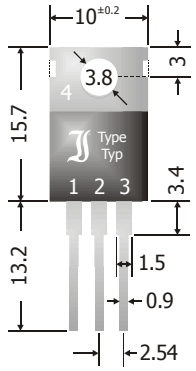
Diotec Semiconductor

TIP125 ... TIP127

PNP **Si-Epitaxial Planar Darlington Power Transistors**
Si-Epitaxial Planar Darlington-Leistungs-Transistoren **PNP**

Version 2006-10-17



Dimensions - Maße [mm]
1 = B 2/4 = C 3 = E

Max. power dissipation with cooling Max. Verlustleistung mit Kühlung	65 W
Collector current Kollektorstrom	5 A
Plastic case Kunststoffgehäuse	TO-220AB
Weight approx. Gewicht ca.	2.2 g
Plastic material has UL classification 94V-0 Gehäusematerial UL94V-0 klassifiziert	
Standard packaging in tubes Standard Lieferform in Stangen	

Maximum ratings (T_A = 25°C) **Grenzwerte (T_A = 25°C)**

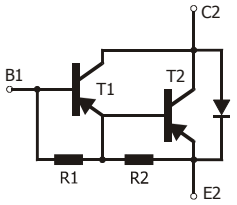
			TIP125	TIP126	TIP127
Collector-Emitter-volt. – Kollektor-Emitter-Spg.	B open	$-V_{CEO}$	60 V	80 V	100 V
Collector-Base-voltage – Kollektor-Basis-Spg.	E open	$-V_{CBO}$	60 V	80 V	100 V
Emitter-Base-voltage – Emitter-Basis-Spannung	C open	$-V_{EBO}$	5 V		
Power dissipation – Verlustleistung					
without cooling – ohne Kühlung	T_A = 25°C	P_{tot}	2 W [1])		
with cooling – mit Kühlung	T_C = 25°C	P_{tot}	65 W		
Collector current – Kollektorstrom (dc)		$-I_C$	5 A		
Peak Collector current – Kollektor-Spitzenstrom		$-I_{CM}$	8 A		
Base current – Basisstrom (dc)		$-I_B$	120 mA		
Junction temperature – Sperrschichttemperatur		T_j	-55...+150°C		
Storage temperature – Lagerungstemperatur		T_S	-55...+150°C		

Characteristics (T_j = 25°C) **Kennwerte (T_j = 25°C)**

		Min.	Typ.	Max.
DC current gain – Kollektor-Basis-Stromverhältnis [2])				
$-I_C$ = 0.5 A, $-V_{CE}$ = 3 V	h_{FE}	1000	–	–
$-I_C$ = 3 A, $-V_{CE}$ = 3 V	h_{FE}	1000	–	–
Small signal current gain – Kleinsignal-Stromverstärkung				
$-I_C$ = 3 A, $-V_{CE}$ = 4 V, f = 1 MHz	h_{fe}	4		

1 Valid, if leads are kept at ambient temperature at a distance of 5 mm from case
Gültig wenn die Anschlussdrähte in 5 mm Abstand vom Gehäuse auf Umgebungstemperatur gehalten werden
2 Tested with pulses t_p = 300 µs, duty cycle ≤ 2% – Gemessen mit Impulsen t_p = 300 µs, Schaltverhältnis ≤ 2%

Characteristics (T_j = 25°C) **Kennwerte (T_j = 25°C)**

		Min.	Typ.	Max.
Collector-Emitter saturation volt. – Kollektor-Emitter-Sättigungsspg. [2]				
- I_C = 3 A, I_B = 12 mA	- V_{CEsat}	–	–	2 V
- I_C = 5 A, I_B = 20 mA	- V_{CEsat}	–	–	4 V
Base-Emitter voltage – Basis-Emitter-Spannung [2]				
- I_C = 3 A, - V_{CE} = 3 V	- V_{BE}	–	–	2.5 V
Collector-Emitter cutoff current – Kollektor-Emitter-Reststrom				
- V_{CE} = 30 V, (B open) TIP125	- I_{CEO}	–	–	500 nA
- V_{CE} = 40 V, (B open) TIP126	- I_{CEO}	–	–	500 nA
- V_{CE} = 50 V, (B open) TIP127	- I_{CEO}	–	–	500 nA
Collector-Base cutoff current – Kollektor-Basis-Reststrom				
- V_{CB} = 60 V, (E open) TIP125	- I_{CBO}	–	–	200 nA
- V_{CB} = 80 V, (E open) TIP126	- I_{CBO}	–	–	200 nA
- V_{CB} = 100 V, (E open) TIP127	- I_{CBO}	–	–	200 nA
Collector-Base Capacitance – Kollektor-Basis-Kapazität				
- V_{CB} = 10 V, I_E = i_e = 0, f = 100 kHz	C_{CB0}	–	–	200 pF
Thermal resistance junction to ambient air Wärmewiderstand Sperrschicht – umgebende Luft	R_{thA}	< 63 K/W [1]		
Thermal resistance junction to case Wärmewiderstand Sperrschicht – Gehäuse	R_{thC}	< 3 K/W		
Admissible torque for mounting Zulässiges Anzugsdrehmoment	M4	9 ± 10% lb.in. 1 ± 10% Nm		
Recommended complementary NPN transistors Empfohlene komplementäre NPN-Transistoren		TIP120 ... TIP122		
Equivalent Circuit – Ersatzschaltbild				

2 Tested with pulses t_p = 300 µs, duty cycle ≤ 2% – Gemessen mit Impulsen t_p = 300 µs, Schaltverhältnis ≤ 2%

1 Valid, if leads are kept at ambient temperature at a distance of 2 mm from case
Gültig wenn die Anschlussdrähte in 2 mm Abstand vom Gehäuse auf Umgebungstemperatur gehalten werden

