

isc Silicon NPN RF Transistor

2SC4591

DESCRIPTION

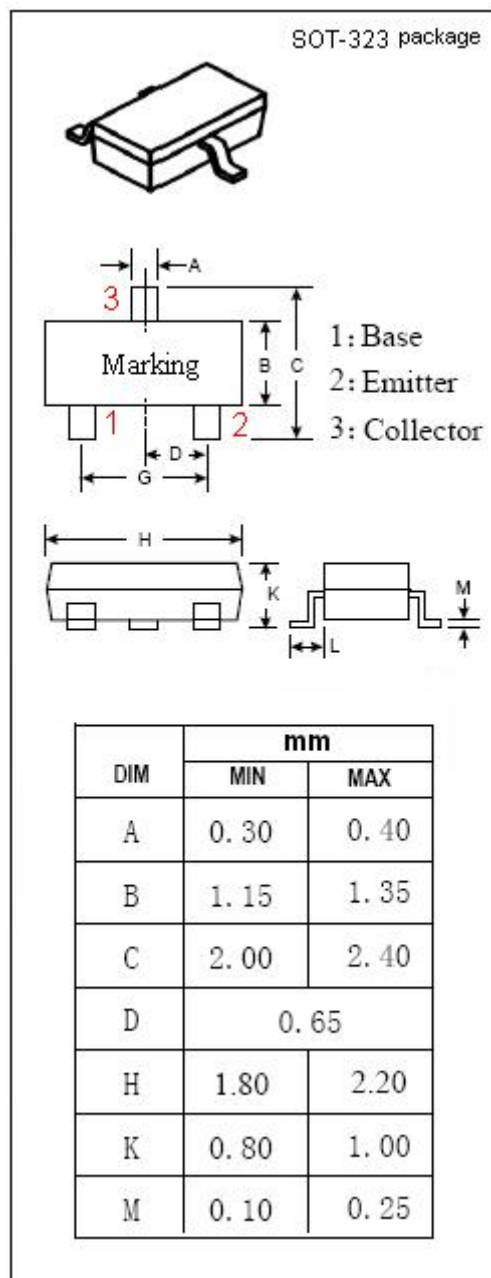
- High Current-Gain Bandwidth Product
 $f_T = 9.0\text{GHz TYP. @ } V_{CE} = 5\text{ V, } I_C = 20\text{ mA}$
- Low Noise
 $NF = 1.2\text{ dB TYP. @ } V_{CE} = 5\text{ V, } I_C = 5\text{ mA, } f = 900\text{ MHz}$
- High Power Gain
 $PG = 12.5\text{ dB TYP. @ } V_{CE} = 5\text{ V, } I_C = 20\text{ mA, } f = 900\text{ MHz}$
- 100% avalanche tested
- Minimum Lot-to-Lot variations for robust device performance and reliable operation

APPLICATIONS

- Designed for VHF, UHF low noise amplifier.

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

| SYMBOL | PARAMETER | VALUE | UNIT |
|-----------|---|---------|------------------|
| V_{CBO} | Collector-Base Voltage | 15 | V |
| V_{CEO} | Collector-Emitter Voltage | 9 | V |
| V_{EBO} | Emitter-Base Voltage | 1.5 | V |
| I_C | Collector Current-Continuous | 50 | mA |
| P_C | Collector Power Dissipation @ $T_c=25^\circ\text{C}$ | 0.15 | W |
| T_J | Junction Temperature | 150 | $^\circ\text{C}$ |
| T_{stg} | Storage Temperature Range | -55~150 | $^\circ\text{C}$ |



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ELECTRICAL CHARACTERISTICS

T_c=25°C unless otherwise specified

| SYMBOL | PARAMETER | CONDITIONS | MIN | TYP. | MAX | UNIT |
|----------------------|----------------------------------|---|-----|------|-----|------|
| V _{(BR)CBO} | Collector-Base Breakdown Voltage | I _C = 10 μA ; I _E = 0 | 15 | | | V |
| I _{CBO} | Collector Cutoff Current | V _{CB} = 12V; I _E = 0 | | | 1.0 | μA |
| I _{CEO} | Collector Cutoff Current | V _{CE} = 9V; R _{BE} = ∞ | | | 1.0 | mA |
| I _{EBO} | Emitter Cutoff Current | V _{EB} = 1.5V; I _C = 0 | | | 10 | μA |
| h _{FE} | DC Current Gain | I _C = 20mA ; V _{CE} = 5V | 40 | | 250 | |
| f _T | Current-Gain—Bandwidth Product | I _C = 20mA ; V _{CE} = 5V | 6.5 | 9.0 | | GHz |
| C _{OB} | Output Capacitance | I _E = 0 ; V _{CB} = 5V; f= 1MHz | | 0.8 | 1.5 | pF |
| PG | Power Gain | I _C = 20mA ; V _{CE} = 5V; f= 900MHz | 9.5 | 12.5 | | dB |
| NF | Noise Figure | I _C = 5mA ; V _{CE} = 5V; f= 900MHz | | 1.2 | 2.5 | dB |

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