



## Silicon Epitaxial Planar Transistor

## 2SD596

### FEATURES

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



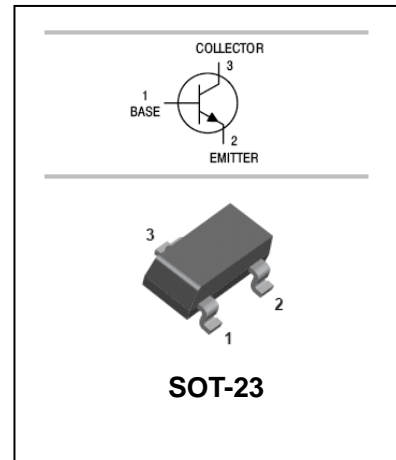
Lead-free

### APPLICATIONS

- Audio frequency general purpose amplifier applications

### ORDERING INFORMATION

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



### MAXIMUM RATING @ $T_a=25^{\circ}C$ 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 to +150 | $^{\circ}C$ |



**Silicon Epitaxial Planar Transistor**

**2SD596**

**ELECTRICAL CHARACTERISTICS @ Ta=25°C unless otherwise specified**

| Parameter                            | Symbol        | Test conditions                                  | MIN       | TYP  | MAX | UNIT    |
|--------------------------------------|---------------|--|-----------|------|-----|---------|
| Collector-base breakdown voltage     | $V_{(BR)CBO}$ | $I_C=100\mu A, I_E=0$                            | 30        |      |     | V       |
| Collector-emitter breakdown voltage  | $V_{(BR)CEO}$ | $I_C=1mA, I_B=0$                                 | 25        |      |     | V       |
| Emitter-base breakdown voltage       | $V_{(BR)EBO}$ | $I_E=100\mu A, I_C=0$                            | 5         |      |     | V       |
| Collector cut-off current            | $I_{CBO}$     | $V_{CB}=30V, I_E=0$                              |           |      | 0.1 | $\mu A$ |
| Emitter cut-off current              | $I_{EBO}$     | $V_{EB}=5V, I_C=0$                               |           |      | 0.1 | $\mu A$ |
| 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  $h_{FE(1)}$**

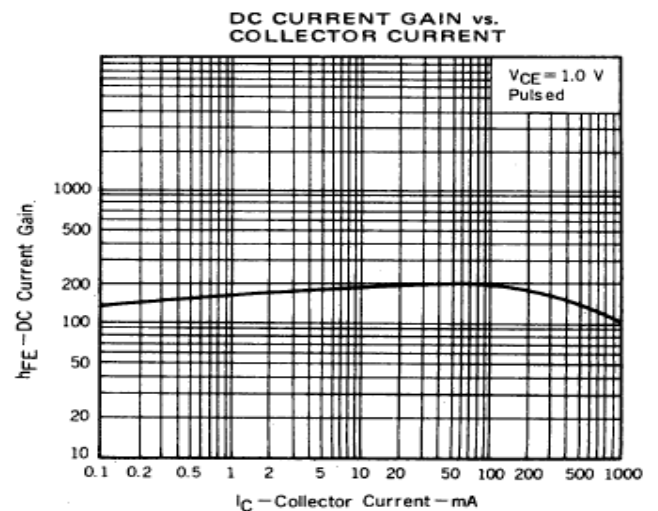
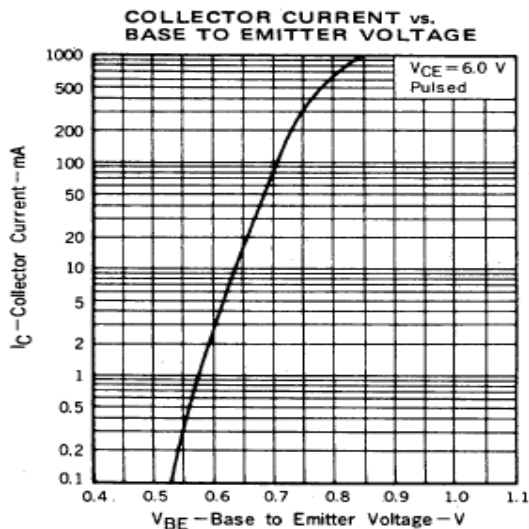
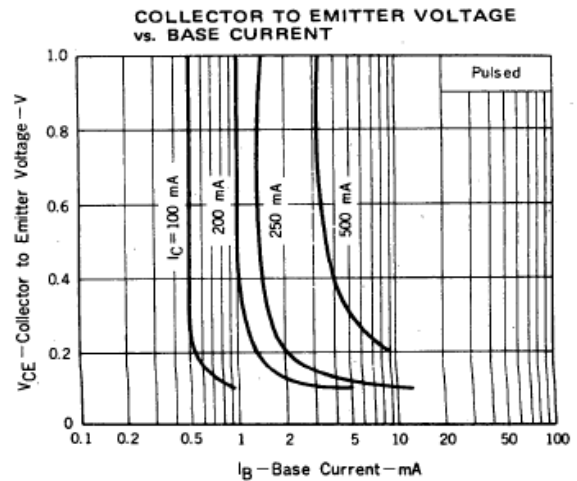
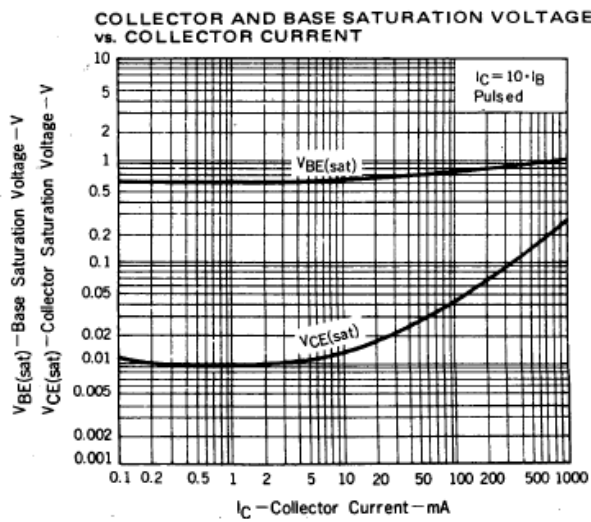
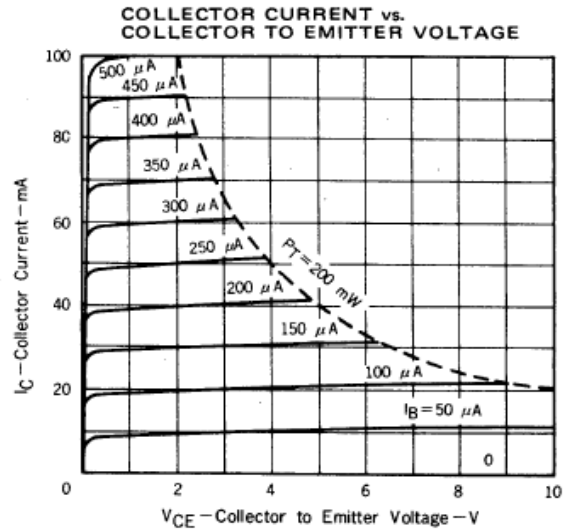
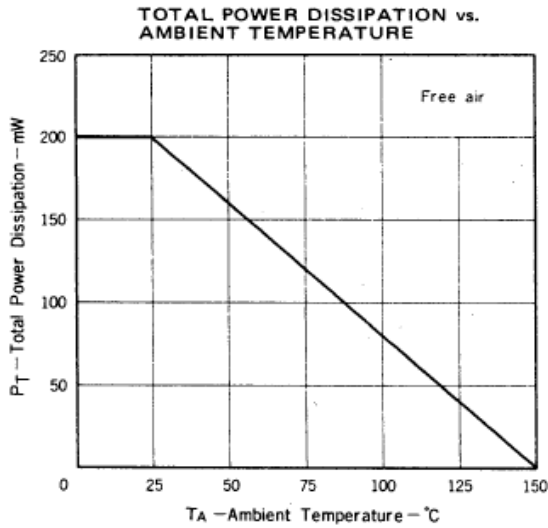
|         |         |         |         |         |         |
|---------|---------|---------|---------|---------|---------|
| Range   | 110-180 | 135-220 | 170-270 | 200-320 | 250-400 |
| Marking | DV1     | DV2     | DV3     | DV4     | DV5     |



**Silicon Epitaxial Planar Transistor**

**2SD596**

TYPICAL CHARACTERISTICS @  $T_a=25^\circ\text{C}$  unless otherwise specified



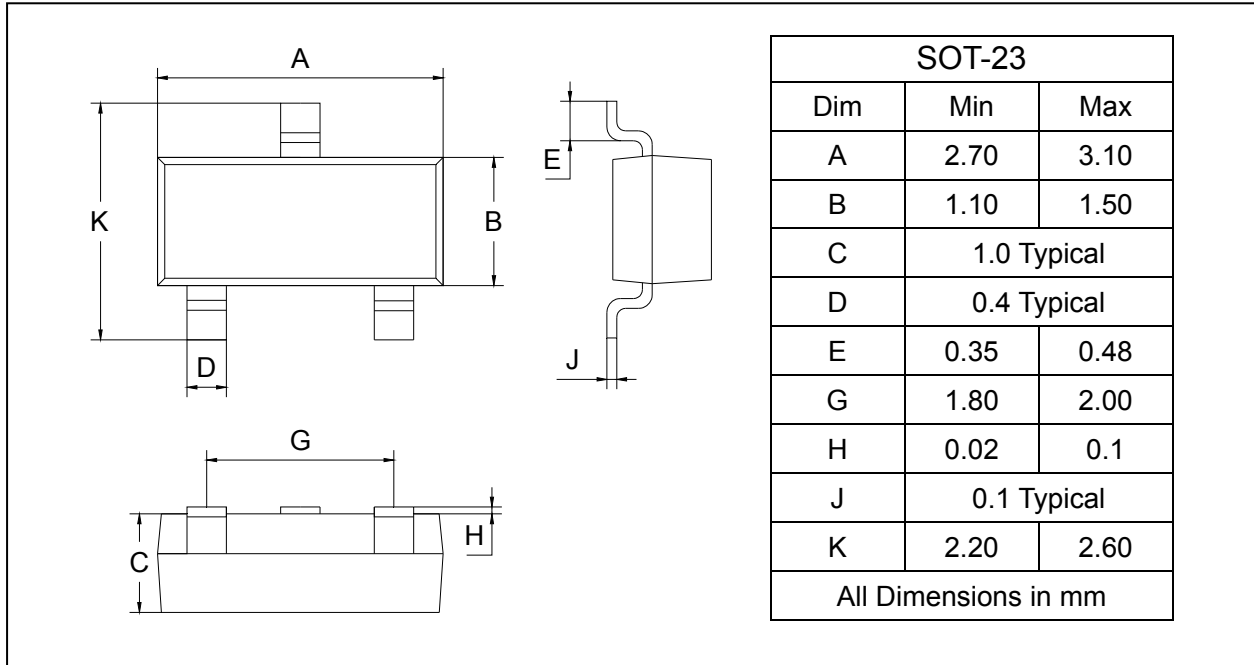
**Silicon Epitaxial Planar Transistor**

**2SD596**

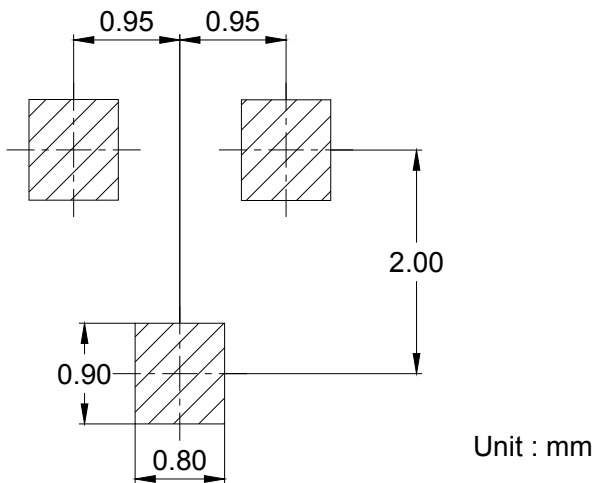
**PACKAGE OUTLINE**

Plastic surface mounted package

SOT-23



**SOLDERING FOOTPRINT**



**PACKAGE INFORMATION**

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