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Tel: +86-755-8981 8866 Fax: +86-755-8427 6832

Email & Skype: info@chipsmall.com Web: www.chipsmall.com

Address: A1208, Overseas Decoration Building, #122 Zhenhua RD., Futian, Shenzhen, China





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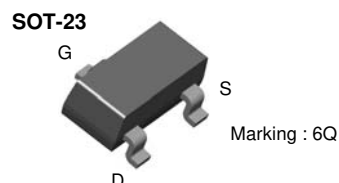
July 2011

# MMBFJ305

## N-Channel RF Amplifier

### Features

- This device is designed primarily for electronic switching applications such as low On Resistance analog switching.
- Sourced from process 50.



Note : Drain & Source are interchangeable.

### Absolute Maximum Ratings\* $T_A = 25^\circ\text{C}$ unless otherwise noted

Symbol	Parameter	Value	Units
$V_{DG}$	Drain-Gate Voltage	30	V
$V_{GS}$	Gate-Source Voltage	-30	V
$I_{GF}$	Forward Gate Current	10	mA
$T_J, T_{STG}$	Operating and Storage Junction Temperature Range	-55 to +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 degrees 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
$P_D$	Total Device Dissipation	225	mW
	Derate above $25^\circ\text{C}$	1.8	mW/ $^\circ\text{C}$
$R_{\theta JA}$	Thermal Resistance, Junction to Ambient	556	$^\circ\text{C}/\text{W}$

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

### Electrical Characteristics $T_A = 25^\circ\text{C}$ unless otherwise noted

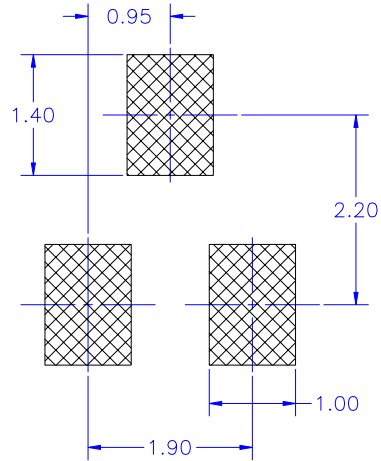
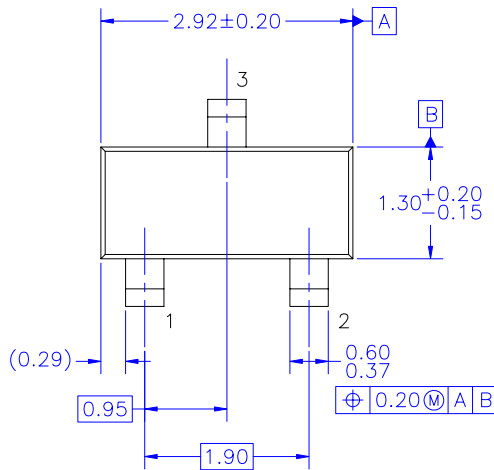
Symbol	Parameter	Conditions	Min.	Max.	Units
<b>Off Characteristics</b>					
$V_{(BR)GSS}$	Gate-Source Breakdown Voltage	$I_G = -1.0\mu\text{A}, V_{DS} = 0$	-30		V
$I_{GSS}$	Gate Reverse Current	$V_{GS} = -20\text{V}, V_{DS} = 0$		-100	pA
$V_{GS(off)}$	Gate-Source Cutoff Voltage	$V_{DS} = 15\text{V}, I_D = 1.0\text{nA}$	-0.5	-3.0	V
<b>On Characteristics</b>					
$I_{DSS}$	Zero-Gate Voltage Drain Current*	$V_{DS} = 15\text{V}, V_{GS} = 0$	1.0	8.0	mA
<b>Small Signal Characteristics</b>					
gfs	Forward Transfer Conductance	$V_{DS} = 15\text{V}, V_{GS} = 0, f = 1.0\text{kHz}$	3000		$\mu\text{mhos}$
gOSS	Output Conductance	$V_{DS} = 15\text{V}, V_{GS} = 0, f = 1.0\text{kHz}$		50	$\mu\text{mhos}$

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

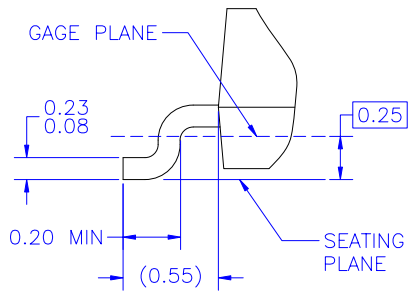
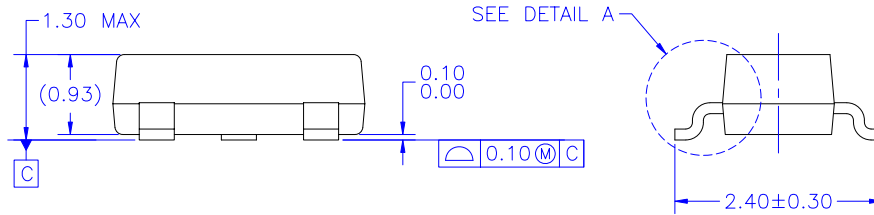


Physical Dimensions

SOT-23



LAND PATTERN RECOMMENDATION



DETAIL A  
SCALE: 2X

NOTES: UNLESS OTHERWISE SPECIFIED

- A) REFERENCE JEDEC REGISTRATION TO-236, VARIATION AB, ISSUE H.
- B) ALL DIMENSIONS ARE IN MILLIMETERS.
- C) DIMENSIONS ARE INCLUSIVE OF BURRS, MOLD FLASH AND TIE BAR EXTRUSIONS.
- D) DIMENSIONING AND TOLERANCING PER ASME Y14.5M - 1994.
- E) DRAWING FILE NAME: MA03DREV9

Dimensions in Millimeters



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- |                          |  |                                       |                      |
|--------------------------|--|---------------------------------------|----------------------|
| 2Cool™                   | FlashWriter®*                                  |                                       | Sync-Lock™           |
| AccuPower™               | FPS™   |                                       | SYSTEM GENERAL®*     |
| Auto-SPM™                | F-PFS™   |                                       | The Power Franchise® |
| AX-CAP™*                 | FRFET®   |                                       | the power™ franchise |
| BitSiC®                  | Global Power Resource™                         |                                       | TinyBoost™           |
| Build it Now™            | Green FPS™                                     |                                       | TinyBuck™            |
| CorePLUS™                | Green FPS™ e-Series™                           |                                       | TinyCalc™            |
| CorePOWER™               | Gmax™  |                                       | TinyLogic®           |
| CROSSVOLT™               | GTO™   |                                       | TINYOPTO™            |
| CTL™                     | IntelliMAX™                                    |                                       | TinyPower™           |
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| FAST®                    | OptoHiT™                                       |                                       | VisualMax™           |
| FastvCore™               | OPTOLOGIC®                                     |                                       | XS™                  |
| FETBench™                | OPTOPLANAR®                                    |                                       |                      |
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|                          |  | Power-SPM™                            |                      |
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|                          |  | PowerXS™                              |                      |
|                          |  | Programmable Active Droop™            |                      |
|                          |  | QFET®                                 |                      |
|                          |  | QS™                                   |                      |
|                          |  | Quiet Series™                         |                      |
|                          |  | RapidConfigure™                       |                      |
|                          |  |                                       |                      |
|                          |  | Saving our world, 1mW/W/kW at a time™ |                      |
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