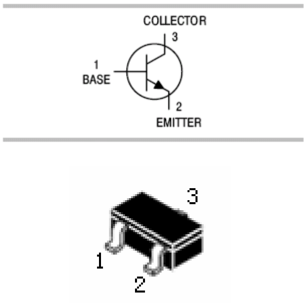
# Silicon Epitaxial Planar Transistor **2SC3356W**

## FEATURES

- Low noise and high gain: NF=1.1dB TYP, $G_a$=11dB TYP. @$V_{CE}$=10V,$I_C$=7mA,f=1.0GHz
- High power gain:MAG=13dB TYP. @$V_{CE}$=10V.$I_C$=20mA,f=1.0GHz

Lead-free



**SOT-323**

## APPLICATIONS

- NPN Silicon Epitaxial Planar Transistor.

## ORDERING INFORMATION

| Type No. | Marking | Package Code |
|---|---|---|
| 2SC3356W | R23/R24/R25 | SOT-323 |

## MAXIMUM RATING @ Ta=25℃ unless otherwise specified

| Symbol | Parameter | Value | Units |
|---|---|---|---|
| $V_{CBO}$ | Collector-Base Voltage | 20 | V |
| $V_{CEO}$ | Collector-Emitter Voltage | 12 | V |
| $V_{EBO}$ | Emitter-Base Voltage | 3 | V |
| $I_C$ | Collector Current -Continuous | 100 | mA |
| $P_C$ | Collector Dissipation | 200 | mW |
| $T_j$,$T_{stg}$ | Junction and Storage Temperature | -55~150 | ℃ |

## ELECTRICAL CHARACTERISTICS @ Ta=25℃ unless otherwise specified

| **Parameter** | **Symbol** | **Test conditions** | **MIN** | **TYP** | **MAX** | **UNIT** |
|---|---|---|---|---|---|---|
| Collector-base breakdown voltage | $V_{(BR)CBO}$ | $I_C$=10μA,$I_E$=0 | 20 | | | V |
| Collector-emitter breakdown voltage | $V_{(BR)CEO}$ | $I_C$=1mA,$I_B$=0 | 12 | | | V |
| Emitter-base breakdown voltage | $V_{(BR)EBO}$ | $I_E$=10μA,$I_C$=0 | 3 | | | V |
| Collector cut-off current | $I_{CBO}$ | $V_{CB}$=10V,$I_E$=0 | | | 0.1 | μA |
| Emitter cut-off current | $I_{EBO}$ | $V_{EB}$=1V,$I_C$=0 | | | 0.1 | μA |
| DC current gain | $h_{FE}$ | $V_{CE}$=10V,$I_C$=20mA | 50 | | 300 | |
| Transition frequency | $f_T$ | $V_{CE}$=10V, $I_C$= 20mA | | 6 | | GHz |
| Noise figure | F | $V_{CE}$=10V,$I_C$=7mA,f=1GHz | | | 2 | dB |

## CLASSIFICATION OF $h_{FE(1)}$

| Rank | Q | R | S |
|---|---|---|---|
| Range | 50-100 | 80-160 | 125-250 |
| Marking | R23 | R24 | R25 |

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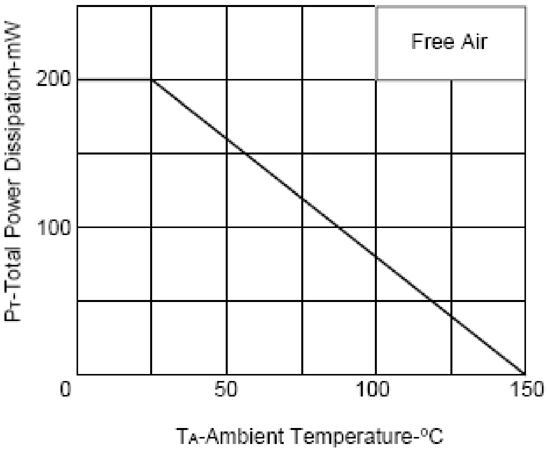
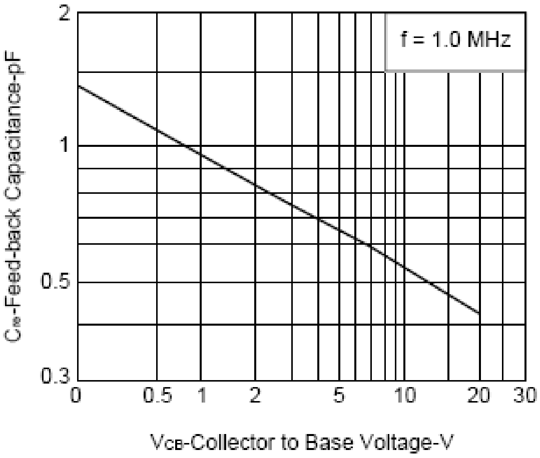
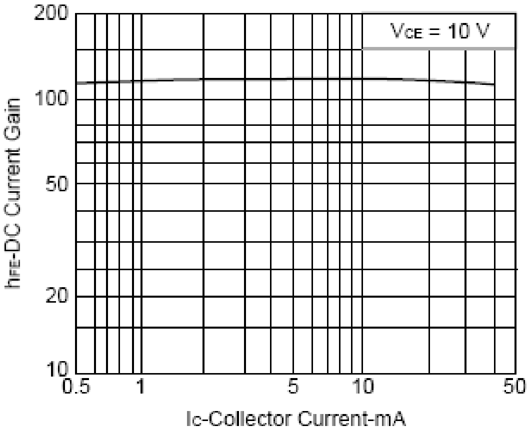
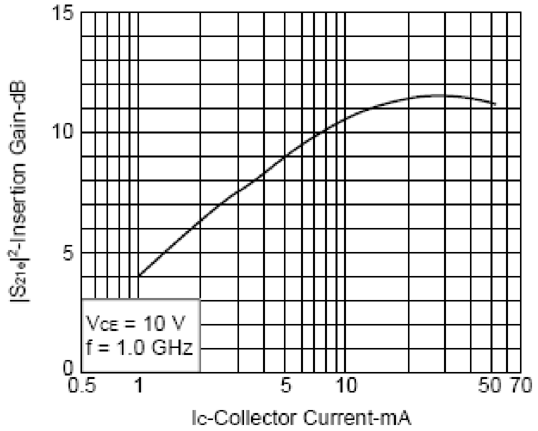
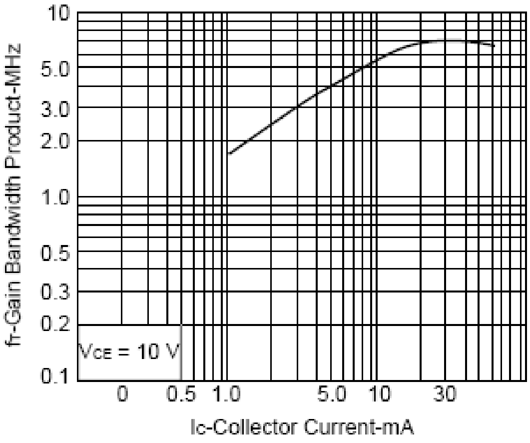
## TYPICAL CHARACTERISTICS @ Ta=25℃ unless otherwise specified

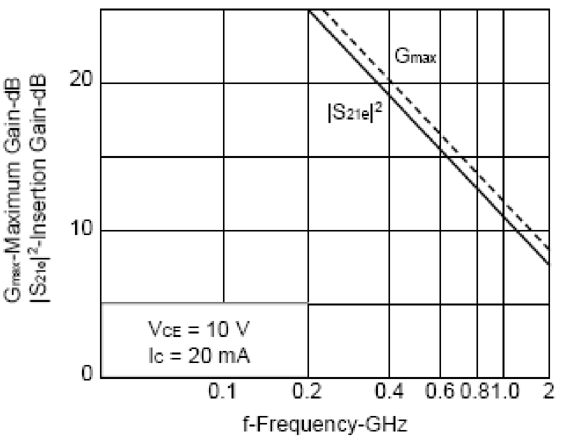

TOTAL POWER DISSIPATION vs. AMBIENT TEMPERATURE


FEED-BACK CAPACITANCE vs. COLLECTOR TO BASE VOLTAGE


DC CURRENT GAIN vs. COLLECTOR CURRENT

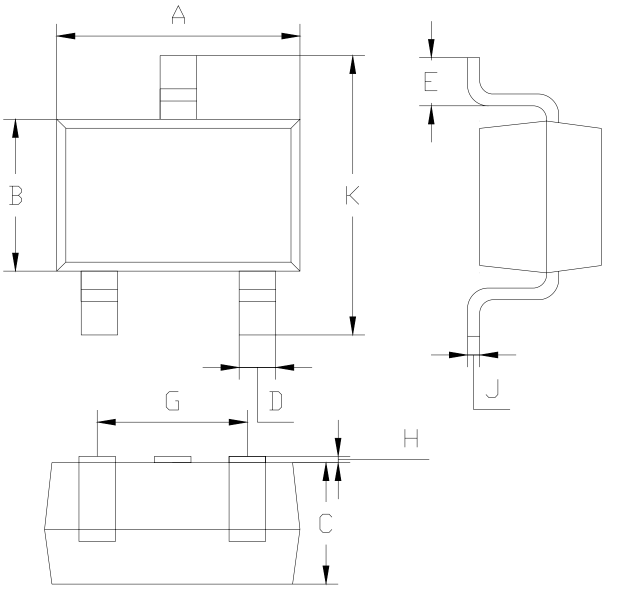

INSERTION GAIN vs. COLLECTOR CURRENT


GAIN BANDWIDTH PRODUCT vs. COLLECTOR CURRENT


INSERTION GAIN, MAXIMUM GAIN vs. FREQUENCY

## PACKAGE OUTLINE

Plastic surface mounted package SOT-323



| SOT-323 | | |
|---|---|---|
| Dim | Min | Max |
| A | 1.8 | 2.2 |
| B | 1.15 | 1.35 |
| C | 1.0Typical | |
| D | 0.15 | 0.35 |
| E | 0.25 | 0.40 |
| G | 1.2 | 1.4 |
| H | 0.02 | 0.1 |
| J | 0.1Typical | |
| K | 2.1 | 2.3 |
| All Dimensions in mm | | |

## PACKAGE INFORMATION

| Device | Package | Shipping |
|---|---|---|
| 2SC3356W | SOT-323 | 3000/Tape&Reel |