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The RF Building Block Series **NPN Silicon Low Noise Transistor**

The MBC13901 is a high performance transistor fabricated using Motorola's 15 GHz f_T bipolar IC process. It is housed in the 4-lead SC-70 (SOT-343) surface mount plastic package resulting in a parasitic effect reduction and RF performance enhancements. The high performance at low power makes the MBC13901 suitable for front-end applications in portable wireless systems such as pagers, cellular and cordless phones.

- Low Noise Figure, NF_{min} = 1.0 dB (Typ) @1.0 GHz, 3.0 V and 3.0 mA
- Maximum Stable Gain, 22 dB @ 1.0 GHz, 3.0 V and 3.0 mA
- Output Third Order Intercept, OIP3 = 23 dBm @ 1.0 GHz, 3.0 V and
- Ultra small SOT-343 Surface Mount Package
- Available Only in Tape and Reel Packaging

MBC13901

RF NPN SILICON TRANSISTOR

 $f_{\tau} = 15 \text{ GHz}$

 $NF_{min} = 1.2 dB$

ICMAX = 20 mA

VCEO = 5.0 V

SEMICONDUCTOR **TECHNICAL DATA**



PLASTIC PACKAGE CASE 318M (SOT-343, Tape & Reel Only)

ORDERING INFORMATION

Device	Package	
MBC13901	SOT-343	

Go to: www.freescale.com



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NOTES

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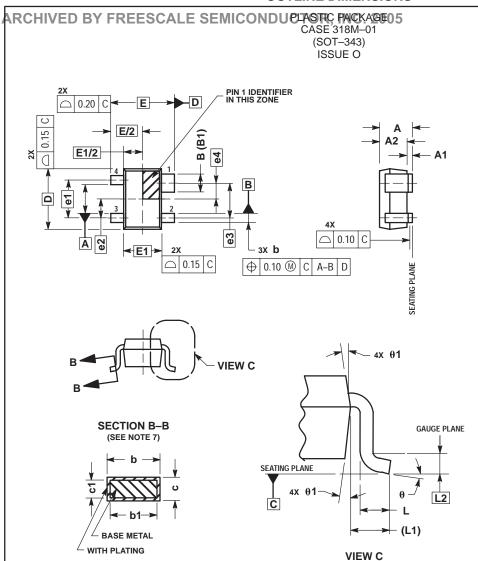
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OUTLINE DIMENSIONS



NOTES:

- DIMENSIONS ARE IN MILLIMETERS.
- INTERPRET DIMENSIONS AND TOLERANCES PER
 ASMF Y14 5M 1994
- DIMENSION D DOES NOT INCLUDE MOLD FLASH, PROTRUSIONS OR GATE BURRS. MOLD FLASH, PROTRUSIONS OR GATE BURRS SHALL NOT EXCEED 0.15mm PER END. DIMENSION E1 DOES NOT INCLUDE INTERLEAD FLASH OR PROTRUSION. INTERLEAD FLASH OR PROTRUSION SHALL NOT EXCEED 0.15mm PER SIDE.
- SHALL NOT EXCEED I. SIMIL PER SIDE.

 A DIMENSIONS D AND E1 ARE DETERMINED AT THE OUTMOST EXTREMES OF THE PLASTIC BODY EXCLUSIVE OF MOLD FLASH, TIE BAR BURRS, GATE BURRS AND INTERLEAD FLASH, BUT INCLUDING ANY MISMATCH BETWEEN THE TOP AND BOTTOM OF PLASTIC BODY.
- DATUMS A, B AND D TO BE DETERMINED 0.10mm
 FROM THE LEAD TIP.
- TERMINAL NUMBERS ARE SHOWN FOR
 REFERENCE ONLY
- REFERENCE ONLY.
 7. THESE DIMENSIONS APPLY TO THE FLAT SECTION OF THE LEAD BETWEEN 0.08mm AND 0.15mm FROM THE LEAD TIP.

	MILLIMETERS	
DIM	MIN	MAX
Α		1.10
A1	0.00	0.10
A2	0.80	1.00
b	0.25	0.40
b1	0.25	0.35
В	0.55	0.70
B1	0.55	0.65
С	0.10	0.25
c1	0.08	0.20
D	2.00 BSC	
E	2.10 BSC	
E1	1.25 BSC	
e1	1.30 BSC	
e2	0.65 BSC	
e3	1.15 BSC	
e4	0.50 BSC	
L	0.26	0.46
L1	0.425 REF	
L2	0.15 BSC	
θ	0 °	8°
θ1	4 °	10 °

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