Silicon NPN Transistor

BD165

45V / 1,5A

DATASHEET

OEM – Telefunken

Source: Telefunken Databook 1975

Datasheet Rev. 1.3 – 12/18 – data without warranty / liability

BD 165 · BD 167 · BD 169

Silizium-NPN-Epitaxial-Planar-Leistungstransistoren
Silicon NPN Epitaxial Planar Power Transistors

Anwendungen: Allgemein im NF-Bereich
Applications: *General in AF-range*

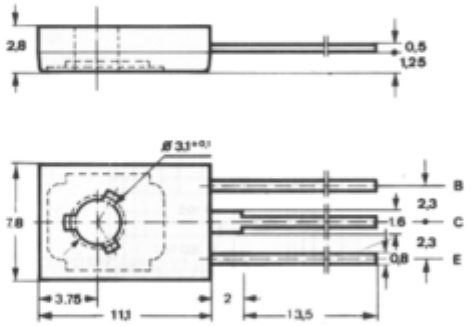
Besondere Merkmale:

- Verlustleistung 20 W
- Gepaart lieferbar
- BD 165, BD 167, BD 169 sind komplementär zu BD 166, BD 168, BD 170

- *Power dissipation 20 W*
- *Matched pairs available*
- *BD 165, BD 167, BD 169 are complementary to BD 166, BD 168, BD 170*

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

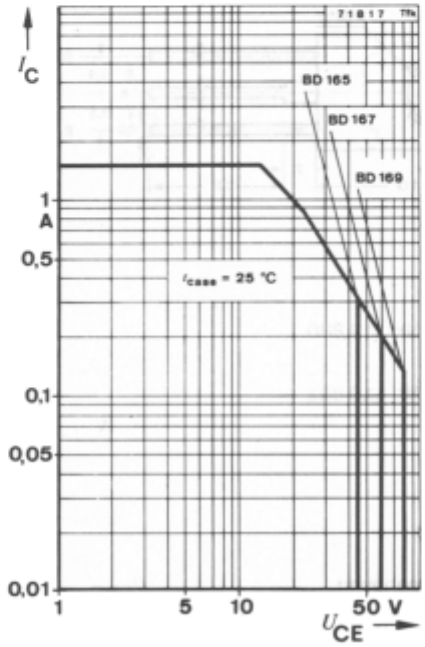
Normgehäuse
Case
12 A 3 DIN 41 869
JEDEC TO 126 (SOT 32)
Gewicht · *Weight*
max. 0,8 g

Absolute Grenzdaten
Absolute maximum ratings

		BD 165	BD 167	BD 169	
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 165 · BD 167 · BD 169

Kollektorstrom *Collector current*	I_C	1,5	A
Kollektorspitzenstrom *Collector peak current*	I_{CM}	3	A
Basisstrom *Base current*	I_B	500	mA
Gesamtverlustleistung *Total power dissipation* $t_{case} \leq 25\,°C$	P_{tot}	20	W
Sperrschichttemperatur *Junction temperature*	t_j	150	°C
Lagerungstemperaturbereich *Storage temperature range*	t_{stg}	−65...+150	°C
Anzugsdrehmoment *Tightening torque*	M_A [1]	70	N cm

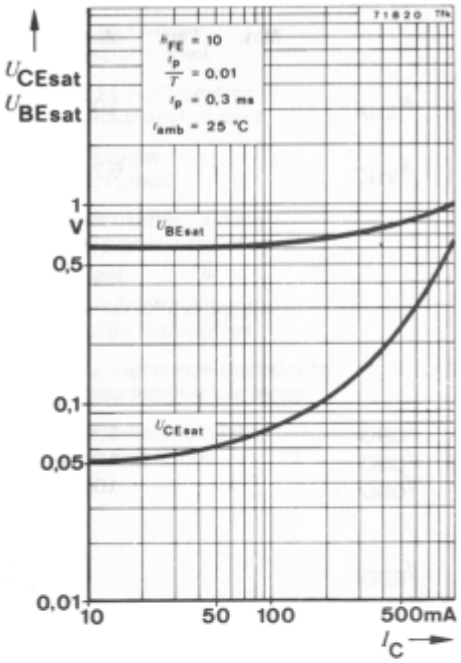
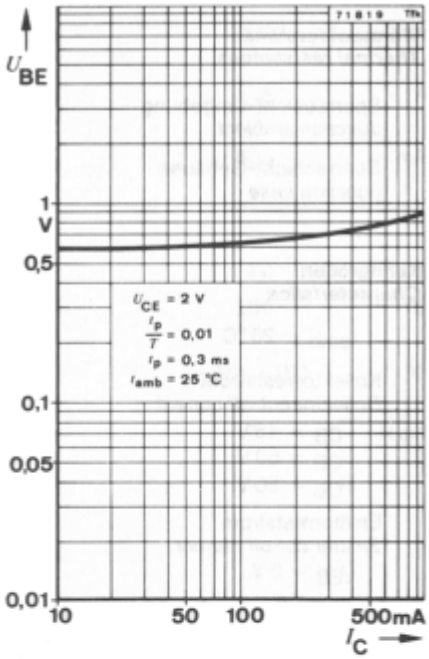
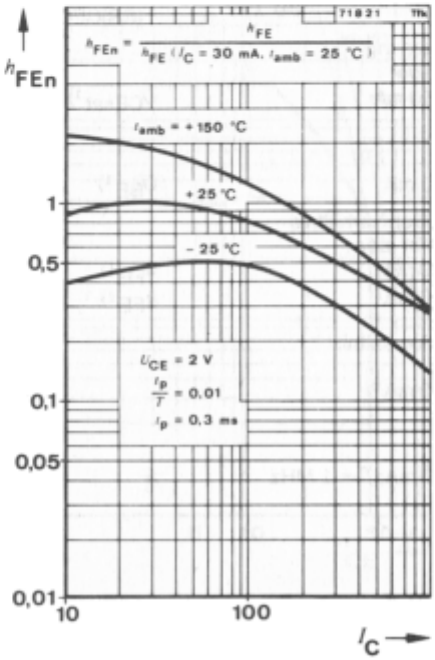


[1]) mit M3-Schraube und Zahnscheibe
with screw M3 and lock washer

Best. Nr. 119 881

BD 165 · BD 167 · BD 169

Wärmewiderstände ***Thermal resistances***			Min.	Typ.	Max.	
Sperrschicht-Umgebung *Junction ambient*		R_{thJA}			100	°C/W
Sperrschicht-Gehäuse *Junction case*		R_{thJC}			6,25	°C/W
Kenngrößen ***Characteristics***						
t_{amb} = 25 °C						
Kollektorreststrom *Collector cut-off current*						
U_{CB} = 45 V	**BD 165**	I_{CBO}			100	µA
U_{CB} = 60 V	**BD 167**	I_{CBO}			100	µA
U_{CB} = 80 V	**BD 169**	I_{CBO}			100	µA
Emitterreststrom *Emitter cut-off current*						
U_{EB} = 5 V		I_{EBO}			1	mA
Kollektor-Emitter-Durchbruchspannung *Collector-emitter breakdown voltage*						
I_C = 100 mA	**BD 165**	$U_{(BR)CEO}$ [1]	45			V
	BD 167	$U_{(BR)CEO}$ [1]	60			V
	BD 169	$U_{(BR)CEO}$ [1]	80			V
Kollektor-Sättigungsspannung *Collector saturation voltage*						
I_C = 500 mA, I_B = 50 mA		U_{CEsat} [1]			500	mV
Basis-Emitter-Spannung *Base-emitter voltage*						
U_{CE} = 2 V, I_C = 500 mA		U_{BE} [1]			950	mV
Kollektor-Basis-Gleichstromverhältnis *DC forward current transfer ratio*						
U_{CE} = 2 V, I_C = 150 mA		h_{FE} [1]	40			
U_{CE} = 2 V, I_C = 500 mA		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} = 2 V, I_C = 500 mA, f = 1 MHz		f_T	3			MHz

[1] $\frac{t_p}{T}$ = 0,01, t_p = 0,3 ms

BD 165 · BD 167 · BD 169