

S 921 TS · S 923 TS

T-31-19

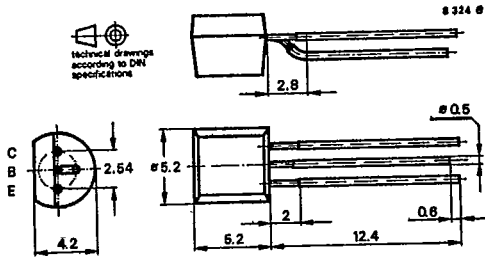
Silicon PNP Epitaxial Planar RF Transistors

Applications: For telephone sets, telecommunication circuits, video driver and power stages
in TV receivers and monitors and general in circuits with high supply voltage

Features:

- High reverse voltage
- Constant h_{FE} at $I_C = 10 \mu A \dots 10 \text{ mA}$
- S 921 TS complementary to S 920 TS
- S 923 TS complementary to S 922 TS

Dimensions in mm



Standard plastic case
10 A3 DIN 41 868
JEDEC TO 92Z
Weight max. 0.2 g

Absolute maximum ratings

| | S 921 TS | S 923 TS | |
|---------------------------|----------------|--------------|----|
| Collector-base voltage | $-V_{CBO}$ 300 | 250 | V |
| Collector-emitter voltage | $-V_{CEO}$ 300 | 250 | V |
| Emitter-base voltage | $-V_{EBO}$ | 5 | V |
| Collector current | $-I_C$ | 25 | mA |
| Collector peak current | $-I_{CM}$ | 100 | mA |
| Total power dissipation | P_{tot} | 460 | mW |
| Junction temperature | T_j | 150 | °C |
| Storage temperature range | T_{stg} | -55 ... +150 | °C |

Maximum thermal resistance

| | | | |
|---|------------|-----|-----|
| Junction ambient | | | |
| $l \leq 3 \text{ mm}$, on copper cooling area | | | |
| $\geq 10 \text{ mm} \times 10 \text{ mm}$, with 35 μm thickness | R_{thJA} | 270 | K/W |

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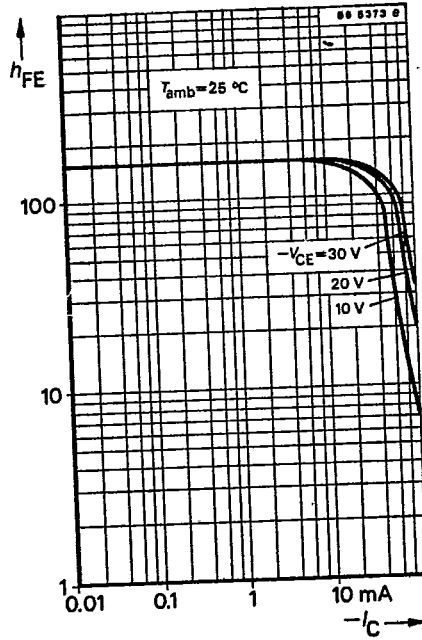
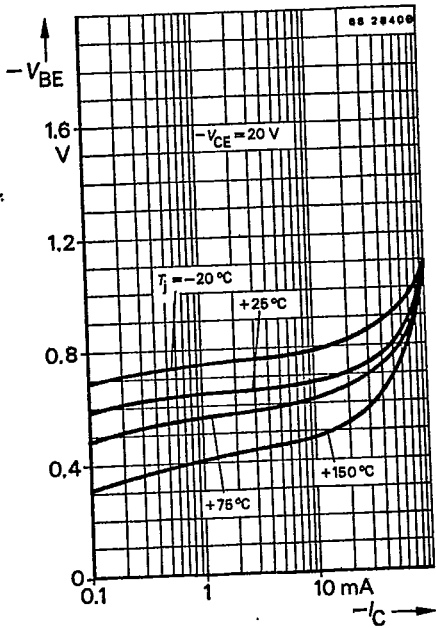
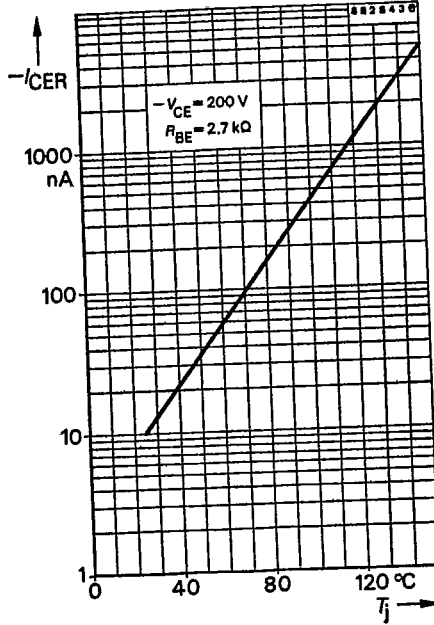
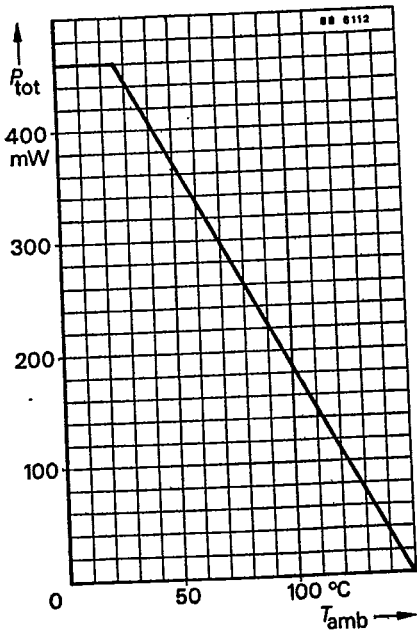
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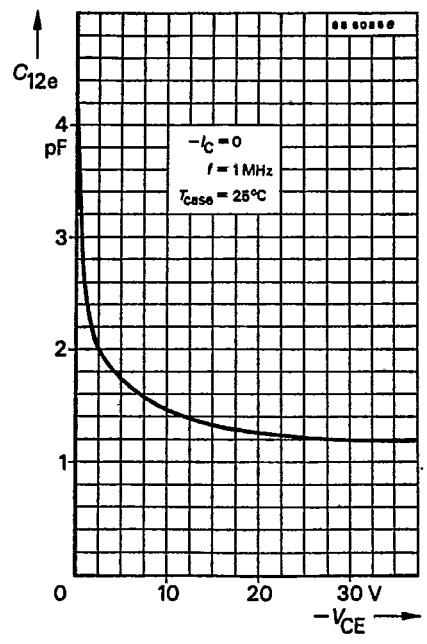
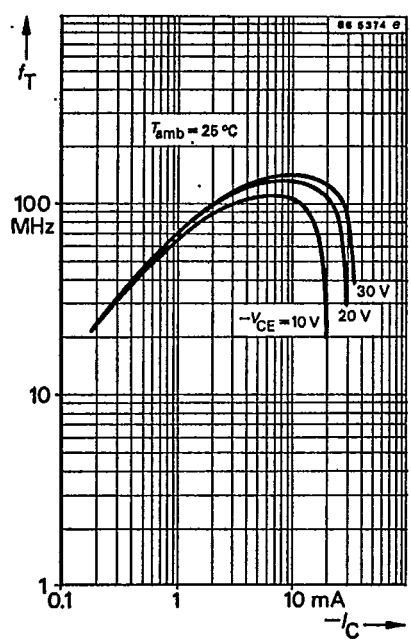
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| Characteristics | | Min. | Typ. | Max. |
|--|-----------------|----------------|------|------------------|
| $T_{amb} = 25\text{ }^{\circ}\text{C}$, unless otherwise specified | | | | |
| Collector cut-off current | | | | |
| $-V_{CE} = 250\text{ V}$ | S 921 TS | | | 50 nA |
| $-V_{CE} = 200\text{ V}$ | S 923 TS | | | 50 nA |
| $-V_{CE} = 200\text{ V}$, $R_{BE} = 2.7\text{ k}\Omega$, $T_j = 150\text{ }^{\circ}\text{C}$ | | | | 10 μA |
| Emitter cut-off current | | | | |
| $-V_{BE} = 5\text{ V}$ | | | | 10 μA |
| Collector-base breakdown voltage | | | | |
| $-I_C = 10\text{ }\mu\text{A}$ | S 921 TS | 300 | | V |
| | S 923 TS | 250 | | V |
| Collector-emitter breakdown voltage | | | | |
| $-I_C = 1\text{ mA}$ | S 921 TS | 300 | | V |
| | S 923 TS | 250 | | V |
| Emitter-base breakdown voltage | | | | |
| $-I_E = 10\text{ }\mu\text{A}$ | | 5 | | V |
| DC forward current transfer ratio | | | | |
| $-V_{CE} = 20\text{ V}$, $-I_C = 25\text{ mA}$ | | h_{FE} | 50 | |
| Gain bandwidth product | | | | |
| $-V_{CE} = 10\text{ V}$, $-I_C = 10\text{ mA}$ | | f_T | 60 | 90 MHz |
| Feedback capacitance | | | | |
| $-V_{CE} = 30\text{ V}$, $-I_C = 0$, $f = 1.0\text{ MHz}$ | | C_{12e} | 1.1 | 1.6 pF |
| Collector saturation RF voltage | | | | |
| $-I_C = 25\text{ mA}$, $T_j = 150\text{ }^{\circ}\text{C}$ | | $-V_{CEsatHF}$ | 20 | V |



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T-91-20

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● Family of curves

Besides the static (d. c.) and dynamic (a. c.) characteristics, family of curves are given for specified operating conditions. They show the typical interdependence of individual characteristics. Partly are given the scattering limits. They signify that at least 95% of the delivery lies inside these tolerances.

6.6. Additional informations

Preliminary specifications

This heading indicates that some information on the device concerned may be subject to slight changes.

Not for new developments

This heading indicates that the device concerned should not be used in equipment under development, it is, however, available for present production.

7. Taping and reeling

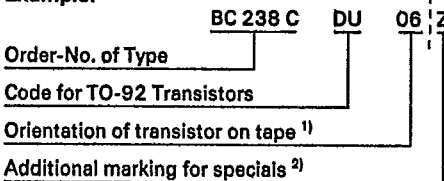
7.1. Taping of TO-92 transistors

Standard reeling: Taped on reel, reeled together with a paper film.

7.1.1. Order Numbers

Add the taping-code to the order number.

Example:



¹⁾ 06 = View on flat side of transistor, view on gummed tape

05 = View on round side of transistor, view on gummed tape

²⁾ Additional marking "O":

Taping without paper film

Additional marking "Z":

Zigzag folded tape in special box. Marking for orientation of transistor not necessary, because box can be opened on top or bottom.

Example for order No.: BC 237 C DU Z

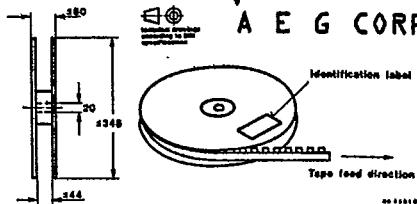


Fig. 7.1. Dimensions of reel in mm

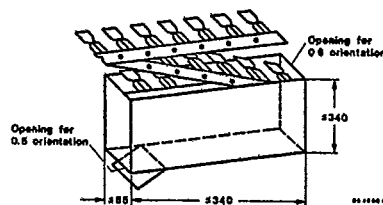


Fig. 7.2. Dimension of box for Zigzag folding in mm

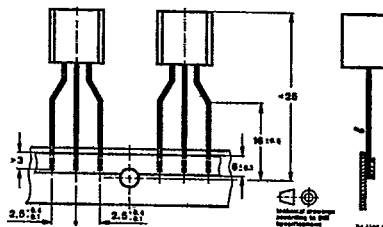


Fig. 7.3. Dimensions of tape in mm

7.1.2 Quantity of devices

1 000 devices per reel

2 000 devices per folded tape in special box.

7.2 Taped transistors in SOT 23 and SOT 143 case

a) Standard taping

Designation is attached with code GS 08 in case of standard taping. Example for normal version transistors as standard taped: BF 569-GS08.

Example for R-version transistors as standard taped: BF 569 R-GS 08.

In case of standard taping, the transistor orientation on the tape is shown in Fig. 7.4 and Fig. 7.5.

