Silicon PNP Transistor

BD176

45V / 3A

DATASHEET

OEM – Telefunken

Source: Telefunken Databook 1975

BD 176 · BD 178 · BD 180

Silizium-PNP-Epibasis-Leistungstransistoren
Silicon PNP Epibase Power Transistors

Anwendungen: Audio-Verstärker, -Treiber und -Endstufen
Allgemein im NF-Bereich
Applications: *Audio amplifier, driver and output stages*
General in AF-range

Besondere Merkmale:

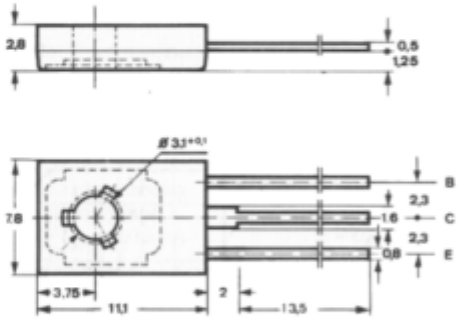
- Hohe Spitzenleistung
- Verlustleistung 30 W
- Gepaart lieferbar
- BD 176, BD 178, BD 180 sind komplementär zu BD 175, BD 177, BD 179

Features:

- *High peak power*
- *Power dissipation 30 W*
- *Matched pairs available*
- *BD 176, BD 178, BD 180 are complementary to BD 175, BD 177, BD 179*

Vorläufige technische Daten · *Preliminary specifications*

Abmessungen in mm
Dimensions in mm



Kollektor mit metallischer Montagefläche verbunden
Collector connected with metallic surface

Zubehör
Accessories

Isolierscheibe *Isolating washer*	Best. Nr. 119 880
Zahnscheibe *Lock washer*	Best. Nr. 119 881

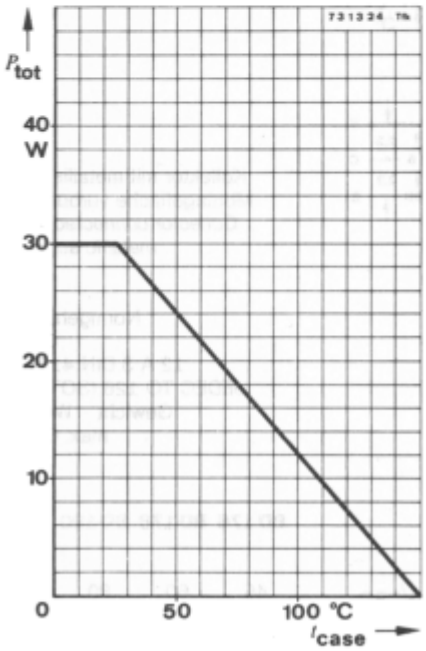
Normgehäuse
Case
12 A 3 DIN 41 869
JEDEC TO 126 (SOT 32)
Gewicht · *Weight*
max. 0,8 g

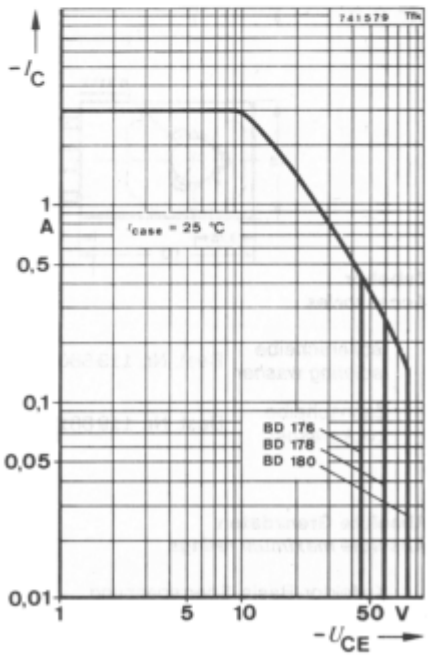
Absolute Grenzdaten
Absolute maximum ratings

		BD 176	BD 178	BD 180	
Kollektor-Basis-Sperrspannung *Collector-base voltage*	$-U_{CBO}$	45	60	80	V
Kollektor-Emitter-Sperrspannung *Collector-emitter voltage*	$-U_{CEO}$	45	60	80	V
Emitter-Basis-Sperrspannung *Emitter-base voltage*	$-U_{EBO}$		5		V

BD 176 · BD 178 · BD 180

Kollektorstrom *Collector current*	$-I_C$	3	A
Kollektorspitzenstrom *Collector peak current*	$-I_{CM}$	6	A
Basisstrom *Base current*	$-I_B$	1	A
Gesamtverlustleistung *Total power dissipation* $t_{case} \leq 25\,°C$	P_{tot}	30	W
Sperrschichttemperatur *Junction temperature*	t_j	150	°C
Lagerungstemperaturbereich *Storage temperature range*	t_{stg}	−55...+150	°C
Anzugsdrehmoment *Tightening torque*	M_A [1]	70	N cm





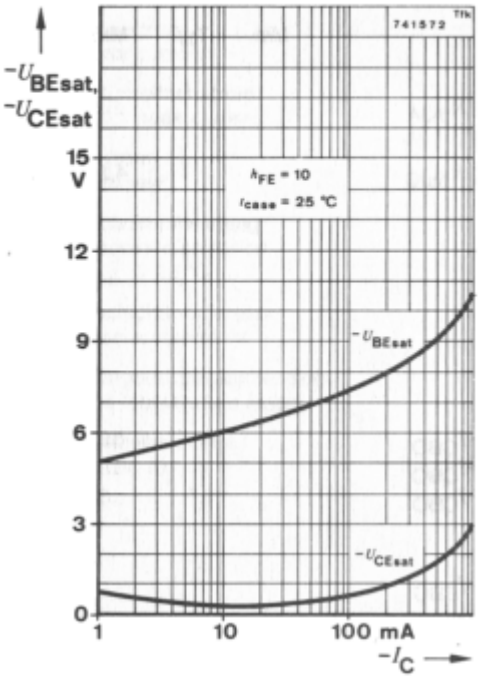
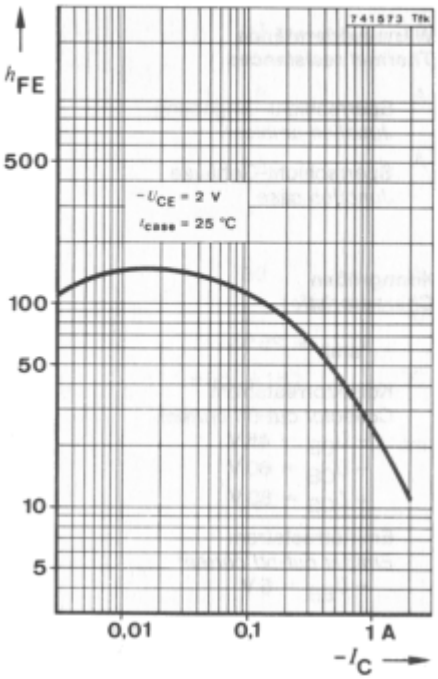
[1]) mit M 3-Schraube und Zahnscheibe
with screw M3 and lock washer

Best. Nr. 119 881

BD 176 · BD 178 · BD 180

Wärmewiderstände ***Thermal resistances***		Min.	Typ.	Max.	
Sperrschicht-Umgebung *Junction ambient*	R_{thJA}			100	°C/W
Sperrschicht-Gehäuse *Junction case*	R_{thJC}			4,16	°C/W

Kenngrößen ***Characteristics***					
t_{amb} = 25 °C					
Kollektorreststrom *Collector cut-off current*					
$-U_{CB}$ = 45 V	**BD 176**	$-I_{CBO}$		100	µA
$-U_{CB}$ = 60 V	**BD 178**	$-I_{CBO}$		100	µA
$-U_{CB}$ = 80 V	**BD 180**	$-I_{CBO}$		100	µA
Emitterreststrom *Emitter cut-off current*					
$-U_{EB}$ = 5 V		$-I_{EBO}$		1	mA
Kollektor-Emitter-Sperrspannung *Collector-emitter sustaining voltage*					
$-I_C$ = 100 mA	**BD 176**	$-U_{CEOsus}$ [1]	45		V
	BD 178	$-U_{CEOsus}$ [1]	60		V
	BD 180	$-U_{CEOsus}$ [1]	80		V
Kollektor-Sättigungsspannung *Collector saturation voltage*					
$-I_C$ = 1 A, $-I_B$ = 100 mA		$-U_{CEsat}$ [1]		800	mV
Basis-Emitter-Spannung *Base-emitter voltage*					
$-U_{CE}$ = 2 V, $-I_C$ = 1 A		$-U_{BE}$ [1]		1,3	V
Kollektor-Basis-Gleichstromverhältnis *DC forward current transfer ratio*					
$-U_{CE}$ = 2 V, $-I_C$ = 150 mA		h_{FE} [1]	40	236	
$-U_{CE}$ = 2 V, $-I_C$ = 1 A		h_{FE} [1]	15		
Für Paare gilt das h_{FE}-Verhältnis *h_{FE} matched pair ratio*					
$-U_{CE}$ = 2 V, $-I_C$ = 150 mA [1]				1,4	
Transitfrequenz *Gain bandwidth product*					
$-U_{CE}$ = 10 V, $-I_C$ = 250 mA, f = 1 MHz		f_T	3		MHz

[1] $\frac{t_p}{T}$ = 0,02, t_p = 0,3 ms

BD 176 · BD 178 · BD 180