

T-31-23

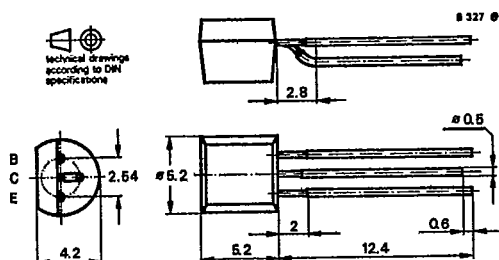
Silicon NPN Epitaxial Planar RF Transistors

Applications: Video B-class power stages in TV-receivers

Features:

- BF 420 S complementary to BF 421 S
- BF 422 S complementary to BF 423 S
- No h_{FE} -drift dependent of temperature

Dimensions in mm



Standard plastic case
10 A 3 DIN 41 868
JEDEC TO 92 Z
Weight max. 0.5 g

Absolute maximum ratings

		BF 420 S	BF 422 S	
Collector-base voltage	V_{CBO}	300	250	V
Collector-emitter voltage	V_{CEO}	300	250	V
Emitter-base voltage	V_{EB0}		5	V
Collector current	I_C		25	mA
Collector peak current	I_{CM}		100	mA
Total power dissipation $R_{thJA} \leq 150 \text{ K/W}, T_{amb} \leq 25^\circ \text{C}$	P_{tot}	830		mW
Junction temperature	T_j		150	$^\circ \text{C}$
Storage temperature range	T_{stg}		-65 ... +150	$^\circ \text{C}$

Maximum thermal resistances

		Min.	Typ.	Max.
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}		150	K/W

BF 420 S · BF 422 S

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Characteristics

Min.

Typ.

Max.

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

Collector cut-off current

$V_{CB} = 250 V$	BF 420 S	I_{CBO}		50	nA
$V_{CB} = 200 V$	BF 422 S	I_{CBO}		50	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 420 S	$V_{(BR)CBO}$	300		V
	BF 422 S	$V_{(BR)CBO}$	250		V

Collector-emitter breakdown voltage

$I_C = 1 mA$	BF 420 S	$V_{(BR)CEO}$	300		V
	BF 422 S	$V_{(BR)CEO}$	250		V

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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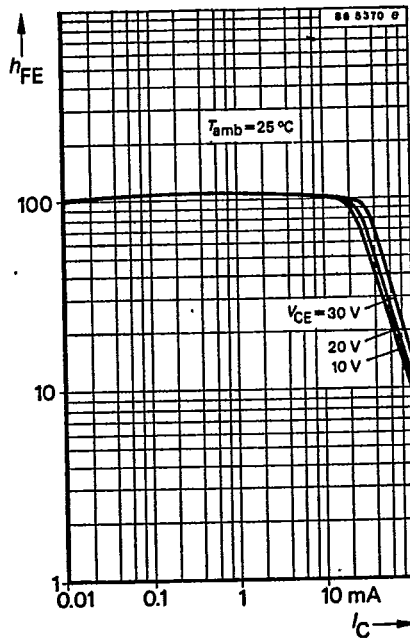
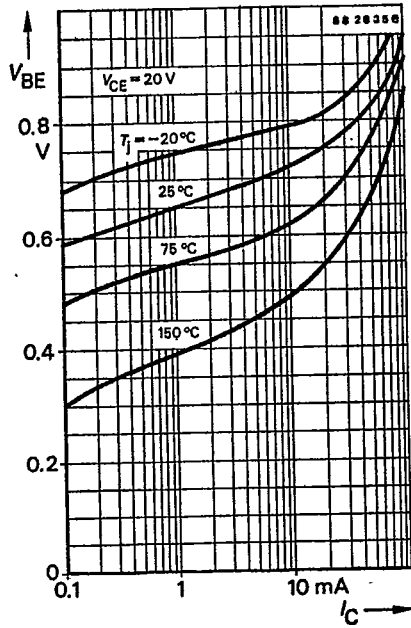
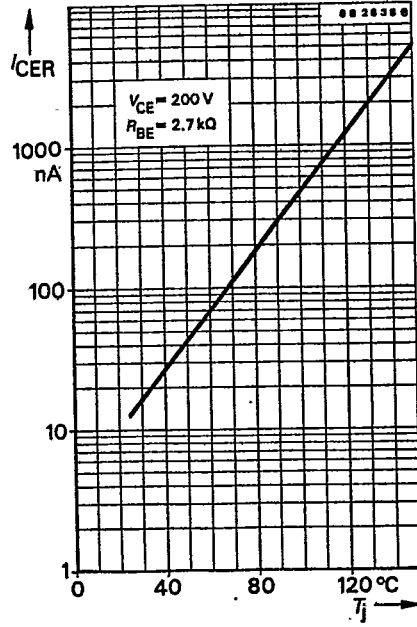
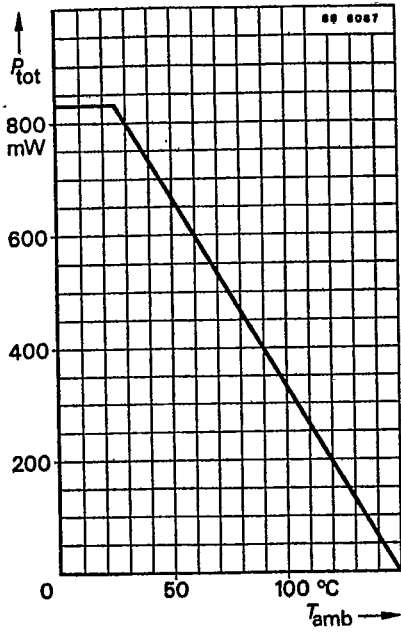
Feedback time constant

$V_{CB} = 20 V, I_E = 10 mA, f = 10.7 MHz$	$r_{bb'} C_{b'b'c}$			70	ps
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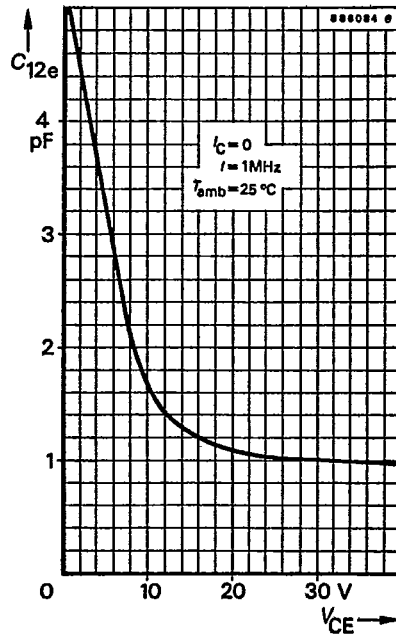
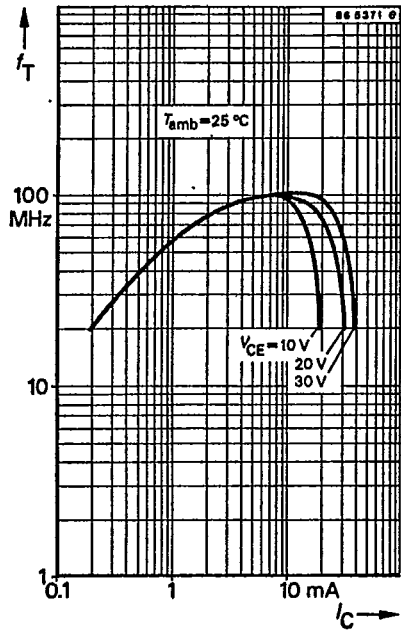
Collector saturation RF voltage

$I_C = 25 mA, T_J = 150^{\circ}C$	$V_{CEsat HF}$	20			V
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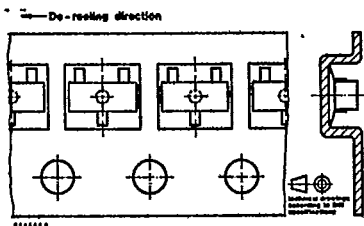


Fig. 7.4 Standard taped SOT 23

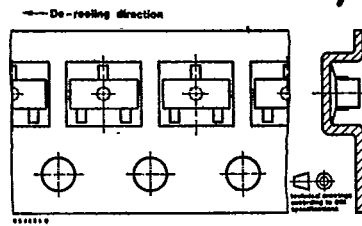


Fig. 7.6 Reverse taped SOT 23

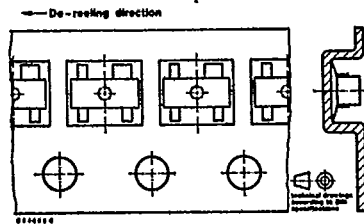


Fig. 7.5 Standard taped SOT 143

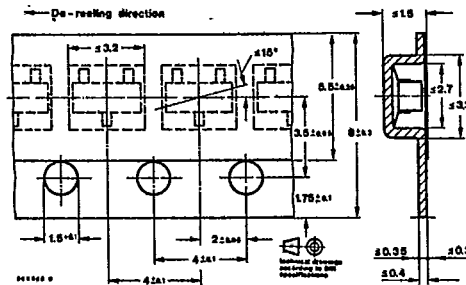


Fig. 7.7 Dimensions of tape in mm

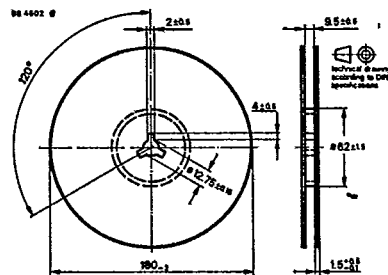


Fig. 7.8 Dimensions of reel in mm

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
119880	8.1.	Isolating washer thickness 60 µm	12A 3 DIN 41 869 JEDEC TO 126 (SOT 32)
564542	8.2.	Isolating washer thickness 50 µm	14A 3 DIN 41 869 JEDEC TO 220 (SOT 78)
912884	8.3	Isolating washer thickness 50 µm	15A 3 DIN 41 869 (TOP3) for clip mounting
191 131	8.4	Isolating washer thickness 50 µm	15A 3 DIN 41 869 (TOP3) for screw mounting
191 140	8.5	Mounting clip	15A 3 DIN 41 869 (TOP3)
569524	8.6	Isolating washer thickness 100 µm + 50 µm	3B 2 DIN 41 872 JEDEC TO 3 Devices with high reverse voltage