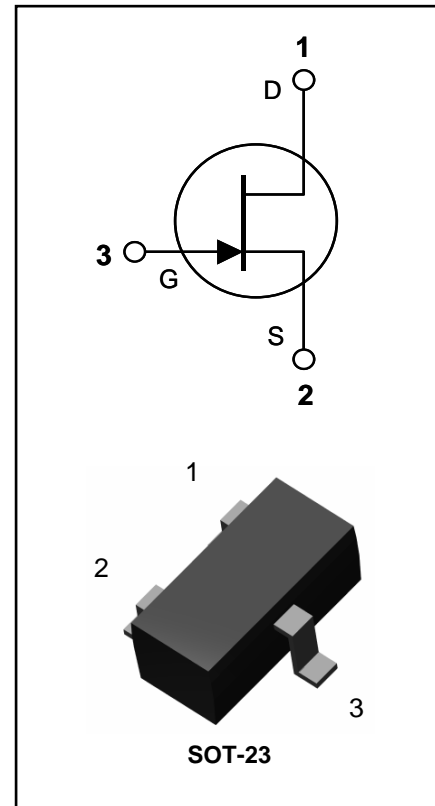




# J-FET HIGH FREQUENCY AMPLIFIER TRANSISTOR

## N-CHANNEL

For VHF/UHF Applications



Note: Drain and Source are interchangeable.

### DEVICE MARKING

MMBFJ309 = B9J; MMBFJ310 = B1J

### ELECTRICAL RATINGS

Rating	Symbol	Value	Units
Drain to Source Voltage	$V_{DS}$	25	V
Gate to Source Voltage	$V_{GS}$	25	V
Gate Current	$I_G$	10	mAdc

### THERMAL RATINGS

Rating	Symbol	Value	Units
Power Dissipation (Note 1)	$P_d$	225	mW
Thermal Resistance - Junction to Ambient (Note 1)	$R_{\theta JA}$	556	°C/W
Operating Temperature Range	$T_J$	-55 to +150	°C
Storage Temperature Range	$T_{stg}$	-55 to +150	°C

Note 1: Device mounted on FR-5 board 1.0 x 0.75 x 0.062 in. with recommended minimum pad layout


**ELECTRICAL CHARACTERISTICS** ( $T_J = 25^\circ\text{C}$ , unless otherwise noted)

**OFF CHARACTERISTICS**

Parameter	Symbol	Conditions	Min	Typical	Max	Units
Gate-Source Breakdown Voltage	$V_{(BR)GSS}$	$I_G = -1.0 \mu\text{A}$ , $V_{DS} = 0$	-25	-	-	V
Gate Reverse Current	$I_{GSS}$	$V_{GS} = -15\text{Vdc}$	-	-	-1.0	nA
		$V_{GS} = -15\text{Vdc}$ , $T_J = 125^\circ\text{C}$	-	-	-1.0	$\mu\text{A}$
Gate-Source Cutoff Voltage	$V_{GS(off)}$	$V_{DS} = 10\text{Vdc}$ $I_{DS} = 1.0\text{nAdc}$	-1.0	-	-4.0	V
			-2.0	-	-6.5	V

**ON CHARACTERISTICS**

Parameter	Symbol	Conditions	Min	Typical	Max	Units
Zero Gate Current Drain Current	$I_{DSS}$	$V_{DS} = 10\text{Vdc}$ $V_{GS} = 0\text{Vdc}$	12	-	30	mA
			24	-	60	mA
Gate-Source Forward Voltage	$V_{GS(f)}$	$I_G = 1.0 \text{mA}$ , $V_{DS} = 0$	-	-	1.0	V

**SMALL-SIGNAL CHARACTERISTICS**

Parameter	Symbol	Conditions	Min	Typical	Max	Units
Forward Transfer Admittance	$ Y_{fs} $	$I_D = 10 \text{mA}$ , $V_{DS} = 10 \text{V}$ $f = 1.0 \text{kHz}$	8.0	-	18	mmhos
Output Admittance	$ y_{os} $	$I_D = 10 \text{mA}$ , $V_{DS} = 10 \text{V}$ $f = 1.0 \text{kHz}$	-	-	250	$\mu\text{mhos}$
Input Capacitance	$C_{iss}$	$V_{GS} = -10\text{V}$ , $V_{DS} = 0\text{V}$ $f = 1.0 \text{MHz}$	-	-	5.0	pF
Reverse Transfer Capacitance	$C_{rss}$	$V_{GS} = -10\text{V}$ , $V_{DS} = 0\text{V}$ $f = 1.0 \text{MHz}$	-	-	2.5	pF
Equivalent Short-Circuit Input Noise Voltage	$\bar{e}_n$	$I_D = 10 \text{mA}$ , $V_{DS} = 10 \text{V}$ $f = 100 \text{Hz}$	-	10	-	$\text{nV} / \sqrt{\text{Hz}}$



## PACKAGE DIMENSIONS AND SUGGESTED PAD LAYOUT

