



BDY 45 · BDY 46 · BDY 47

Silizium-NPN-Leistungstransistoren Silicon NPN Power Transistors

Anwendungen: Spannungsregler, Inverter, getaktete Netzgeräte
Applications: Voltage regulator, inverter, switching mode power supply

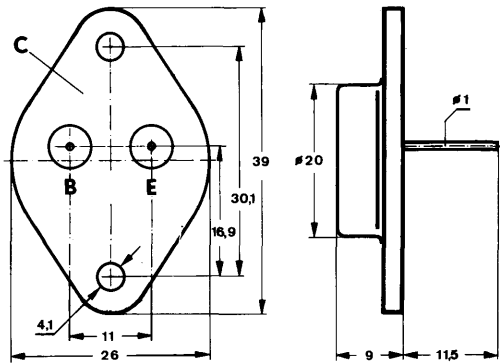
Besondere Merkmale:

- Hohe Sperrspannungen
- Hohe Stromverstärkung
- Kurze Schaltzeiten
- Verlustleistung 95 W

Features:

- High reverse voltages
- High current gain
- Short switching times
- Power dissipation 95 W

Abmessungen in mm Dimensions in mm



Kollektor mit Gehäuse verbunden
Collector connected with case

Zubehör Accessories

Isolierscheiben Best. Nr. 515 390
Isolating washers Best. Nr. 562 897

Normgehäuse
Case
3 B 2 DIN 41872
JEDEC TO 3
Gewicht · Weight
max. 20 g

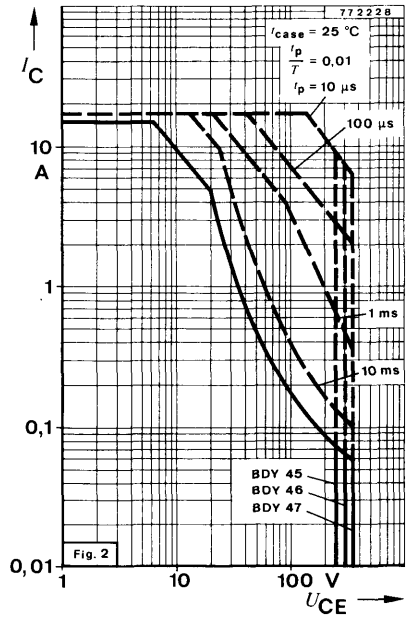
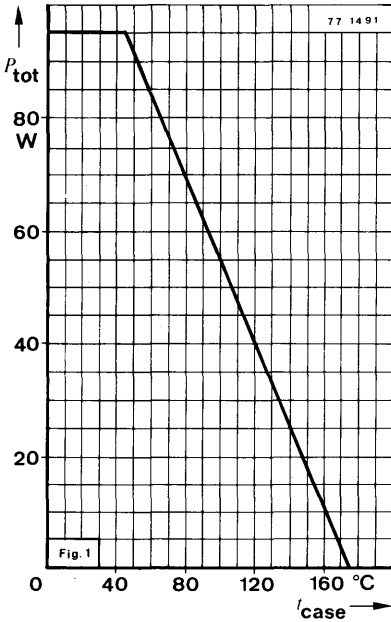
Absolute Grenzwerte Absolute maximum ratings

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Kollektor-Basis-Sperrspannung Collector-base voltage	U_{CBO}	400	600	750	V
Kollektor-Emitter-Sperrspannung Collector-emitter voltage $I_B = 0$	U_{CEO} U_{CES}	250 400	300 600	350 750	V V
Emitter-Basis-Sperrspannung Emitter-base voltage	U_{EBO}		7		V

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Kollektorstrom <i>Collector current</i>	I_C	15	A
Kollektorspitzenstrom <i>Collector peak current</i>	I_{CM}	17	A
Basisstrom <i>Base current</i>	I_B	5	A
Basisspitzenstrom <i>Base peak current</i>	I_{BM} $-I_{BM}$	7 7	A A
Gesamtverlustleistung <i>Total power dissipation</i> $U_{CE} \leq 20\text{V}, t_{case} \leq 45^\circ\text{C}$	P_{tot}	95	W
Sperrschichttemperatur <i>Junction temperature</i>	t_j	175	$^\circ\text{C}$
Lagerungstemperaturbereich <i>Storage temperature range</i>	t_{stg}	-65...+175	$^\circ\text{C}$



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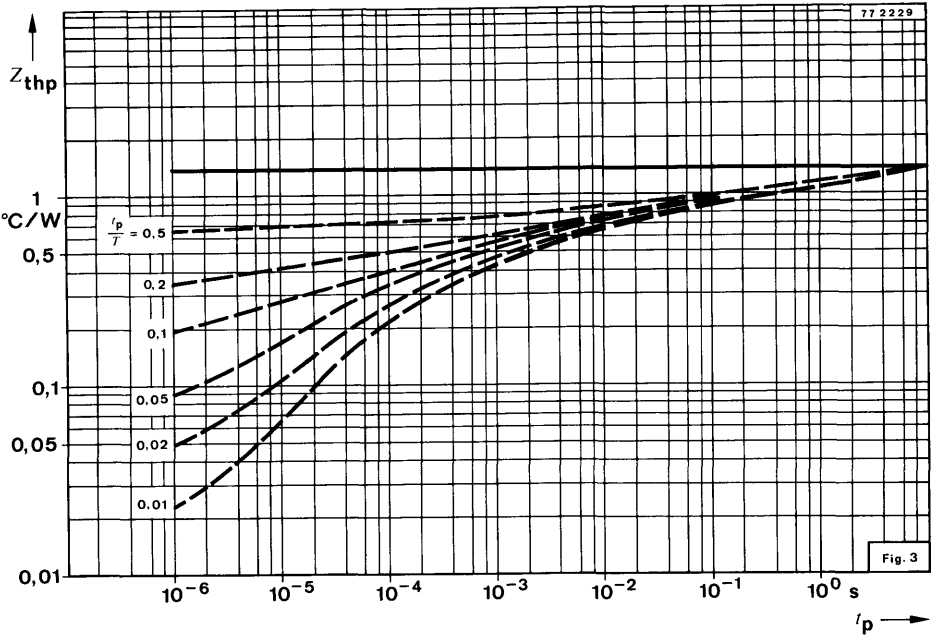


Fig. 3

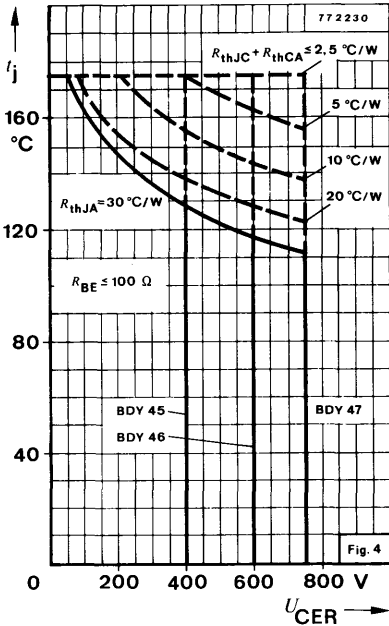


Fig. 4

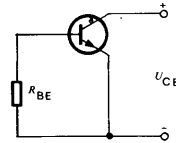


Fig. 5 77 2181

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Wärmewiderstand Thermal resistance

	Min.	Typ.	Max.
Sperrschicht-Gehäuse Junction case			1,37 °C/W

Statische Kenngrößen DC characteristics

$t_{\text{case}} = 25\text{ °C}$, falls nicht anders angegeben
unless otherwise specified

Kollektorreststrom

Collector cutoff current

U_{CES}	I_{CES}		200	μA
$t_{\text{case}} = 150\text{ °C}, U_{\text{CES}}$	I_{CES}		2,5	mA

Kollektor-Basis-Durchbruchspannung

Collector base breakdown voltage

$I_{\text{C}} = 1\text{ mA}$

	BDY 45			
$U_{(\text{BR})\text{CBO}}$	400			V
$U_{(\text{BR})\text{CBO}}$	600			V
$U_{(\text{BR})\text{CBO}}$	750			V

Kollektor-Emitter-Durchbruchspannung

Collector emitter breakdown voltage

$I_{\text{C}} = 200\text{ mA}$

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$U_{(\text{BR})\text{CEO}}$	250			V
$U_{(\text{BR})\text{CEO}}$	300			V
$U_{(\text{BR})\text{CEO}}$	350			V

Emitter-Basis-Durchbruchspannung

Emitter base breakdown voltage

$I_{\text{E}} = 2\text{ mA}$

$U_{(\text{BR})\text{EBO}}$	7			V

Kollektor-Sättigungsspannung

Collector saturation voltage

$I_{\text{C}} = 15\text{ A}, I_{\text{B}} = 5\text{ A}$

U_{CEsat}			1,5	V

Basis-Sättigungsspannung

Base saturation voltage

$I_{\text{C}} = 15\text{ A}, I_{\text{B}} = 5\text{ A}$

U_{BEsat}			2	V

Kollektor-Basis-Gleichstromverhältnis

DC forward current transfer ratio

$U_{\text{CE}} = 2\text{ V}, I_{\text{C}} = 2\text{ A}$

$U_{\text{CE}} = 2\text{ V}, I_{\text{C}} = 10\text{ A}$

h_{FE}	20			
h_{FE}	5			

Transitfrequenz

Gain bandwidth product

$U_{\text{CE}} = 10\text{ V}, I_{\text{C}} = 500\text{ mA}, f = 10\text{ MHz}$

f_{T}	10	13		MHz

Kollektor-Basis-Kapazität

Collector base capacitance

$U_{\text{CB}} = 10\text{ V}, f = 1\text{ MHz}$

C_{CBO}			200	pF

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Schaltzeiten Switching characteristics

Min. Typ. Max.

$I_C = 5 \text{ A}$, $I_{B1} \approx -I_{B2} = 1 \text{ A}$, $t_{\text{case}} = 25^\circ\text{C}$, siehe Meßschaltung
see test circuit

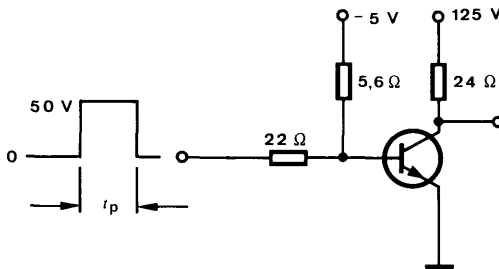
Einschaltzeit Turn-on time	t_{on}	0,5	μs
Abfallzeit Fall time	t_f	1	μs
Ausschaltzeit	t_{off}	3,5	μs

$$R_G = 50 \Omega$$

$$\frac{t_p}{T} = 0,01$$

$$t_p = 20 \mu\text{s}$$

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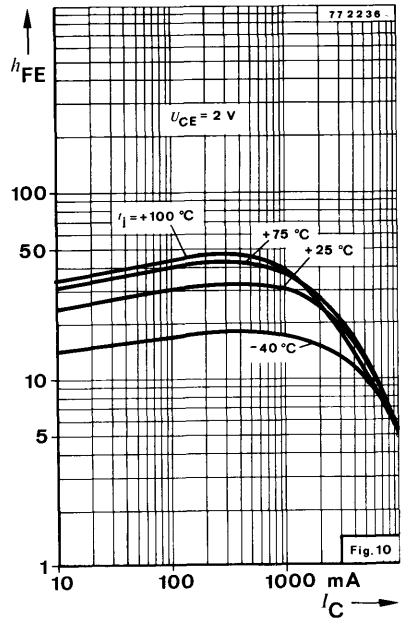
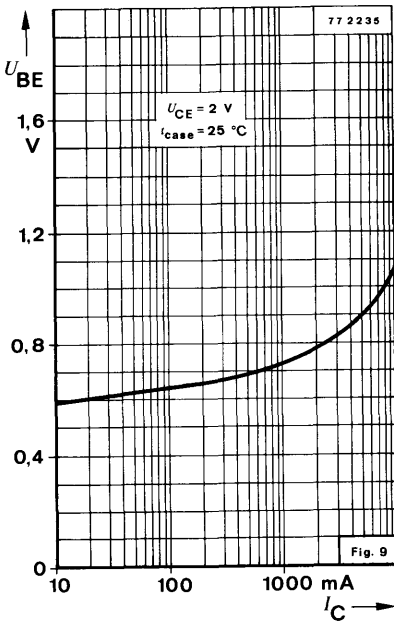
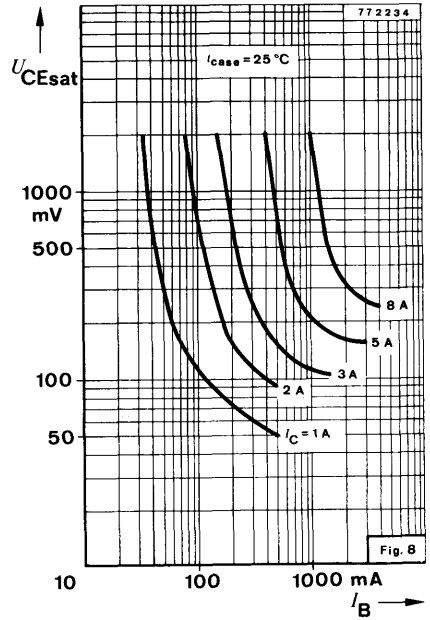
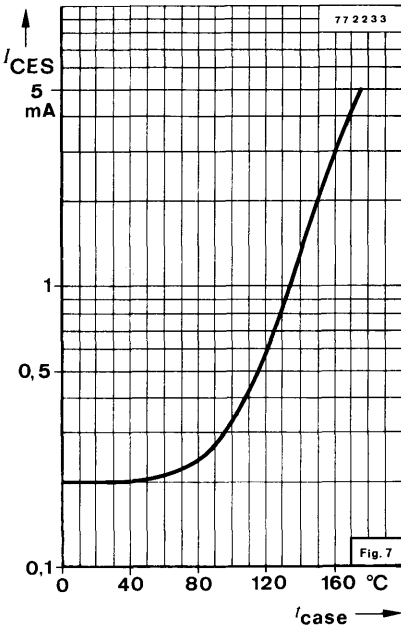


Oszilloskop:
Oscilloscope:

$R_L > 100 \text{ k}\Omega$
 $t_r < 15 \text{ ns}$

Fig. 6 Meßschaltung für:
Test circuit for: t_{on} , t_f , t_{off}

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