

7-31-15

BFY 88

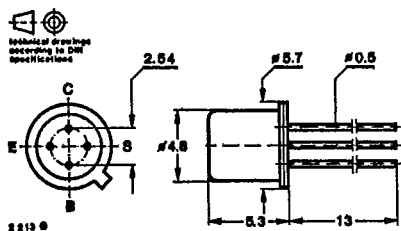
Silicon NPN Epitaxial Planar RF Transistor

Applications: VHF amplifier stages, pre-stages in common emitter configuration
Oscillating mixer stages in common base configuration

Features:

- Small feedback capacitance
- Noise figure < 6.5 dB
- Power gain > 12 dB
- Also available as "Qualified semiconductor device" according to: VG 95288

Dimensions in mm



Terminal "S"
connected with case
Case
18 A 4 DIN 41876
JEDEC TO 72
Weight max. 0.5 g

Absolute maximum ratings

Collector-base voltage	V_{CBO}	40	V
Collector-emitter voltage	V_{CEO}	25	V
Emitter-base voltage	V_{EBO}	3.5	V
Collector current	I_C	25	mA
Total power dissipation $T_{amb} \leq 45^\circ C$	P_{tot}	175	mW
Junction temperature	T_j	175	$^\circ C$
Storage temperature range	T_{stg}	-65 ... +175	$^\circ C$

Thermal resistances

	Min.	Typ.	Max.
Junction ambient			750 K/W

T1.2/688.0484 E1

3625 6-08

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DC characteristics

$T_{amb} = 25\text{ }^{\circ}\text{C}$

Collector cut-off current

$V_{CB} = 20\text{ V}$ $I_{CBO}^{*)}$ 45 nA

Collector-base breakdown voltage

$I_C = 10\text{ }\mu\text{A}$ $V_{(BR)EBO}^{*)}$ 40 V

Collector-emitter breakdown voltage

$I_C = 2\text{ mA}$ $V_{(BR)CEO}^{*)1)}$ 25 V

Emitter-base breakdown voltage

$I_E = 10\text{ }\mu\text{A}$ $V_{(BR)EBO}^{*)}$ 3.5 V

Base-emitter voltage

$V_{CE} = 10\text{ V}, I_C = 5\text{ mA}$ $V_{BE}^{*)}$ 720 780 mV

DC forward current transfer ratio

$V_{CE} = 1\text{ V}, I_C = 5\text{ mA}$ $h_{FE}^{*)}$ 40

AC characteristics

$T_{amb} = 25\text{ }^{\circ}\text{C}$

Gain bandwidth product

$V_{CE} = 10\text{ V}, I_C = 5\text{ mA}, f = 100\text{ MHz}$ f_T 750 850 MHz

Feedback capacitance

$V_{CB} = 10\text{ V}, I_C = 1\text{ mA}, f = 100\text{ MHz}$ C_{ore} 0.2 0.28 pF

Noise figure

$V_{CE} = 18\text{ V}, I_C = 2\text{ mA}, f = 200\text{ MHz}$ F 3.5 4 dB
 $f = 500\text{ MHz}, s_1 \leq 2^{3)}$ $F^{2)}$ 5.2 6.5 dB

Power gain

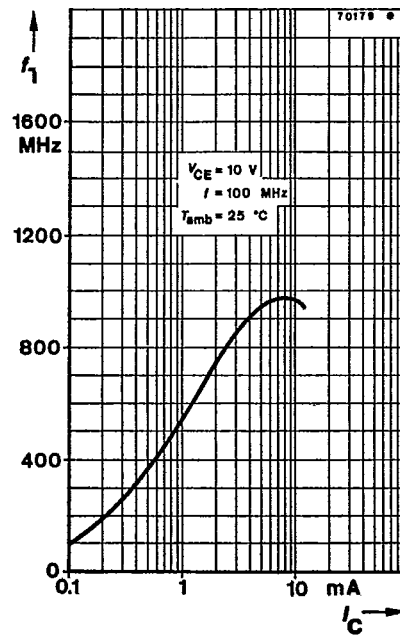
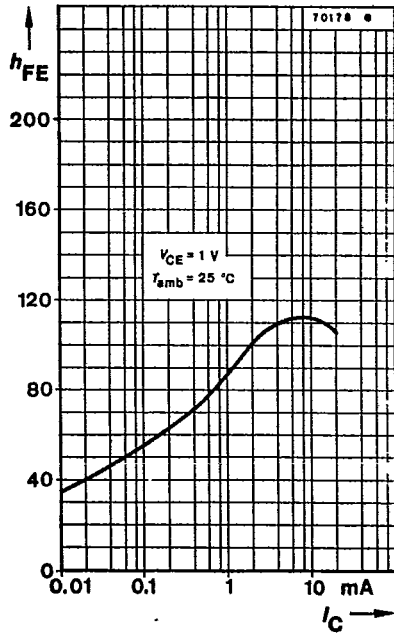
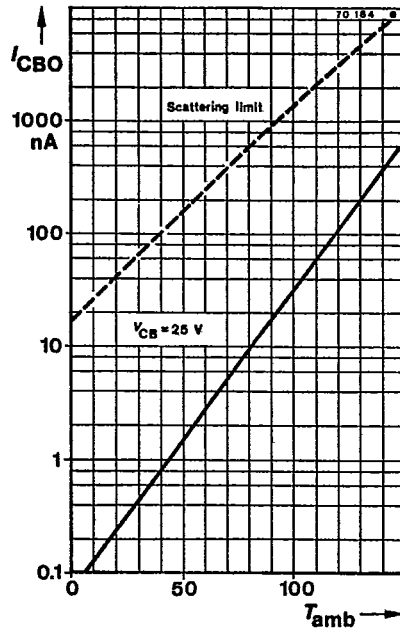
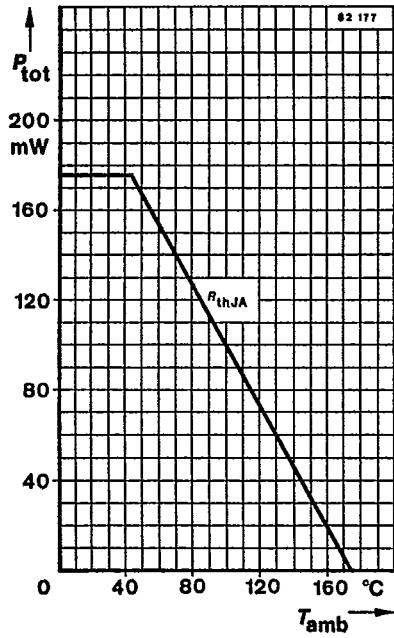
$V_{CE} = 18\text{ V}, I_C = 2\text{ mA}, f = 500\text{ MHz}, s_1 \leq 2^{3)}$ $G_{pe}^{2)}$ 12 15 dB

Short circuit forward transfer admittance

$V_{CE} = 10\text{ V}, I_C = 7\text{ mA}, f = 36\text{ MHz}$ $|y_{fe}|$ 160 mS

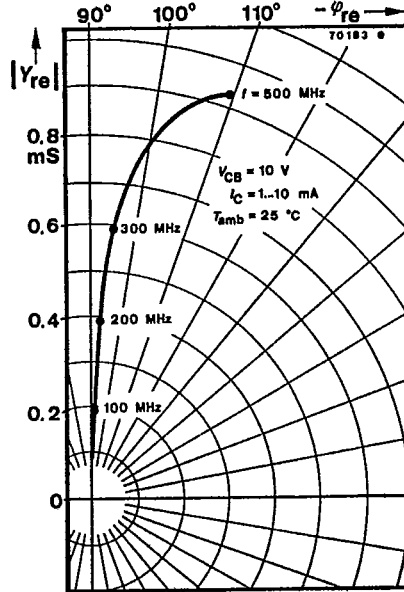
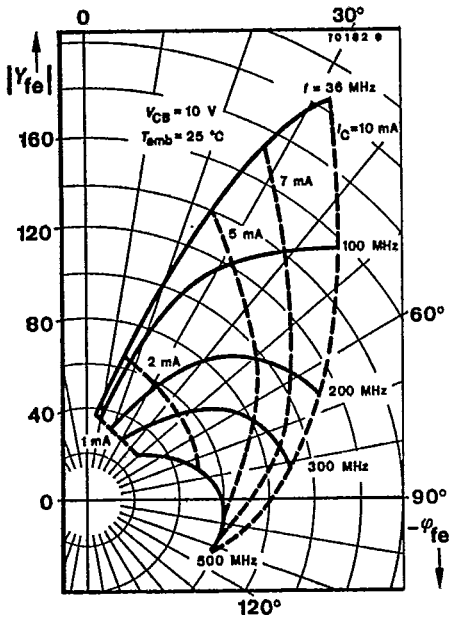
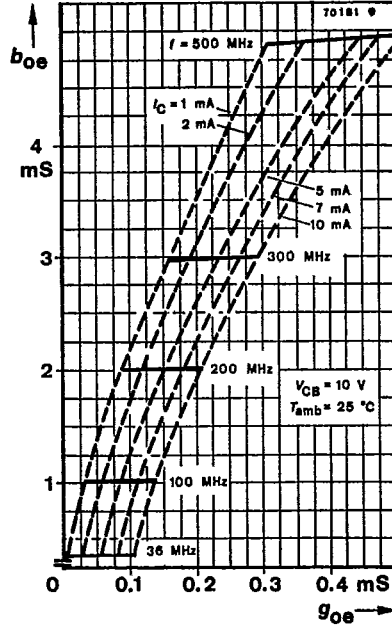
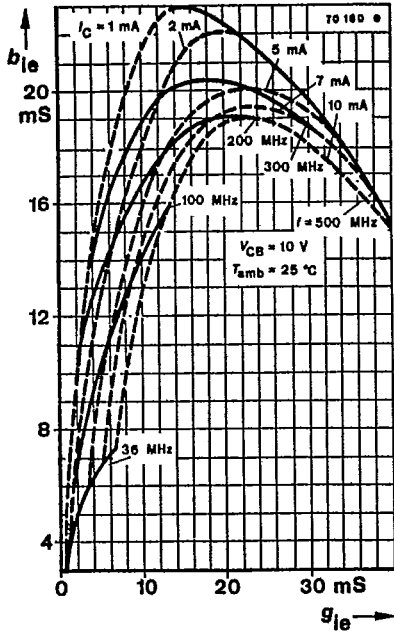
^{*)} AQL = 0.65%, ¹⁾ $\frac{f_p}{T} = 0.01, t_p = 0.3\text{ ms}$ ²⁾ In no neutralized circuit ³⁾ s_1 Reflection factor

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7. Taping and Reeling

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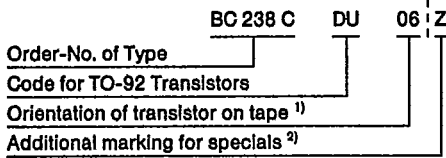
7.1. Taping of TO-92 Transistors

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 "0": 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

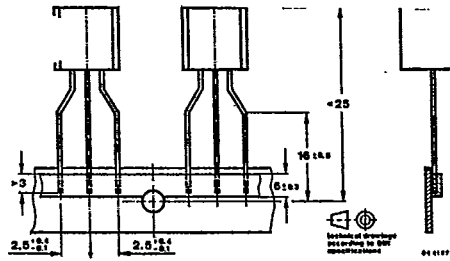


Fig. 7.3 Dimensions of tape in mm

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

7.2.1. Designation

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-GS 08.

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.

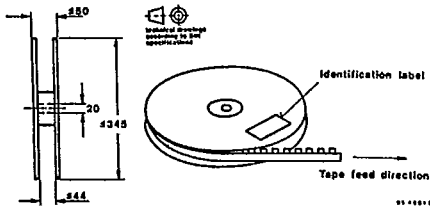


Fig. 7.1. Dimensions of reel in mm

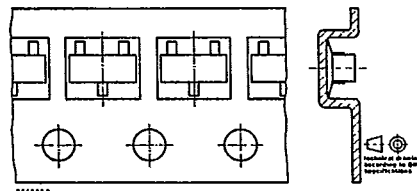


Fig. 7.4 Standard taped SOT 23

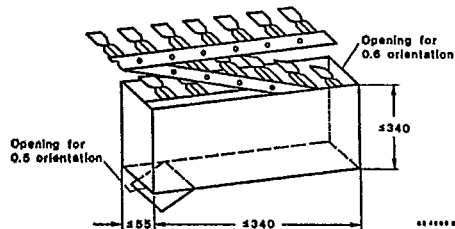


Fig. 7.2. Dimension of box for Zigzag folding in mm

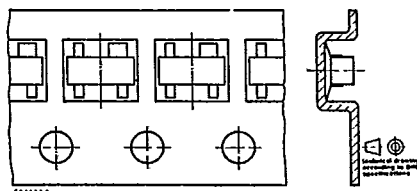


Fig. 7.5. Standard taped SOT 143

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b) Reverse taping

Designation is attached with code GS07 in case of reverse taping. Example for normal version transistors as reverse taped: BF 569-GS 07.

Example for R-version transistors as reverse taping: BF 569 R-GS 07.

In case of reverse taping, the transistor orientation on the tape is shown in Fig. 7.6.

Regarding MOS-FET and MES-FET devices, reverse taping is at present not available.

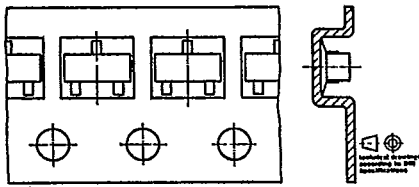


Fig. 7.6 Reverse taped SOT 23

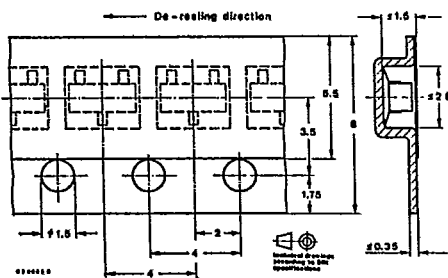


Fig. 7.7 Dimensions of tape in mm

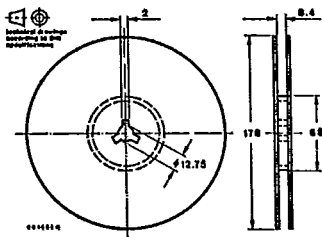


Fig. 7.8 Dimensions of reel in mm

7.2.2 Quantity of devices

3000 devices per reel