



TELEFUNKEN electronic
Creative Technologies

BUV 48T

T-33-13

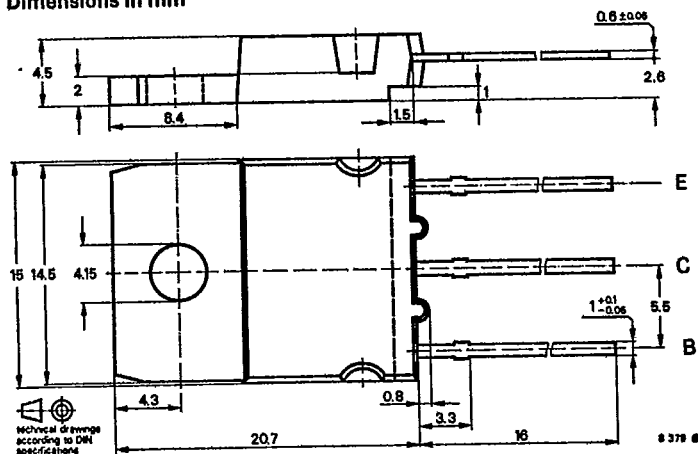
Silicon NPN Power Transistors

Applications: Switching mode power supply, inverters, motor control and relay driver

Features:

- In triple diffusion technique
- Glass passivation
- High reverse voltage
- Short switching times
- Power dissipation 150 W

Dimensions in mm



Collector connected with
metallic surface

Standard plastic case
15 A 3 DIN 41 869
TOP 3

Weight max. 5.5 g

Accessories:

Isolating washer No. 191 131
Mounting clip No. 191 940

Absolute maximum ratings

Collector-emitter voltage	V_{CEO}	400	V
	V_{CES}	850	V
Emitter-base voltage	V_{EBO}	7	V
Collector current, average	I_{CAV}	15	A
Collector peak current	I_{CM}	30	A
Base current, average	I_{BAV}	5	A
Base peak current	I_{BM}	20	A
	$-I_{BM}$	4	A

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Total power dissipation $T_{\text{case}} \leq 25\text{ }^{\circ}\text{C}$	P_{tot}	150	W	
Junction temperature	T_{j}	175	$^{\circ}\text{C}$	
Storage temperature range	T_{stg}	-65 ... +175	$^{\circ}\text{C}$	
Maximum thermal resistance				
Junction case	R_{thJC}	1.0	K/W	
Characteristics		Min.	Typ.	Max.
$T_{\text{case}} = 25\text{ }^{\circ}\text{C}$, unless otherwise specified				
Collector cut-off current				
$V_{\text{CE}} = 850\text{ V}$	I_{CES}			0.5 mA
$T_{\text{case}} = 125\text{ }^{\circ}\text{C}$, $V_{\text{CE}} = 850\text{ V}$	I_{CES}			2.0 mA
Collector-emitter breakdown voltage $I_{\text{C}} = 100\text{ mA}$, $L_{\text{C}} = 125\text{ mH}$	$V_{(\text{BR})\text{CEO}}^{1)}$	400		V
Emitter-base breakdown voltage $I_{\text{E}} = 1\text{ mA}$	$V_{(\text{BR})\text{EBO}}$	7		V
Collector-emitter saturation voltage $I_{\text{C}} = 10\text{ A}$, $I_{\text{B}} = 2\text{ A}$	$V_{\text{CEsat}}^{1)}$			0.9 V
Base-emitter saturation voltage $I_{\text{C}} = 10\text{ V}$, $I_{\text{B}} = 2\text{ A}$	$V_{\text{BEsat}}^{1)}$			1.6 V
DC forward current transfer ratio $V_{\text{CE}} = 5\text{ V}$, $I_{\text{C}} = 15\text{ A}$	h_{FE}	6		
Gain bandwidth product $V_{\text{CE}} = 10\text{ V}$, $I_{\text{C}} = 1\text{ A}$	f_{T}		5	MHz
Collector-base capacitance $V_{\text{CB}} = 10\text{ V}$, $I_{\text{E}} = 0$, $f = 1\text{ MHz}$	C_{CBO}		250	pF
Dynamic saturation voltage $I_{\text{C}} = 7\text{ A}$, $I_{\text{B}} = 2\text{ A}$ $t = 3\text{ }\mu\text{s}$	V_{CEsatdyn}		1.5	V

$$^{1)} \frac{t_p}{T} = 0.02, t_p = 0.3\text{ ms}$$

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Switching characteristics

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

Min. Typ. Max.

Resistive load

 $V_{\text{CE}} = 150\text{ V}$ $I_{\text{C}} = 10\text{ A}$, $I_{\text{B1}} = -I_{\text{B2}} = 2\text{ A}$

Turn on time

 t_{on} 0.5 μs

Storage time

 t_{s} 3.0 μs

Fall time

 t_{f} 0.5 μs

Inductive load

 $V_{\text{CE}} = 300\text{ V}$, $-V_{\text{BEoff}} = 5\text{ V}$, $L_{\text{B}} = 3\text{ }\mu\text{H}$ $I_{\text{C}} = 10\text{ A}$, $I_{\text{Bend}} = 2\text{ A}$

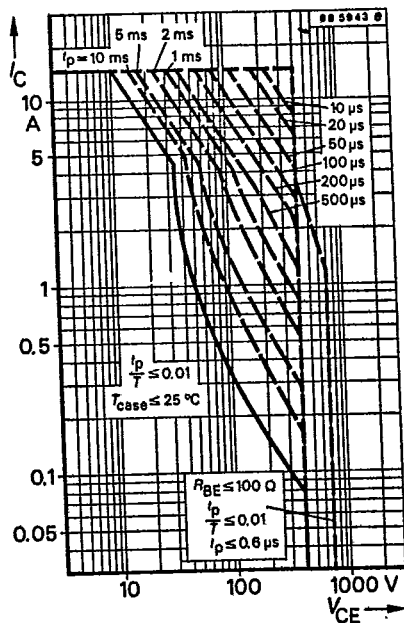
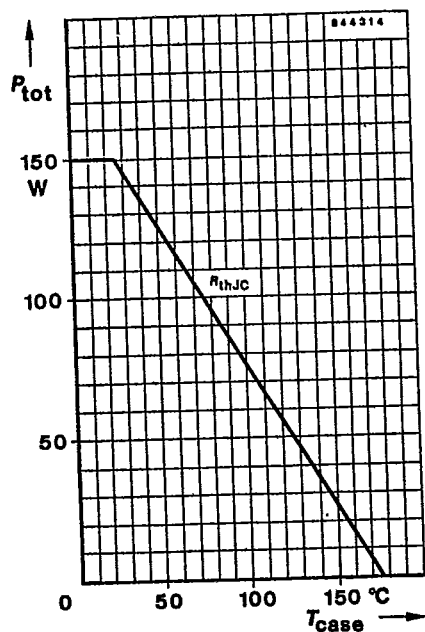
Storage time

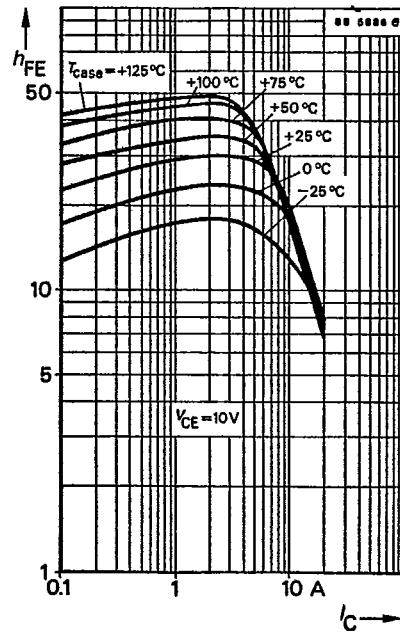
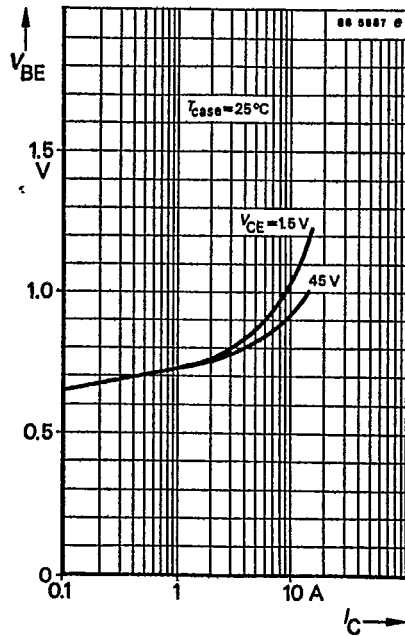
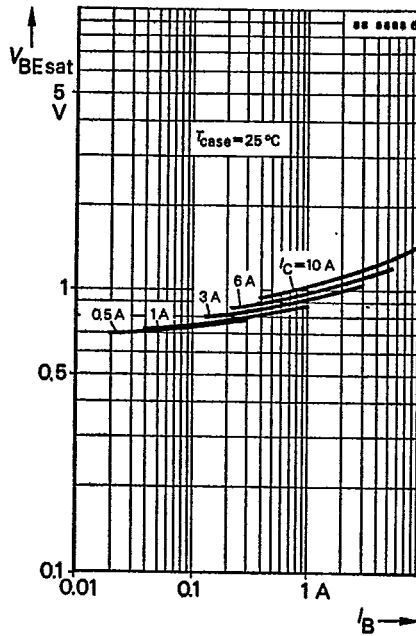
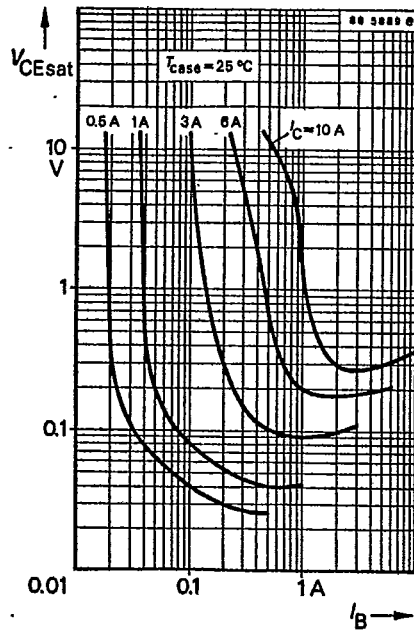
 $T_{\text{case}} = 100^\circ\text{C}$ t_{s} 3 μs 5 μs

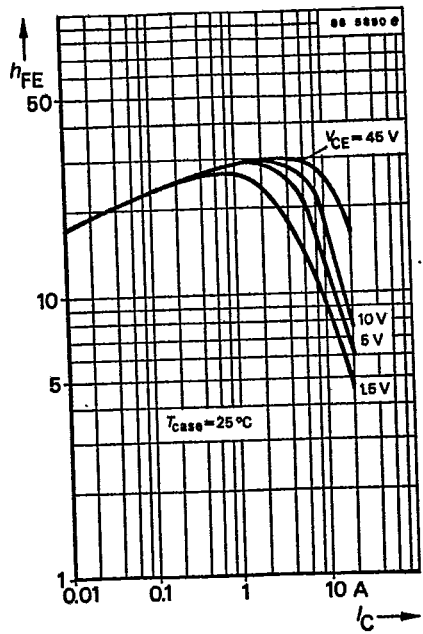
Fall time

 $T_{\text{case}} = 100^\circ\text{C}$ t_{f}

0.1

0.4 μs 





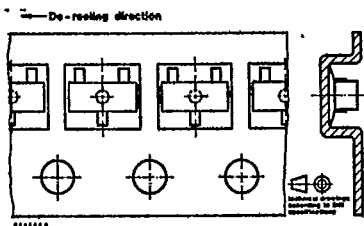


Fig. 7.4 Standard taped SOT 23

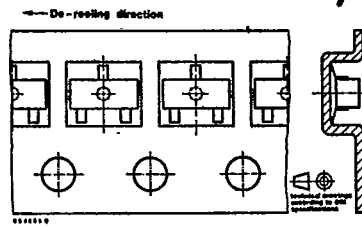


Fig. 7.6 Reverse taped SOT 23

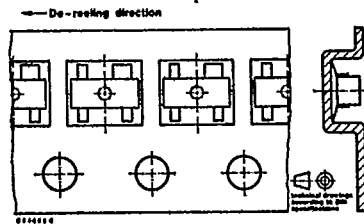


Fig. 7.5 Standard taped SOT 143

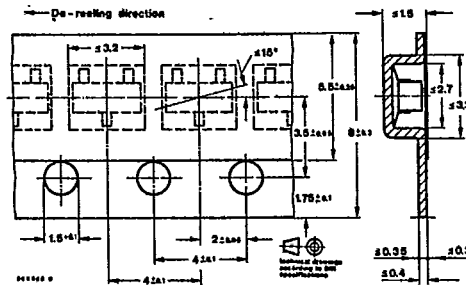


Fig. 7.7 Dimensions of tape in mm

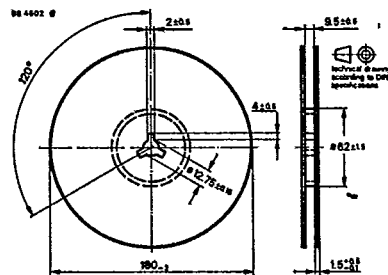


Fig. 7.8 Dimensions of reel in mm

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