T-31-17

TELEFUNKEN electronic
Creative Technologies

BF 310

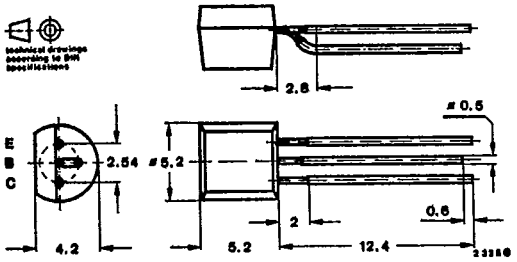
Silicon NPN Epitaxial Planar RF Transistor

Applications: General up to 100 MHz in common base configuration

Features:

- Small feedback capacitance

Dimensions in mm



Case
10 A 3 DIN 41868
JEDEC TO 92 Z
Weight max. 0.2 g

Absolute maximum ratings

Collector-base voltage	V_{CBO}	30	V
Collector-emitter voltage	V_{CEO}	30	V
Emitter-base voltage	V_{EBO}	4	V
Collector current	I_C	25	mA
Base current	I_B	3	mA
Total power dissipation $T_{amb} \leq 45$ °C	P_{tot}	300	mW
Junction temperature	T_j	150	°C
Storage temperature range	T_{stg}	−55 ... +150	°C

Thermal resistances		**Min.**	**Typ.**	**Max.**	
Junction ambient	R_{thJA}			350	K/W

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DC characteristics		Min.	Typ.	Max.	
$T_{amb} = 25\,°C$, unless otherwise specified					
Collector cut-off current					
$V_{CB} = 20\,V$	I_{CBO}			60	nA
$V_{CB} = 20\,V$, $T_{amb} = 100\,°C$	I_{CBO}			10	µA
Collector-base breakdown voltage					
$I_C = 10\,µA$	$V_{(BR)CBO}$	30			V
Collector-emitter breakdown voltage					
$I_C = 2\,mA$	$V_{(BR)CEO}$ [1]	30			V
Emitter-base breakdown voltage					
$I_E = 10\,µA$	$V_{(BR)EBO}$	4			V
DC forward current transfer ratio					
$V_{CE} = 10\,V$, $I_C = 4\,mA$	h_{FE}	29			
AC characteristics					
$T_{amb} = 25\,°C$					
Gain bandwidth product					
$V_{CB} = 10\,V$, $I_C = 1\,mA$, $f = 100\,MHz$	f_T			580	MHz
Feedback capacitance					
$V_{CB} = 10\,V$, $f = 0.47\,MHz$	$C_{\bar{a}rb}$			0.13	pF
Short circuit forward transfer admittance					
$V_{CB} = 10\,V$, $I_C = 4\,mA$, $f = 36\,MHz$	y_{fb}	80			mS
Collector current for: $\lvert y_{fb} \rvert$ max.					
$V_{CB} = 10\,V$, $I_C = 4\,mA$, $f = 36\,MHz$	I_C	10			mA
Short circuit output admittance					
$V_{CB} = 10\,V$, $I_C = 4\,mA$, $f = 36\,MHz$	g_{ob}			55	µS
	C_{ob}			1.6	pF

[1] $\frac{t_p}{T} = 0.01$, $t_p = 0.3\,ms$

7. Taping and Reeling

T-91-20

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:

BC 238 C DU 06 Z

- Order-No. of Type
- Code for TO-92 Transistors
- Orientation of transistor on tape [1]
- Additional marking for specials [2]

[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

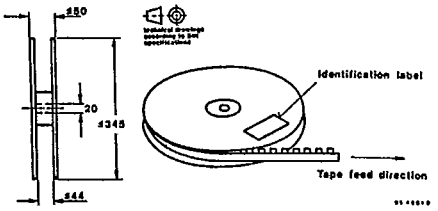

Fig. 7.1. Dimensions of reel in mm

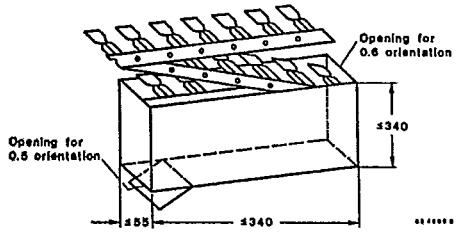

Fig. 7.2. Dimension of box for Zigzag folding in mm

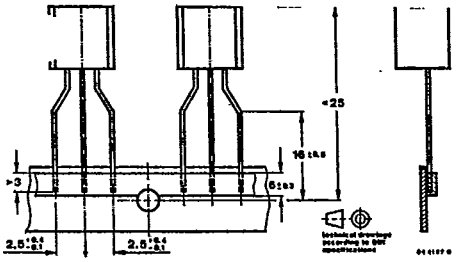

Fig. 7.3 Dimensions of tape in mm

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

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.

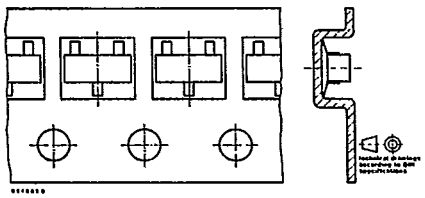

Fig. 7.4 Standard taped SOT 23

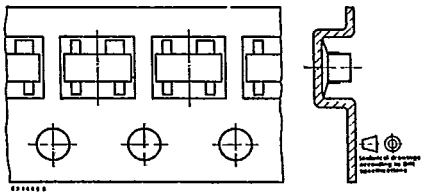

Fig. 7.5. Standard taped SOT 143

b) Reverse taping

Designation is attached with code GS 07 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.

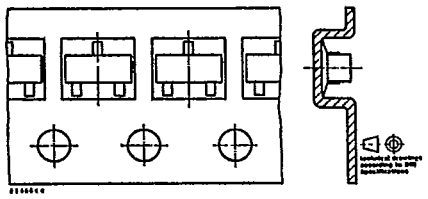

Fig. 7.6 Reverse taped SOT 23

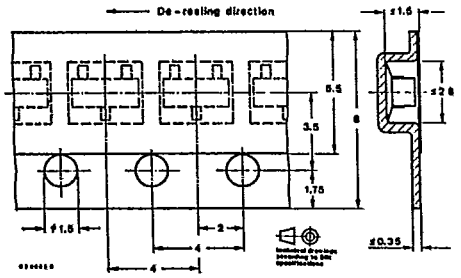

Fig. 7.7 Dimensions of tape in mm

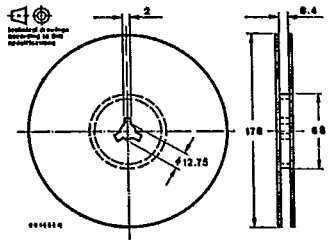

Fig. 7.8 Dimensions of reel in mm

7.2.2 Quantity of devices

3000 devices per reel