



**MOTOROLA**

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*Product Preview*

**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.

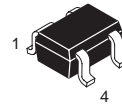
- Low Noise Figure,  $NF_{min} = 1.0$  dB (Typ) @ 1.0 GHz, 3.0 V and 3.0 mA
- Maximum Stable Gain, 22 dB @ 1.0 GHz, 3.0 V and 3.0 mA
- Output Third Order Intercept,  $OIP_3 = 23$  dBm @ 1.0 GHz, 3.0 V and 22 mA
- Ultra small SOT-343 Surface Mount Package
- Available Only in Tape and Reel Packaging

**MBC13901**

**RF NPN  
SILICON TRANSISTOR**

$f_T = 15$  GHz  
 $NF_{min} = 1.2$  dB  
 $I_{C_{MAX}} = 20$  mA  
 $V_{CEO} = 5.0$  V

**SEMICONDUCTOR  
TECHNICAL DATA**



(Scale 4:1)

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

**ORDERING INFORMATION**

Device	Package
MBC13901	SOT-343

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MBC13901

## NOTES

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MBC13901

## NOTES

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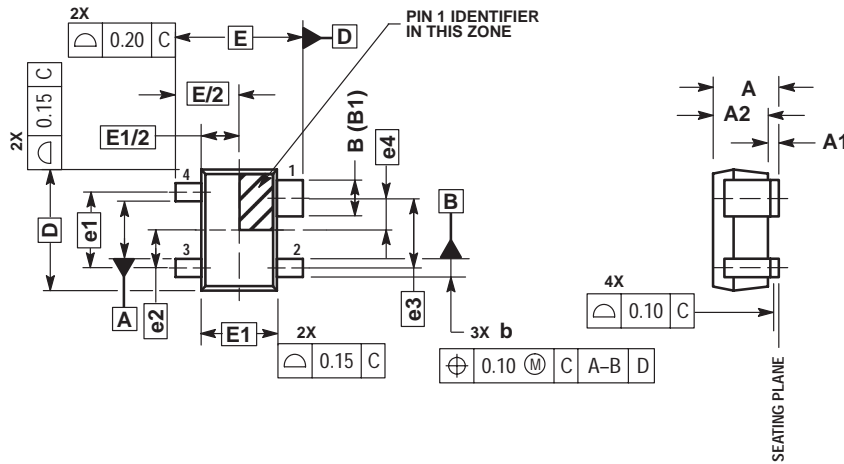
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## OUTLINE DIMENSIONS

ARCHIVED BY FREESCALE SEMICONDUCTOR, INC. PLASTIC PACKAGE 05

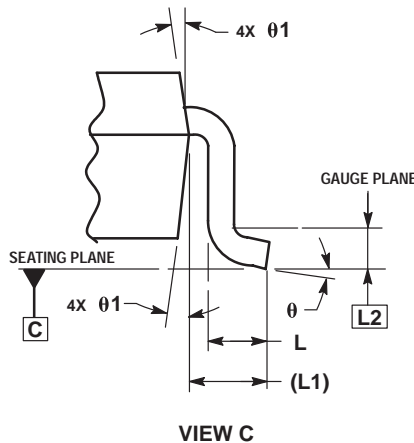
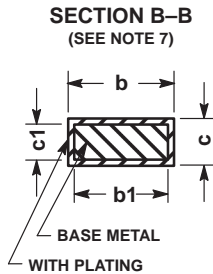
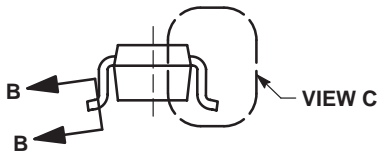
CASE 318M-01  
(SOT-343)  
ISSUE O



NOTES:

1. DIMENSIONS ARE IN MILLIMETERS.
2. INTERPRET DIMENSIONS AND TOLERANCES PER ASME Y14.5M, 1994.
3. 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.
4. 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.
5. DATUMS A, B AND D TO BE DETERMINED 0.10mm FROM THE LEAD TIP.
6. TERMINAL NUMBERS ARE SHOWN FOR REFERENCE ONLY.
7. THESE DIMENSIONS APPLY TO THE FLAT SECTION OF THE LEAD BETWEEN 0.08mm AND 0.15mm FROM THE LEAD TIP.

DIM	MILLIMETERS	
	MIN	MAX
A	---	1.10
A1	0.00	0.10
A2	0.80	1.00
b	0.25	0.40
b1	0.25	0.35
B	0.55	0.70
B1	0.55	0.65
c	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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