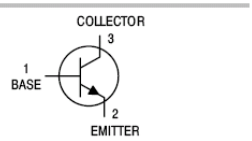
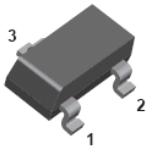
# Silicon Epitaxial Planar Transistor 2SD596

## FEATURES

Lead-free

- Micro package.
- Complementary to 2SB624 PNP Transistor.
- High DC current gain $h_{FE}$:200TYP.($V_{CE}$=1.0V,$I_C$=100mA)




**SOT-23**

## APPLICATIONS

- Audio frequency general purpose amplifier applications.

## ORDERING INFORMATION

| Type No. | Marking | Package Code |
|---|---|---|
| 2SD596 | DV1/DV2/DV3/DV4/DV5 | SOT-23 |

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

| Symbol | Parameter | Value | Units |
|---|---|---|---|
| $V_{CBO}$ | Collector-Base Voltage | 30 | V |
| $V_{CEO}$ | Collector-Emitter Voltage | 25 | V |
| $V_{EBO}$ | Emitter-Base Voltage | 5 | V |
| $I_C$ | Collector Current -Continuous | 700 | mA |
| $P_C$ | Collector Dissipation | 200 | mW |
| $T_j$,$T_{stg}$ | Junction and Storage Temperature | -55~150 | ℃ |

# Silicon Epitaxial Planar Transistor **2SD596**

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

| Parameter | Symbol | Test conditions | MIN | TYP | MAX | UNIT |
|---|---|---|---|---|---|---|
| Collector-base breakdown voltage | $V_{(BR)CBO}$ | $I_C$=100μA,$I_E$=0 | 30 | | | V |
| Collector-emitter breakdown voltage | $V_{(BR)CEO}$ | $I_C$=1mA,$I_B$=0 | 25 | | | V |
| Emitter-base breakdown voltage | $V_{(BR)EBO}$ | $I_E$=100μA,$I_C$=0 | 5 | | | V |
| Collector cut-off current | $I_{CBO}$ | $V_{CB}$=30V,$I_E$=0 | | | 0.1 | μA |
| Emitter cut-off current | $I_{EBO}$ | $V_{EB}$=5V,$I_C$=0 | | | 0.1 | μA |
| DC current gain | $h_{FE}$ | $V_{CE}$=1V,$I_C$=100mA<br>$V_{CE}$=1V,$I_C$=700mA | 110<br>50 | 200 | 400 | |
| Collector-emitter saturation voltage | $V_{CE(sat)}$ | $I_C$=700mA, $I_B$=70mA | | 0.22 | 0.6 | V |
| Base to Emitter voltage | $V_{BE}$ | $V_{CE}$=6V,$I_C$=10mA | 600 | 640 | 700 | mV |
| Transition frequency | $f_T$ | $V_{CE}$=6V, $I_E$= -10mA | 170 | | | MHz |
| Output capacitance | $C_{ob}$ | $V_{CB}$=6V, $I_E$=0,f=10kHz | | 12 | | pF |

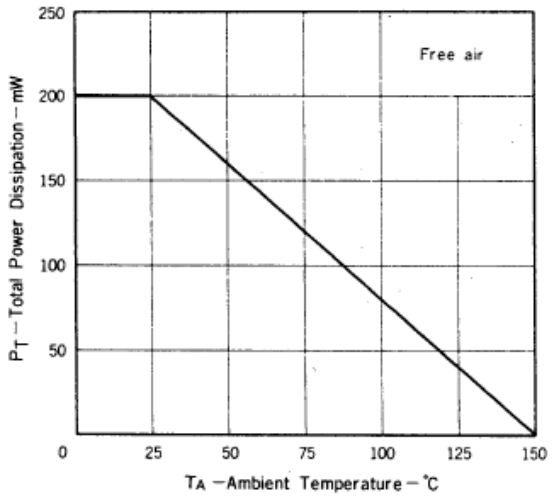
## CLASSIFICATION OF $h_{FE(1)}$

| Range | 110-180 | 135-220 | 170-270 | 200-320 | 250-400 |
|---|---|---|---|---|---|
| Marking | DV1 | DV2 | DV3 | DV4 | DV5 |

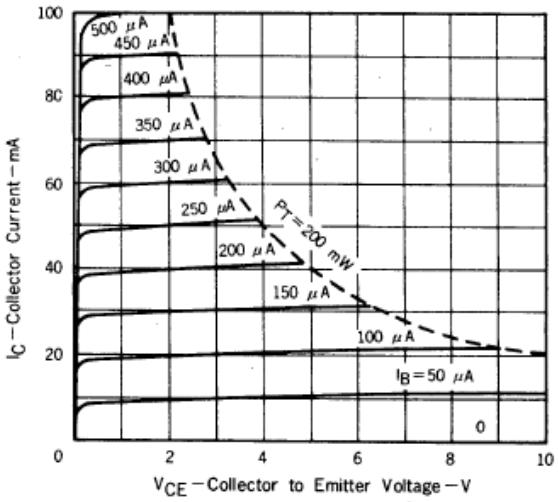
## TYPICAL CHARACTERISTICS @ Ta=25℃ unless otherwise specified

# Silicon Epitaxial Planar Transistor **2SD596**

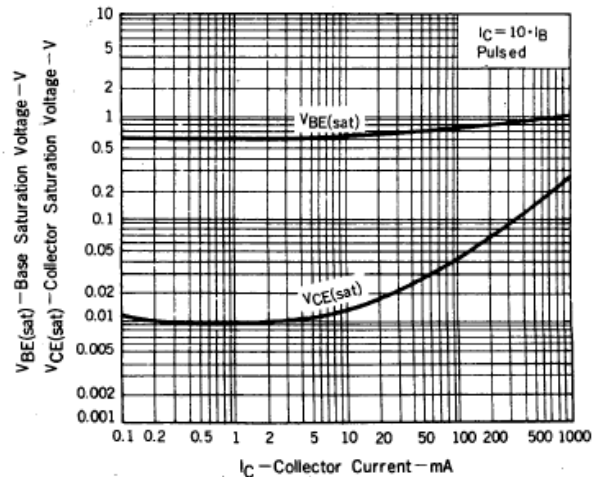
TOTAL POWER DISSIPATION vs. AMBIENT TEMPERATURE



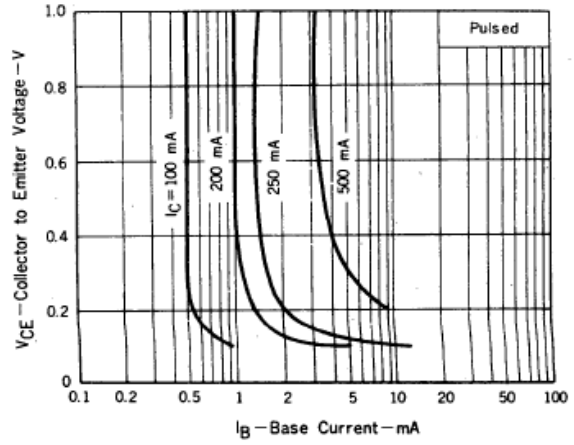

COLLECTOR CURRENT vs. COLLECTOR TO EMITTER VOLTAGE



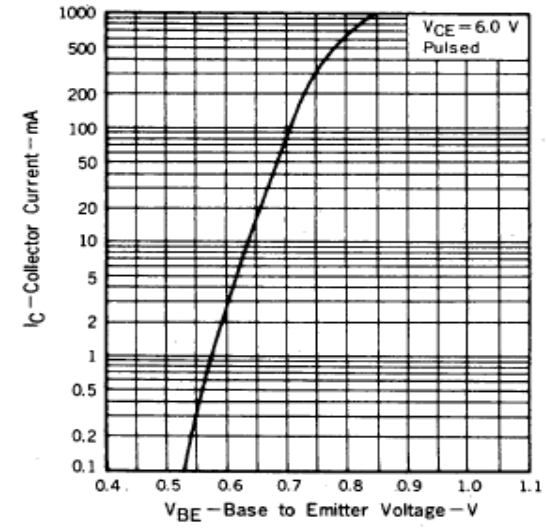

COLLECTOR AND BASE SATURATION VOLTAGE vs. COLLECTOR CURRENT



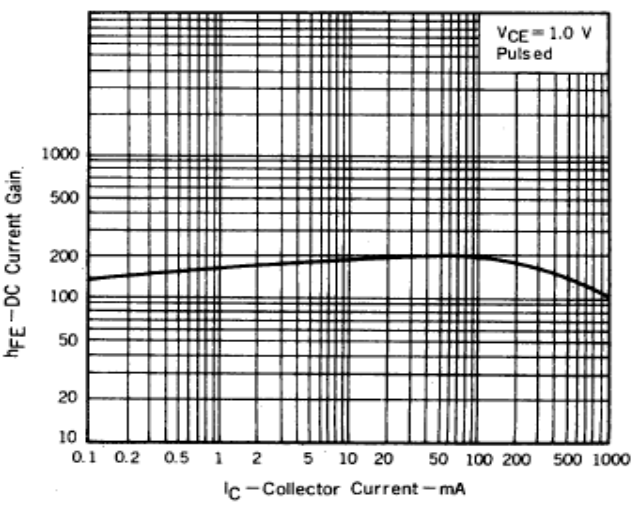

COLLECTOR TO EMITTER VOLTAGE vs. BASE CURRENT




COLLECTOR CURRENT vs. BASE TO EMITTER VOLTAGE



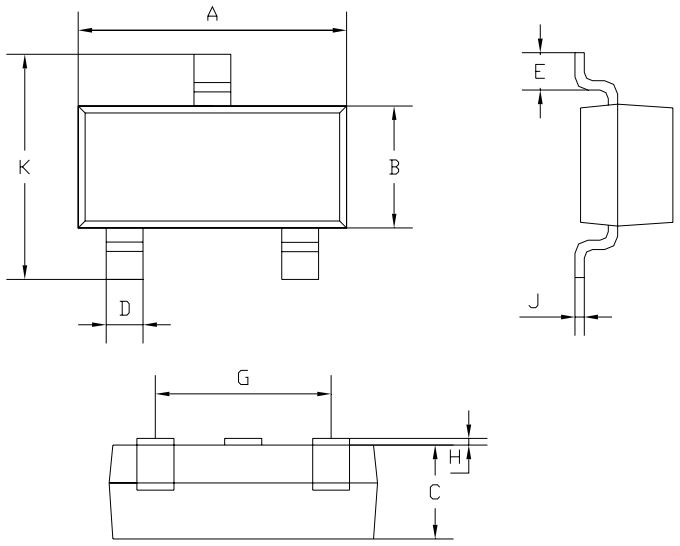

DC CURRENT GAIN vs. COLLECTOR CURRENT



# Silicon Epitaxial Planar Transistor **2SD596**

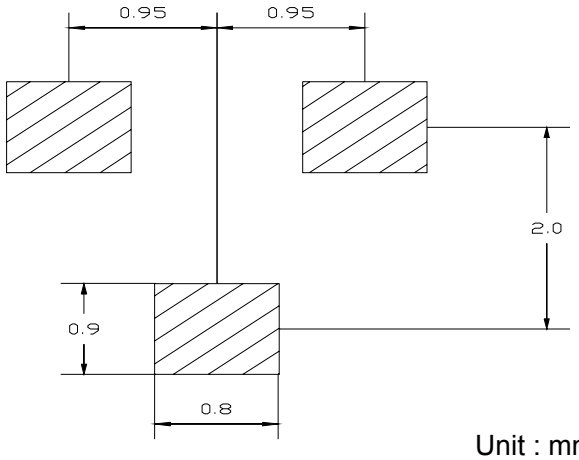
## PACKAGE OUTLINE

Plastic surface mounted package SOT-23




| SOT-23 | | |
|---|---|---|
| Dim | Min | Max |
| A | 2.85 | 2.95 |
| B | 1.25 | 1.35 |
| C | 1.0Typical | |
| D | 0.37 | 0.43 |
| E | 0.35 | 0.48 |
| G | 1.85 | 1.95 |
| H | 0.02 | 0.1 |
| J | 0.1Typical | |
| K | 2.35 | 2.45 |
| All Dimensions in mm | | |

## SOLDERING FOOTPRINT




Unit : mm

## PACKAGE INFORMATION

| Device | Package | Shipping |
|---|---|---|
| 2SD596 | SOT-23 | 3000/Tape&Reel |