

## isc Silicon NPN RF Transistor

## 2SC4245

## DESCRIPTION

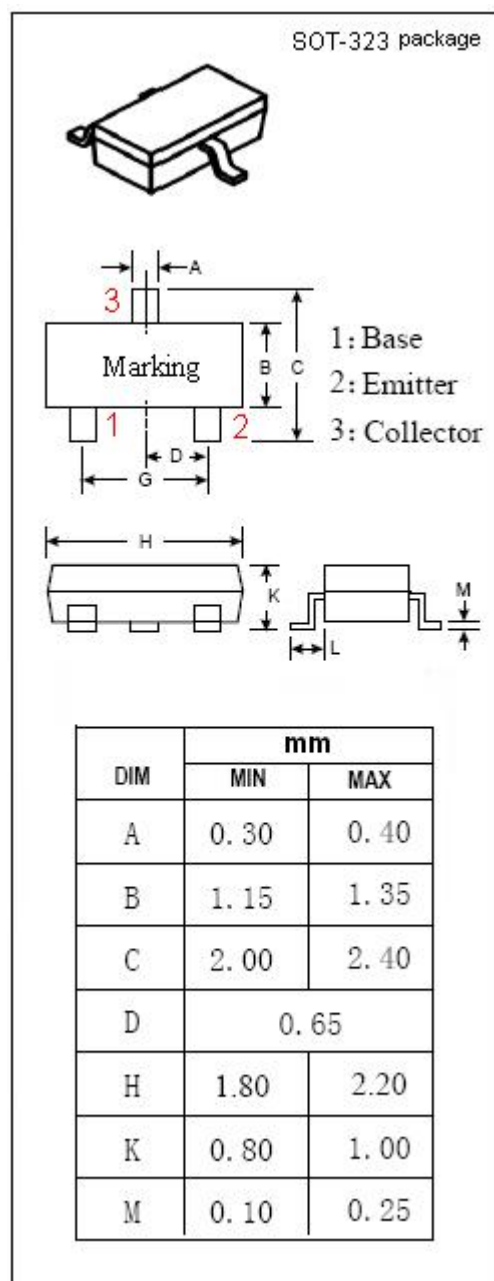
- High Current-Gain Bandwidth Product  
 $f_T = 2400\text{MHz TYP. @ } V_{CE} = 10\text{ V, } I_C = 2\text{ mA}$
- Low Noise
- 100% avalanche tested
- Minimum Lot-to-Lot variations for robust device performance and reliable operation

## APPLICATIONS

- TV tuner , UHF mixer applications
- VHF~UHF band RF amplifier applications

ABSOLUTE MAXIMUM RATINGS( $T_a=25^\circ\text{C}$ )

| SYMBOL    | PARAMETER                                               | VALUE   | UNIT             |
|-----------|---------------------------------------------------------|---------|------------------|
| $V_{CBO}$ | Collector-Base Voltage                                  | 30      | V                |
| $V_{CEO}$ | Collector-Emitter Voltage                               | 15      | V                |
| $V_{EBO}$ | Emitter-Base Voltage                                    | 3       | V                |
| $I_C$     | Collector Current-Continuous                            | 50      | mA               |
| $I_B$     | Base Current-Continuous                                 | 25      | mA               |
| $P_C$     | Collector Power Dissipation<br>@ $T_c=25^\circ\text{C}$ | 0.1     | W                |
| $T_J$     | Junction Temperature                                    | 125     | $^\circ\text{C}$ |
| $T_{stg}$ | Storage Temperature Range                               | -55~125 | $^\circ\text{C}$ |



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## ELECTRICAL CHARACTERISTICS

T<sub>C</sub>=25°C unless otherwise specified

| SYMBOL               | PARAMETER                           | CONDITIONS                                                                                | MIN  | TYP. | MAX | UNIT |
|----------------------|-------------------------------------|-------------------------------------------------------------------------------------------|------|------|-----|------|
| I <sub>CBO</sub>     | Collector Cutoff Current            | V <sub>CB</sub> = 30V; I <sub>E</sub> = 0                                                 |      |      | 0.1 | μ A  |
| I <sub>EBO</sub>     | Emitter Cutoff Current              | V <sub>EB</sub> = 2V; I <sub>C</sub> = 0                                                  |      |      | 1.0 | μ A  |
| V <sub>(BR)CEO</sub> | Collector-Emitter Breakdown Voltage | I <sub>C</sub> = 1mA ; I <sub>B</sub> = 0                                                 | 15   |      |     | V    |
| h <sub>FE</sub>      | DC Current Gain                     | I <sub>C</sub> = 5mA ; V <sub>CE</sub> = 10V                                              | 40   |      | 200 |      |
| f <sub>T</sub>       | Current-Gain—Bandwidth Product      | I <sub>C</sub> = 2mA ; V <sub>CE</sub> = 10V                                              | 1500 | 2400 |     | MHz  |
| C <sub>re</sub>      | Feed-Back Capacitance               | I <sub>E</sub> = 0 ; V <sub>CB</sub> = 10V; f= 1MHz                                       |      | 0.6  | 0.9 | pF   |
| G <sub>ce</sub>      | Conversion Gain                     | I <sub>C</sub> = 2mA ; V <sub>CC</sub> = 10V; f= 800MHz<br>f <sub>L</sub> = 830MHz(+2dBm) | 12   | 17   |     | dB   |
| NF                   | Noise Figure                        |                                                                                           |      | 8    | 13  | dB   |

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