissipation	625	350	W
	Derate above 25°C	5.0	2.8	mW/ $^\circ\text{C}$
$R_{\theta JC}$	Thermal Resistance, Junction to Case	125		$^\circ\text{C}/\text{W}$
$R_{\theta JA}$	Thermal Resistance, Junction to Ambient	357	556	$^\circ\text{C}/\text{W}$

* Device mounted on FR-4 PCB $1.6'' \times 1.6'' \times 0.06''$

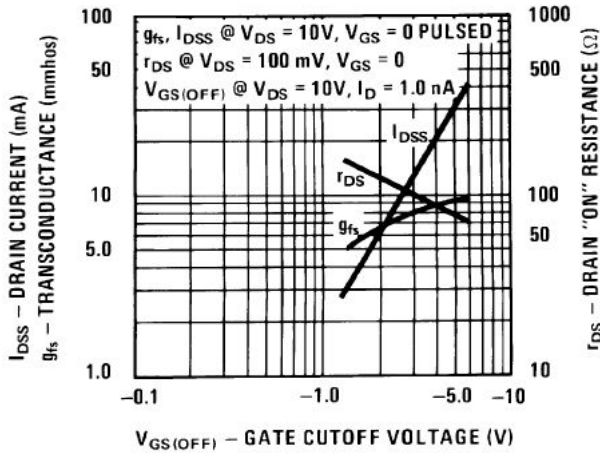
Electrical Characteristics * $T_C = 25^\circ\text{C}$ unless otherwise noted

Symbol	Parameter	Conditions	Min.	Max	Units	
Off Characteristics						
$V_{(BR)GSS}$	Gate-Source Breakdwon Voltage	$I_G = -1\mu\text{A}, V_{DS} = 0$	-40		V	
I_{GSS}	Gate Reverse Current	$V_{GS} = -20\text{V}, V_{DS} = 0$		-100	pA	
$V_{GS(off)}$	Gate-Source Cutoff Voltage	$V_{DS} = 20\text{V}, I_D = 10\text{nA}$	201	-0.3	-1.5	V
			202	-0.8	-4	
			203	-2	-10	
On Characteristics						
I_{DSS}	Zero-Gate Voltage Drain Current *	$V_{DS} = 20\text{V}, I_{GS} = 0$	201	0.2	1.0	mA
			202	0.9	4.5	
			203	4	20	
Small Signal Characteristics						
y_{FS}	Forward Transfer Admittance	$V_{DS} = 20\text{V}, f = 1.0\text{kHz}$	201	500		μmhos
			202	1000		
			203	1500		

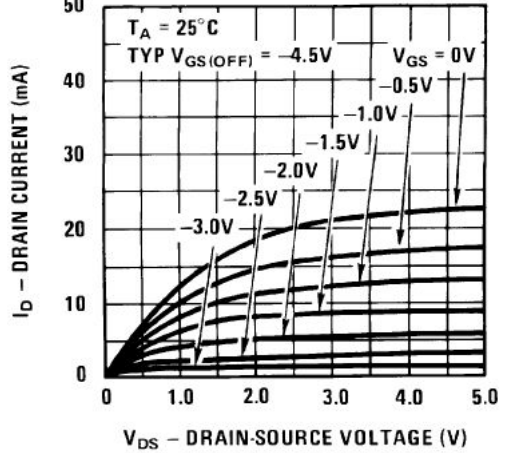
* Pulse Test: Pulse Width $\leq 300\text{ms}$, Duty Cycle $\leq 2.0\%$

Typical Characteristics

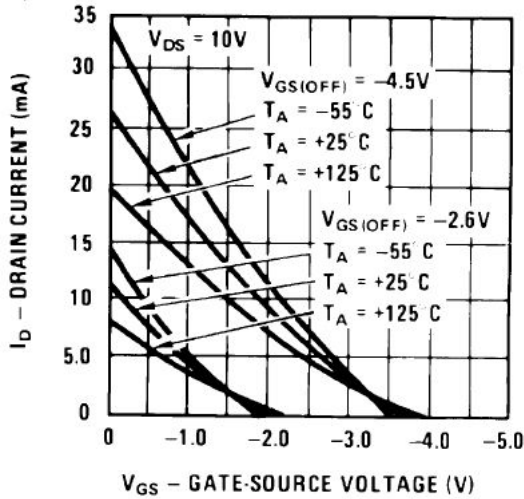
Parameter Interactions



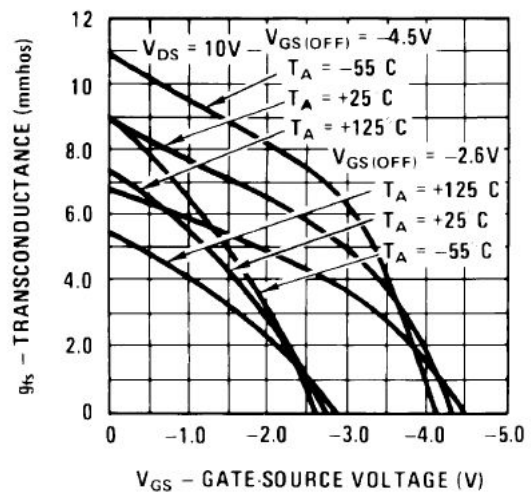
Common Drain-Source



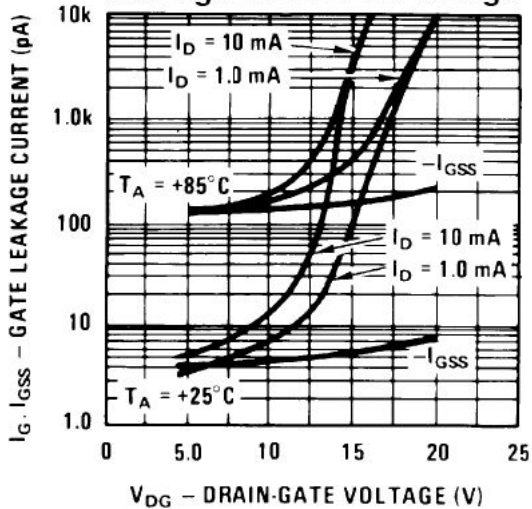
Transfer Characteristics



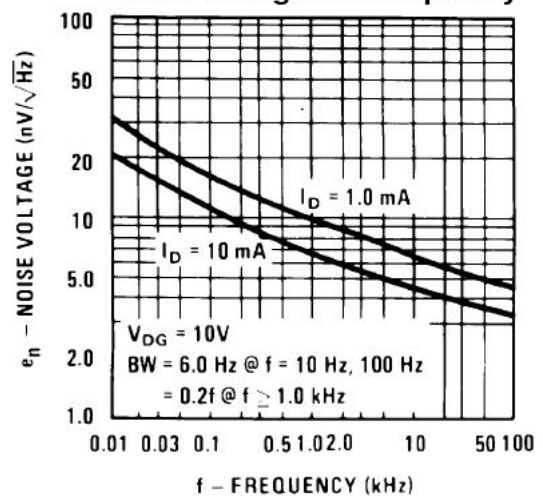
Transfer Characteristics



Leakage Current vs. Voltage

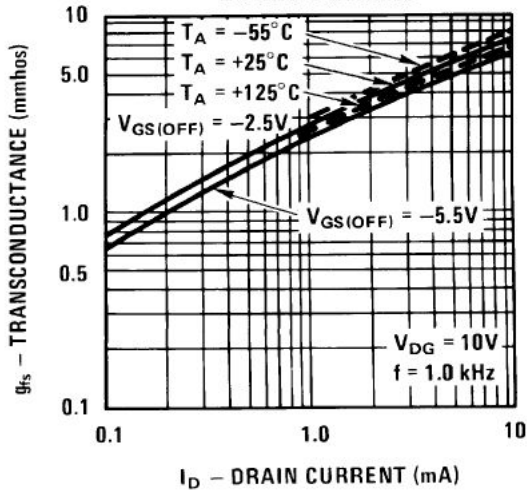


Noise Voltage vs. Frequency

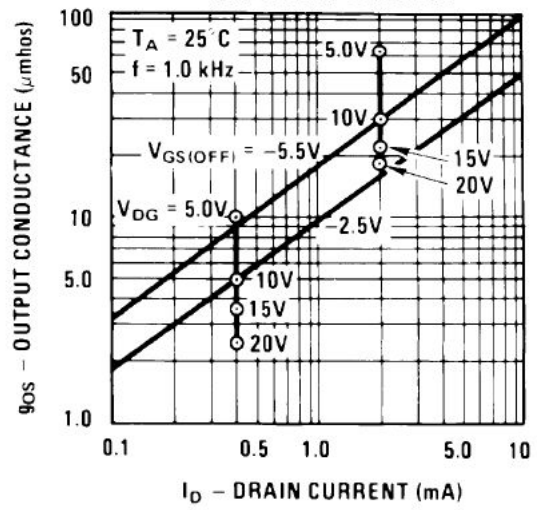


Typical Characteristics (Continued)

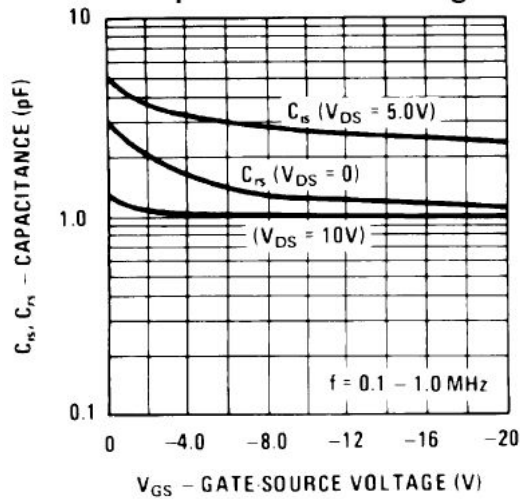
Transconductance vs. Drain Current



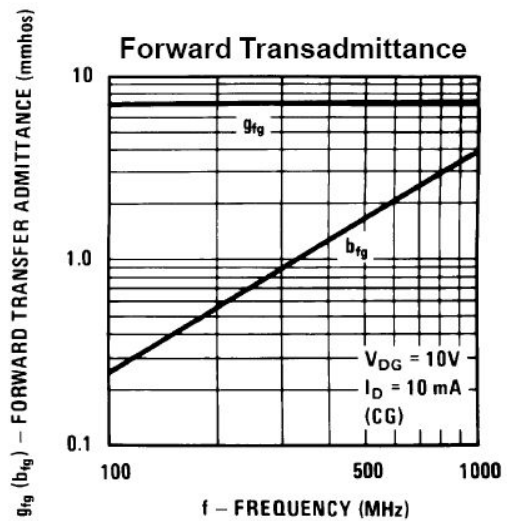
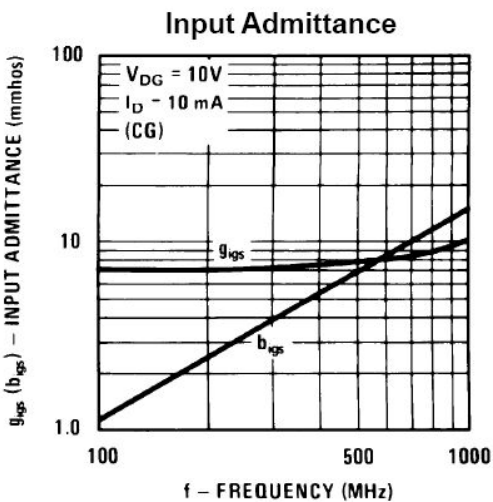
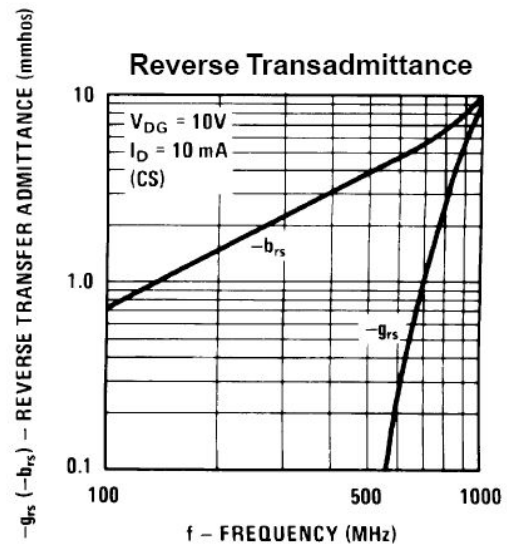
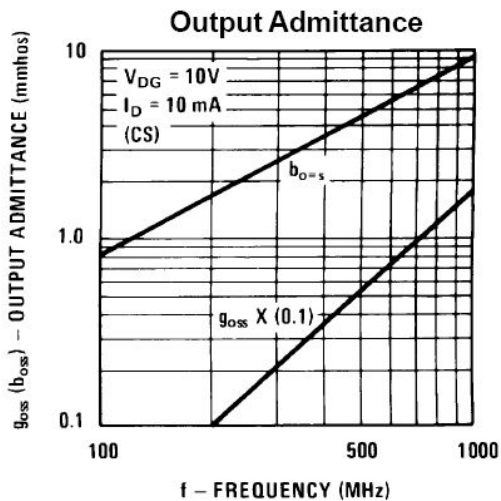
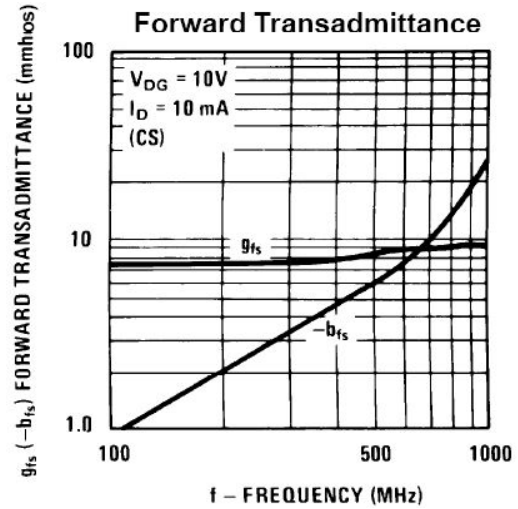
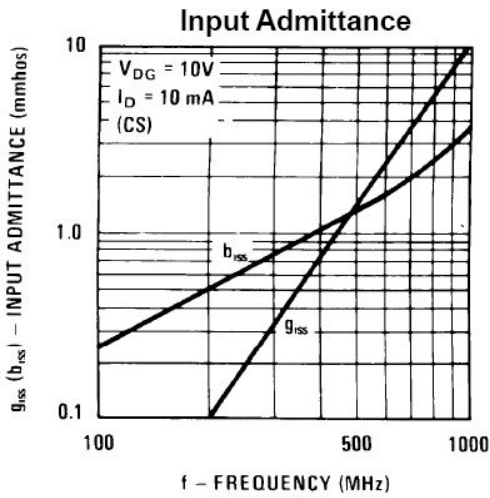
Output Conductance vs. Drain Current



Capacitance vs. Voltage

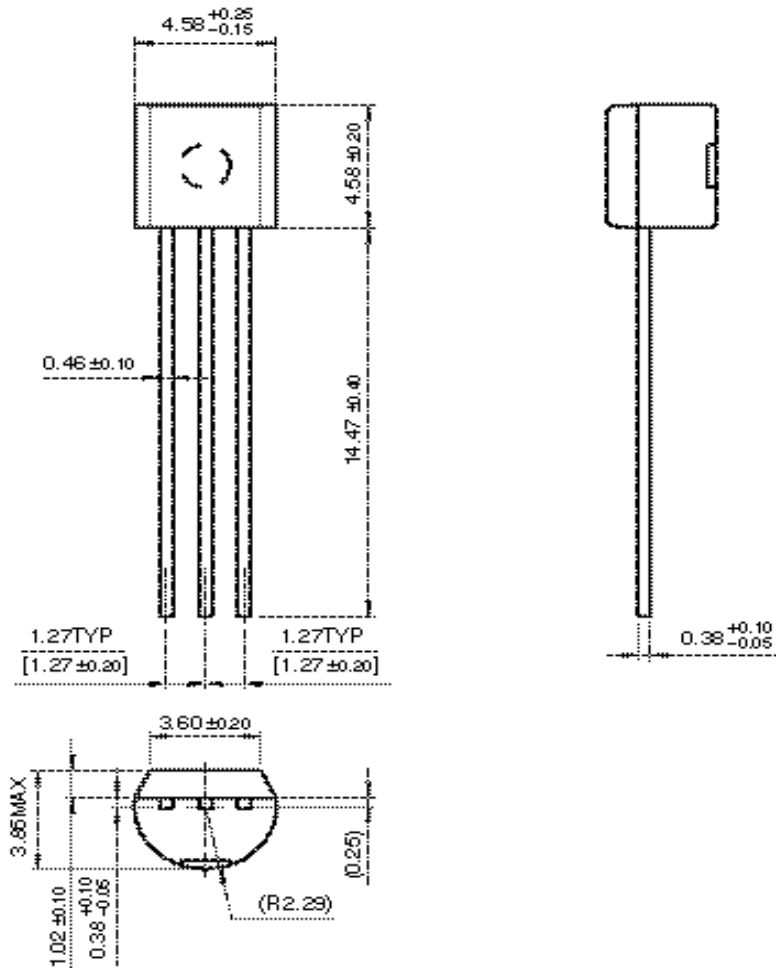


Typical Characteristics (Continued)



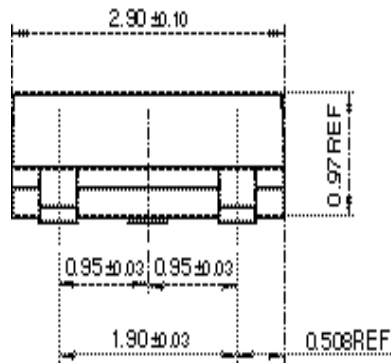
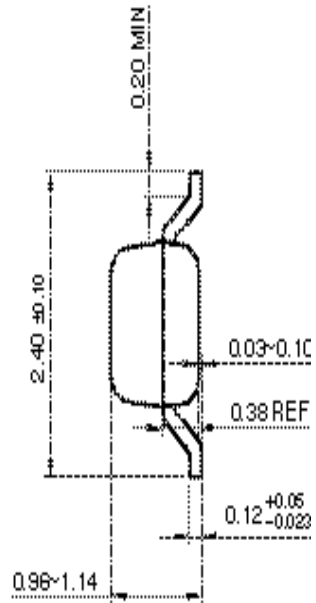
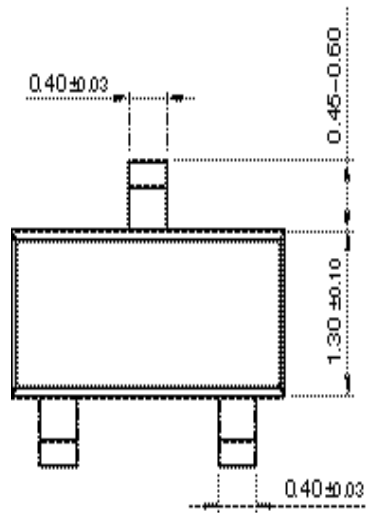
Mechanical Dimensions

TO-92



Mechanical Dimensions

SOT-23




Dimensions in Millimeters



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