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ON Semiconductor
MSC3930-BT1

For any questions, you can email us directly:
sales@integrated-circuit.com

# MSC3930-BT1

Preferred Device

# NPN RF Amplifier Transistor

- Pb−Free Package is Available

ON Semiconductor®

http://onsemi.com

### MAXIMUM RATINGS ($T_A$ = 25°C)

| Rating | Symbol | Value | Unit |
|---|---|---|---|
| Collector−Base Voltage | $V_{(BR)CBO}$ | 30 | Vdc |
| Collector−Emitter Voltage | $V_{(BR)CEO}$ | 20 | Vdc |
| Emitter−Base Voltage | $V_{(BR)EBO}$ | 5.0 | Vdc |
| Collector Current — Continuous | $I_C$ | 30 | mAdc |

### THERMAL CHARACTERISTICS

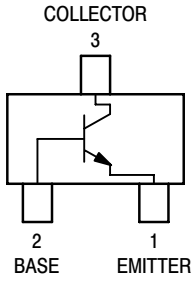
| Characteristic | Symbol | Max | Unit |
|---|---|---|---|
| Power Dissipation | $P_D$ | 200 | mW |
| Junction Temperature | $T_J$ | 150 | °C |
| Storage Temperature | $T_{stg}$ | −55 ~ +150 | °C |

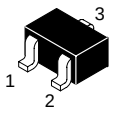
Maximum ratings are those values beyond which device damage can occur. Maximum ratings applied to the device are individual stress limit values (not normal operating conditions) and are not valid simultaneously. If these limits are exceeded, device functional operation is not implied, damage may occur and reliability may be affected.

### ELECTRICAL CHARACTERISTICS ($T_A$ = 25°C)

| Characteristic | Symbol | Min | Max | Unit |
|---|---|---|---|---|
| Collector−Base Cutoff Current ($V_{CB}$ = 10 Vdc, $I_E$ = 0) | $I_{CBO}$ | — | 0.1 | μAdc |
| DC Current Gain(1) ($V_{CB}$ = 10 Vdc, $I_C$ = −1.0 mAdc) | $h_{FE}$ | 70 | 140 | — |
| Collector−Gain — Bandwidth Product ($V_{CB}$ = 10 Vdc, $I_E$ = −1.0 mAdc) | $f_T$ | 150 | — | MHz |
| Reverse Transistor Capacitance ($V_{CE}$ = 10 Vdc, $I_C$ = 1.0 mAdc, f = 10.7 MHz) | $C_{re}$ | — | 1.5 | pF |

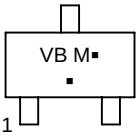
1. Pulse Test: Pulse Width ≤ 300 μs, D.C. ≤ 2%.




**SOT−323/SC−70**
**CASE 419**
**STYLE 3**

**MARKING DIAGRAM**




VB = Specific Device Code
M = Date Code
▪ = Pb−Free Package
(Note: Microdot may be in either location)

### ORDERING INFORMATION

| Device | Package | Shipping† |
|---|---|---|
| MSC3930−BT1 | SC−70 | 3000/Tape & Reel |
| MSC3930−BT1G | SC−70 (Pb−Free) | 3000/Tape & Reel |

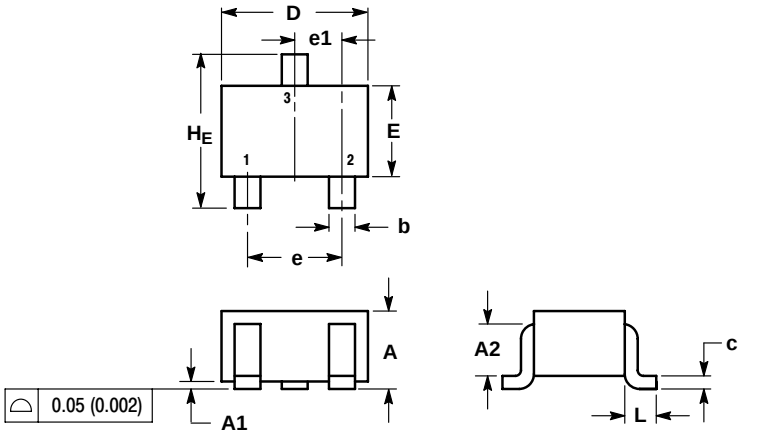
†For information on tape and reel specifications, including part orientation and tape sizes, please refer to our Tape and Reel Packaging Specifications Brochure, BRD8011/D.

**Preferred** devices are recommended choices for future use and best overall value.

# MSC3930−BT1

## PACKAGE DIMENSIONS

**SC−70 (SOT−323)**
CASE 419−04
ISSUE M

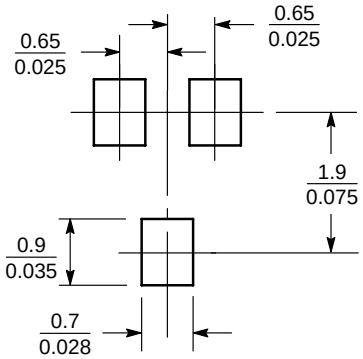



NOTES:
1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.
2. CONTROLLING DIMENSION: INCH.

| | MILLIMETERS | | | INCHES | | |
|---|---|---|---|---|---|---|
| DIM | MIN | NOM | MAX | MIN | NOM | MAX |
| A | 0.80 | 0.90 | 1.00 | 0.032 | 0.035 | 0.040 |
| A1 | 0.00 | 0.05 | 0.10 | 0.000 | 0.002 | 0.004 |
| A2 | | 0.7 REF | | | 0.028 REF | |
| b | 0.30 | 0.35 | 0.40 | 0.012 | 0.014 | 0.016 |
| c | 0.10 | 0.18 | 0.25 | 0.004 | 0.007 | 0.010 |
| D | 1.80 | 2.10 | 2.20 | 0.071 | 0.083 | 0.087 |
| E | 1.15 | 1.24 | 1.35 | 0.045 | 0.049 | 0.053 |
| e | 1.20 | 1.30 | 1.40 | 0.047 | 0.051 | 0.055 |
| e1 | | 0.65 BSC | | | 0.026 BSC | |
| L | | 0.425 REF | | | 0.017 REF | |
| $H_E$ | 2.00 | 2.10 | 2.40 | 0.079 | 0.083 | 0.095 |

STYLE 3:
PIN 1. BASE
2. EMITTER
3. COLLECTOR

## SOLDERING FOOTPRINT*




*For additional information on our Pb−Free strategy and soldering details, please download the ON Semiconductor Soldering and Mounting Techniques Reference Manual, SOLDERRM/D.



## PUBLICATION ORDERING INFORMATION

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