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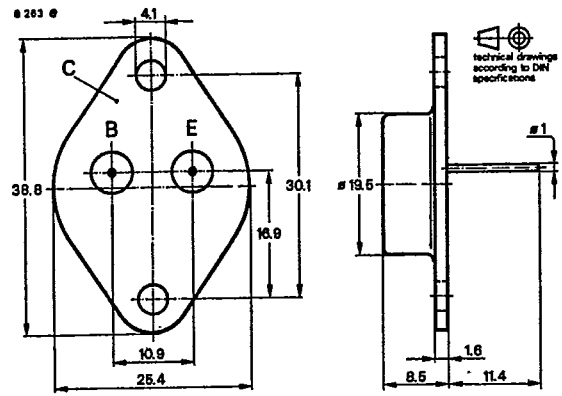
Silicon NPN Power Transistors

Applications: Horizontal deflection circuits in colour TV-receivers

Features:

- High reverse voltage
- High peak power
- Power dissipation 12.5 W

Dimensions in mm



Collector connected with case

Standard metal case
3 B2 DIN 41 872
JEDEC TO 3
Weight max. 20 g

Accessories

Isolating washer No. 569524

Absolute maximum ratings

	BU 207	BU 208	BU 209		
Collector-emitter voltage	V_{CE0}	600	700	800	V
	$V_{CES}^{1)}$	1300	1500	1700	V
Collector current, average	I_{CAV}	5	5	4	A
Collector peak current	$I_{CM}^{2)}$		7.5		A
Base peak current	I_{BM}		4.0		A
Negative base peak current	$-I_{BM}$		2.5		A

¹⁾ Flash-over voltage, non repetitive
 BU 207 max. 1430 V
 BU 208 max. 1650 V
 BU 209 max. 1800 V

²⁾ Flash-over current, non repetitive
 BU 207 max. 10 A
 BU 208 max. 10 A
 BU 209 max. 9 A

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	BU 207	BU 208	BU 209
Negative base current, average $t_{av} \leq 20$ ms	$-I_{BAV}$	0.1	A
Total power dissipation $T_{case} \leq 95$ °C	P_{tot}	12.5	W
Junction temperature	T_j	115	°C
Storage temperature range	T_{stg}	-65 ... +115	°C
Maximum thermal resistance			
Junction case	R_{thJC}	1.6	K/W
Characteristics			
$T_{case} = 25$ °C			
Collector cut-off current			
$V_{CES} = 1300$ V	BU 207	I_{CES}	0.5 mA
$V_{CES} = 1500$ V	BU 208	I_{CES}	0.5 mA
$V_{CES} = 1700$ V	BU 209	I_{CES}	0.5 mA
Collector-emitter breakdown voltage			
$I_C = 100$ mA	BU 207	$V_{(BR)CEO}^{(1)}$	600 V
	BU 208	$V_{(BR)CEO}^{(1)}$	700 V
	BU 209	$V_{(BR)CEO}^{(1)}$	800 V
Emitter-base breakdown voltage			
$I_E = 100$ mA		$V_{(BR)EBO}$	5 V
Collector-emitter saturation voltage			
$I_C = 4.5$ A, $I_B = 2$ A	BU 207, BU 208	$V_{CEsat}^{(1)}$	5 V
$I_C = 3$ A, $I_B = 1.3$ A	BU 209	$V_{CEsat}^{(1)}$	5 V
Base-emitter saturation voltage			
$I_C = 4.5$ A, $I_B = 2$ A	BU 207, BU 208	$V_{BEsat}^{(1)}$	1.5 V
$I_C = 3$ A, $I_B = 1.3$ A	BU 209	$V_{BEsat}^{(1)}$	1.5 V
DC forward current transfer ratio			
$V_{CE} = 5$ V, $I_C = 4.5$ V	BU 207, BU 208	h_{FE}	2.25
$V_{CE} = 5$ V, $I_C = 3$ V	BU 209	h_{FE}	2.25
Gain bandwidth product			
$V_{CE} = 5$ V, $I_C = 100$ mA, $f = 5$ MHz		f_T	7 MHz
Collector-base capacitance			
$V_{CB} = 10$ V, $f = 1$ MHz		C_{CBO}	125 pF

BU 207 · BU 208 · BU 209

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Switching characteristics

Min. Typ. Max.

Storage time

$I_C = 4.5 \text{ A}, I_B = 1.8 \text{ A}, L_B = 10 \mu\text{H}$

BU 207, BU 208

t_s

10

μs

$I_C = 3 \text{ A}, I_B = 1.5 \text{ A}, L_B = 10 \mu\text{H}$

BU 209

t_s

10

μs

Fall time

$I_C = 4.5 \text{ A}, I_B = 1.8 \text{ A}, L_B = 10 \mu\text{H}$

BU 207, BU 208

t_f

0.7

μs

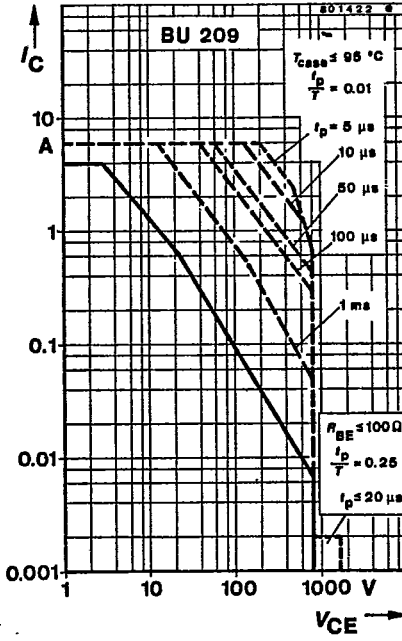
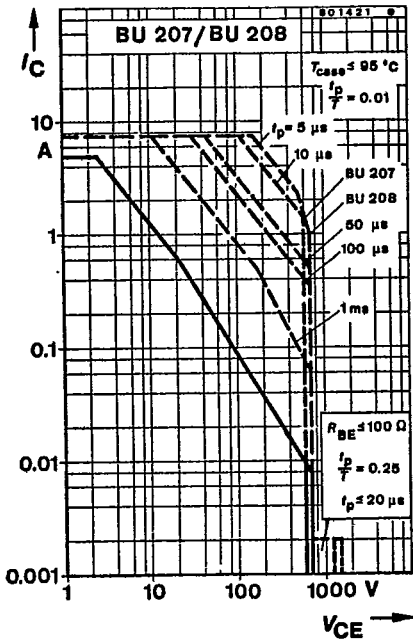
$I_C = 3 \text{ A}, I_B = 1.5 \text{ A}, L_B = 10 \mu\text{H}$

BU 209

t_f

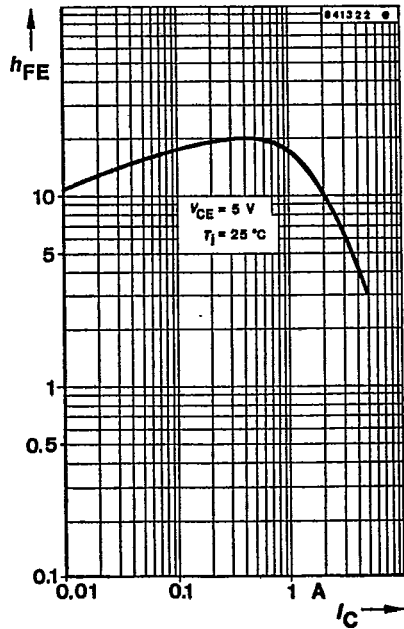
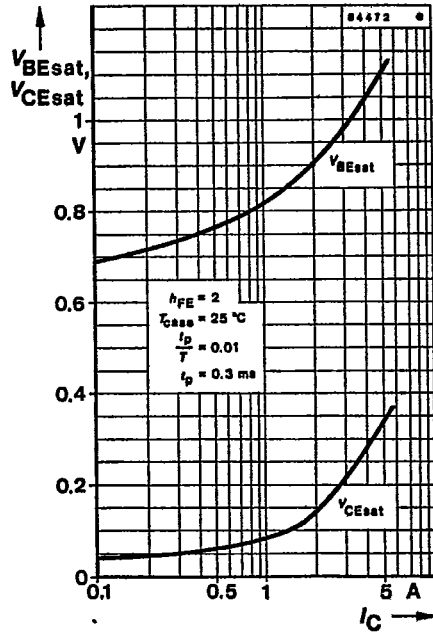
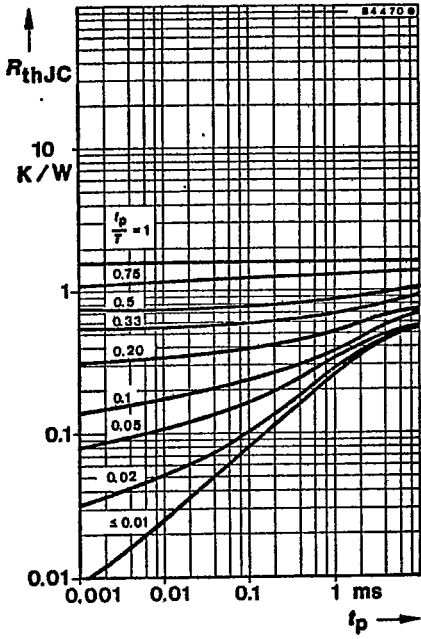
0.7

μs



BU 207 · BU 208 · BU 209

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T-91-20

A E G CORP

● 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

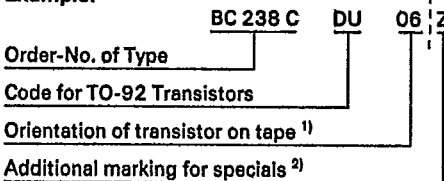
7.1. Taping of TO-92 transistors

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

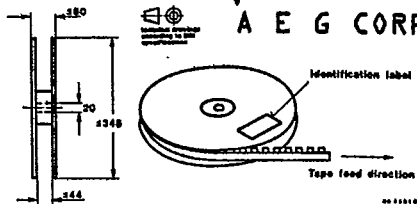


Fig. 7.1. Dimensions of reel in mm

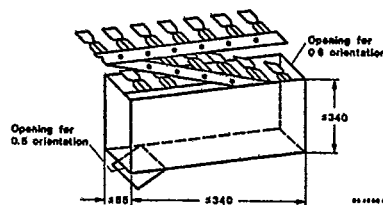


Fig. 7.2. Dimension of box for Zigzag folding in mm

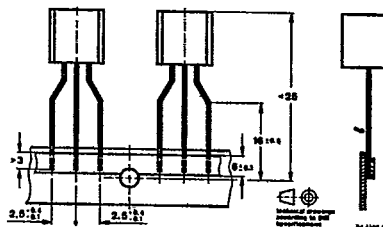


Fig. 7.3. Dimensions of tape in mm

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.

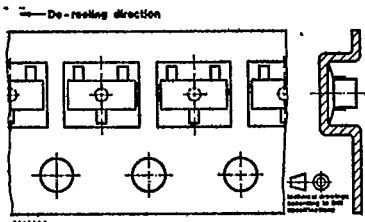


Fig. 7.4 Standard taped SOT 23

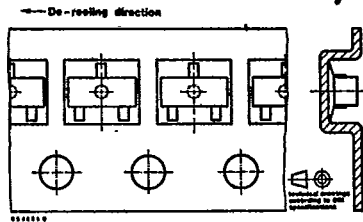


Fig. 7.6 Reverse taped SOT 23

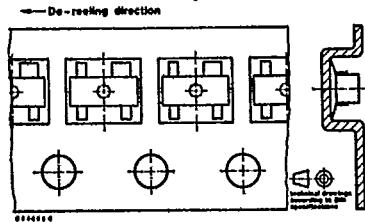


Fig. 7.5 Standard taped SOT 143

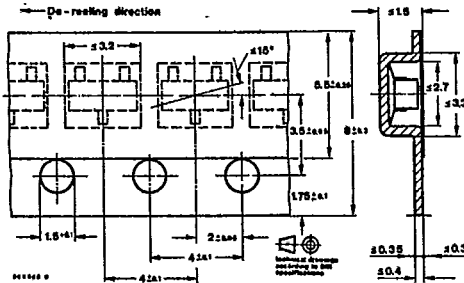


Fig. 7.7 Dimensions of tape in mm

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.

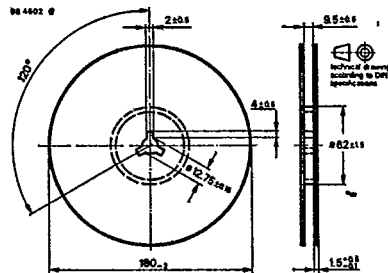


Fig. 7.8 Dimensions of reel in mm

8. Accessories

Number	Fig.	Designation
119880	8.1.	Isolating washer thickness 60 µm
564542	8.2.	Isolating washer thickness 50 µm
912884	8.3	Isolating washer thickness 50 µm
191131	8.4	Isolating washer thickness 50 µm
191140	8.5	Mounting clip
569524	8.6	Isolating washer thickness 100 µm + 50 µm

7.2.2 Quantity of devices

3000 devices per reel

For case

- 12A 3 DIN 41 869
JEDEC TO 126 (SOT 32)
 - 14A 3 DIN 41 869
JEDEC TO 220 (SOT 78)
 - 15A 3 DIN 41 869
(TOP3) for clip mounting
 - 15A 3 DIN 41 869
(TOP3) for screw mounting
 - 15A 3 DIN 41 869
(TOP3)
 - 3B 2 DIN 41 872
JEDEC TO 3
- Devices with high reverse voltage