

MBC13900

Product Preview

The RF Building Block Series NPN Silicon Low Noise Transistor

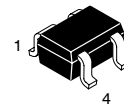
The MBC13900 is a high performance transistor fabricated using Motorola's 15 GHz f_T bipolar IC process. It is housed in the 4-lead SC-70 (SOT-343) surface mount plastic package resulting in a parasitic effect reduction and RF performance enhancements. The high performance at low power makes the MBC13900 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

RF NPN SILICON TRANSISTOR

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

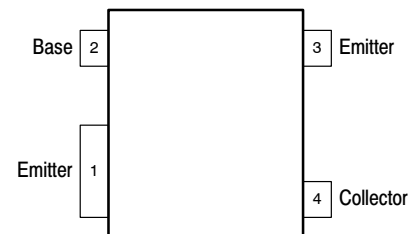
SEMICONDUCTOR TECHNICAL DATA



(Scale 4:1)

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

PIN CONNECTIONS



ORDERING INFORMATION

Device	Package
MBC13900	SOT-343

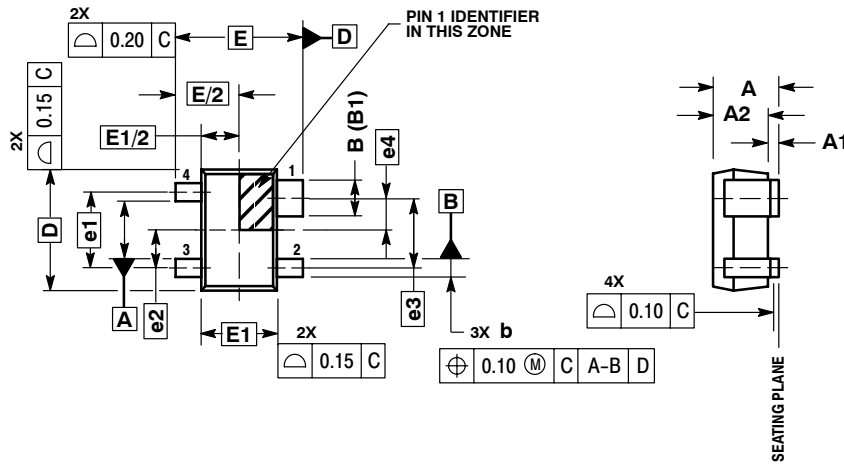
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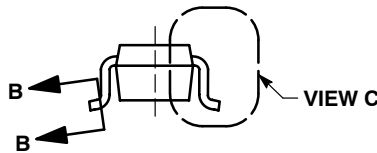
OUTLINE DIMENSIONS

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

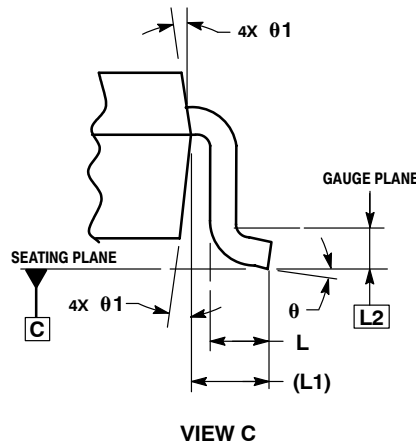
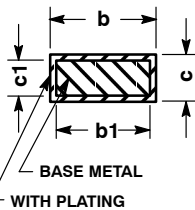


NOTES:

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.



SECTION B-B
(SEE NOTE 7)



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	
theta	0° - 8°	
theta1	4° - 10°	

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