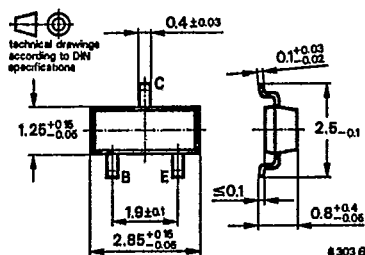


Silicon PNP Epitaxial Planar Transistors**T-31-17**

Applications: For telephone sets, telecommunication circuits, hybrid circuits, video-B-class power stages and general in circuits with high supply voltage

Features:

- High reverse voltage
- BF 821 S complementary to BF 820 S
- Constant h_{FE} at $I_C = 10 \mu A \dots 10 \text{ mA}$
- BF 823 S complementary to BF 822 S

Dimensions in mm

Standard plastic case

23 A3 DIN 41 869

(SOT 23)

Weight max. 0.01 g

Marking: BF 821 S with 1W
 BF 823 S with 1Y

Absolute maximum ratings

		BF 821 S	BF 823 S	
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}	335		mW
$R_{thJA} \leq 370 \text{ K/W}, T_{amb} \leq 25^\circ \text{C}$				
Junction temperature	T_j	150		$^\circ \text{C}$
Storage temperature range	T_{stg}	-55 ... +150		$^\circ \text{C}$

Maximum thermal resistance

Junction ambient				
on ceramic substrate 0.7 mm; 2.5 cm ²	R_{thJA}	370		K/W

BF 821 S · BF 823 S

T-31-17

Characteristics

 $T_{amb} = 25^{\circ}C$, unless otherwise specified

Min. Typ. Max.

Collector cut-off current

$-V_{CE} = 250 V$	BF 821 S	$-I_{CES}$		10	nA
$-V_{CE} = 200 V$	BF 823 S	$-I_{CES}$		10	nA
$-V_{CE} = 200 V, R_{BE} = 2.7 k\Omega, T_j = 150^{\circ}C$		$-I_{CER}$		10	μA

Emitter cut-off current

$V_{BE} = 5 V$		$-I_{EBO}$		10	μA
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Collector-base breakdown voltage

$-I_C = 10 \mu A$	BF 821 S	$-V_{(BR)CBO}$	300		V
	BF 823 S	$-V_{(BR)CBO}$	250		V

Collector-emitter breakdown voltage

$-I_C = 1 mA$	BF 821 S	$-V_{(BR)CEO}$	300		V
	BF 823 S	$-V_{(BR)CEO}$	250		V

Emitter-base breakdown voltage

$-I_E = 10 \mu A$		$-V_{(BR)EBO}$	5		V
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Collector saturation voltage

$-I_C = 30 mA, -I_B = 5 mA$		$-V_{CEsat}$		800	mV
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DC forward current transfer ratio

$V_{CE} = 20 V, I_C = 25 mA$		h_{FE}	50		
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Gain bandwidth product

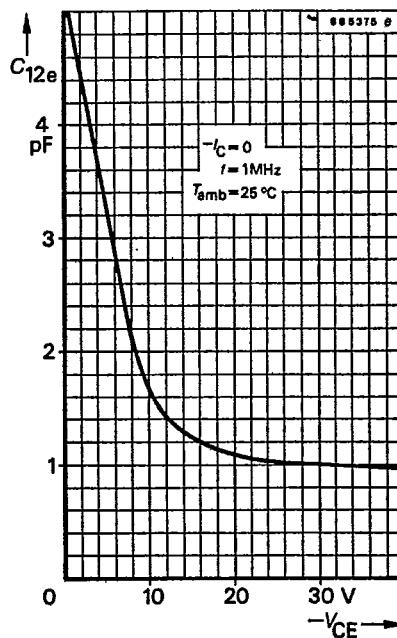
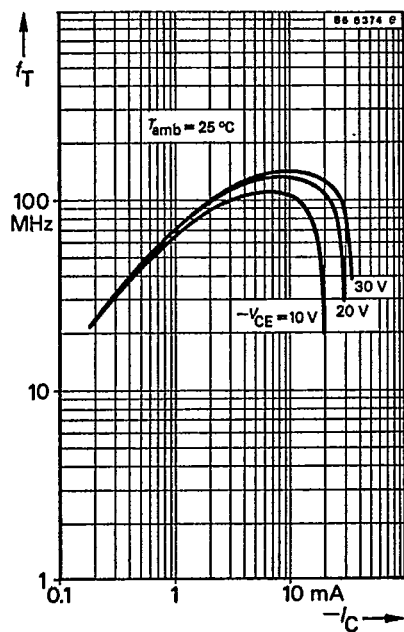
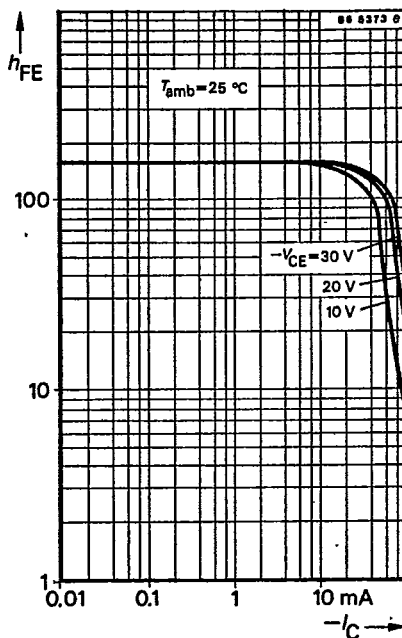
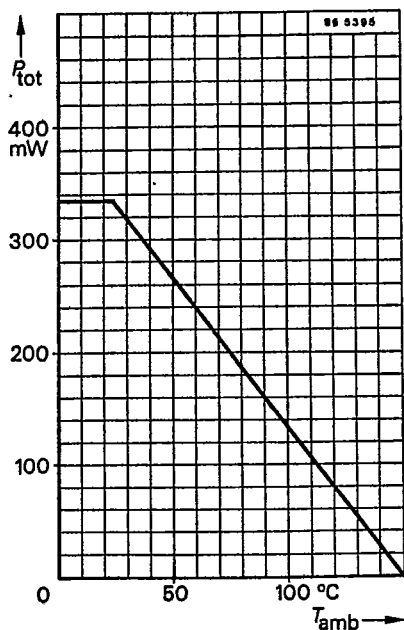
$-V_{CE} = 10 V, -I_C = 10 mA$		f_T	60	90	MHz
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Feedback capacitance

$-V_{CE} = 30 V, -I_C = 0, f = 1.0 MHz$		C_{12e}	1.0	1.6	pF
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BF 821 · BF 823 S

T-31.17



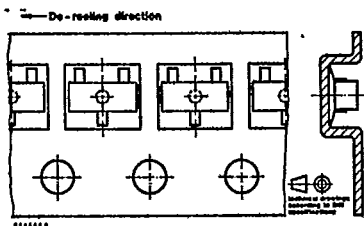


Fig. 7.4 Standard taped SOT 23

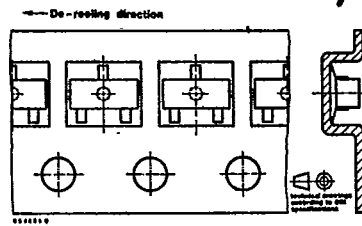


Fig. 7.6 Reverse taped SOT 23

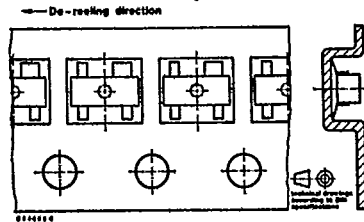


Fig. 7.5 Standard taped SOT 143

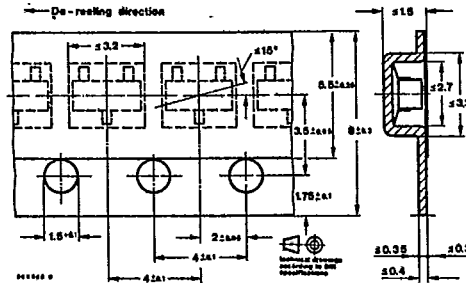


Fig. 7.7 Dimensions of tape in mm

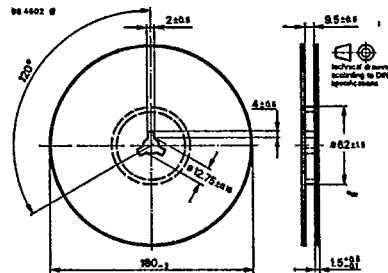


Fig. 7.8 Dimensions of reel in mm

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 R-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. 6. Regarding MOF-FET and MES-FET devices, reverse taping is at present not available.

8. Assessories

Number	Fig.	Designation	For case
119 880	8.1.	Isolating washer thickness 80 µm	12 A 3 DIN 41 869 JEDEC TO 126 (SOT 32)
564 542	8.2.	Isolating washer thickness 50 µm	14 A 3 DIN 41 869 JEDEC TO 220 (SOT 78)
912 884	8.3	Isolating washer thickness 50 µm	15 A 3 DIN 41 869 (TOP3) for clip mounting
191 131	8.4	Isolating washer thickness 50 µm	15 A 3 DIN 41 869 (TOP3) for screw mounting
191 140	8.5	Mounting clip	15 A 3 DIN 41 869 (TOP3)
569 524	8.6	Isolating washer thickness 100 µm + 50 µm	3B 2 DIN 41 872 JEDEC TO 3 Devices with high reverse voltage