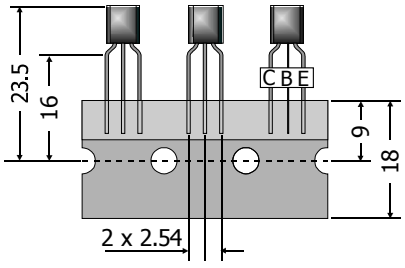
Diotec Semiconductor

PN2907 / PN2907A

PNP **Si-Epitaxial Planar Switching Transistors**
Si-Epitaxie-Planar-Schalttransistoren **PNP**

Version 2006-09-12



Dimensions - Maße [mm]

Power dissipation Verlustleistung	625 mW
Plastic case Kunststoffgehäuse	TO-92 (10D3)
Weight approx. – Gewicht ca.	0.18 g
Plastic material has UL classification 94V-0 Gehäusematerial UL94V-0 klassifiziert	
Standard packaging taped in ammo pack Standard Lieferform gegurtet in Ammo-Pack	

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

			PN2907 (2N2907)	PN2907A (2N2907A)
Collector-Emitter-volt. – Kollektor-Emitter-Spannung	B open	$-V_{CEO}$	40 V	60 V
Collector-Base-voltage – Kollektor-Basis-Spannung	E open	$-V_{CBO}$	60 V	
Emitter-Base-voltage – Emitter-Basis-Spannung	C open	$-V_{EBO}$	5 V	
Power dissipation – Verlustleistung		P_{tot}	625 mW [1])	
Collector current – Kollektorstrom (dc)		$-I_C$	600 mA	
Junction temperature – Sperrschichttemperatur Storage temperature – Lagerungstemperatur		T_j T_S	-55...+150°C -55...+150°C	

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

			Min.	Typ.	Max.
DC current gain – Kollektor-Basis-Stromverhältnis [2])					
$-I_C$ = 0.1 mA, $-V_{CE}$ = 10 V	PN2907	h_{FE}	35	–	–
	PN2907A	h_{FE}	75	–	–
$-I_C$ = 1 mA, $-V_{CE}$ = 10 V	PN2907	h_{FE}	50	–	–
	PN2907A	h_{FE}	100	–	–
$-I_C$ = 10 mA, $-V_{CE}$ = 10 V	PN2907	h_{FE}	75	–	–
	PN2907A	h_{FE}	100	–	–
$-I_C$ = 500 mA, $-V_{CE}$ = 10 V	PN2907	h_{FE}	30	–	–
	PN2907A	h_{FE}	50	–	–
$-I_C$ = 150 mA, $-V_{CE}$ = 10 V		h_{FE}	100	–	300
Collector-Emitter saturation voltage – Kollektor-Sättigungsspannung [2])					
$-I_C$ = 150 mA, $-I_B$ = 15 mA		$-V_{CEsat}$	–	–	0.4 V
$-I_C$ = 500 mA, $-I_B$ = 50 mA		$-V_{CEsat}$	–	–	1.6 V

1 Mounted on P.C. board with 3 mm² copper pad at each terminal
Montage auf Leiterplatte mit 3 mm² Kupferbelag (Lötpad) an jedem Anschluss
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.
Base-Emitter saturation voltage – Basis-Sättigungsspannung [2])					
- I_C = 150 mA, - I_B = 15 mA		- V_{BEsat}	–	–	1.3 V
- I_C = 500 mA, - I_B = 50 mA		- V_{BEsat}	–	–	2.6 V
Collector-Base cutoff current – Kollektor-Basis-Reststrom					
- V_{CB} = 50 V, (E open)	PN2907	- I_{CBO}	–	–	20 nA
	PN2907A	- I_{CBO}	–	–	10 nA
- V_{CB} = 50 V, T_j = 125°C, (E open)	PN2907	- I_{CBO}	–	–	20 µA
	PN2907A	- I_{CBO}	–	–	10 µA
Gain-Bandwidth Product – Transitfrequenz					
- V_{CE} = 20 V, - I_C = 50 mA, f = 100 MHz		f_T	200 MHz	–	–
Collector-Base Capacitance – Kollektor-Basis-Kapazität					
- V_{CB} = 10 V, I_E = i_e = 0, f = 1 MHz		C_{CBO}	–	–	8 pF
Emitter-Base Capacitance – Emitter-Basis-Kapazität					
- V_{EB} = 2 V, I_C = i_c = 0, f = 1 MHz		C_{EBO}	–	–	30 pf
Switching times – Schaltzeiten (between 10% and 90% levels)					
turn on	- V_{CC} = 30 V, - V_{BE} = 1.5 V - I_C = 150 mA, - I_{B1} = 15mA	t_{on}	–	–	45 ns
delay time		t_d	–	–	10 ns
rise time		t_r	–	–	40 ns
turn off	- V_{CC} = 30 V, - I_C = 150 mA, - I_{B1} = - I_{B2} = 15 mA	t_{off}	–	–	100 ns
storage time		t_s	–	–	80 ns
fall time		t_f	–	–	30 ns
Thermal resistance junction to ambient air Wärmewiderstand Sperrschicht – umgebende Luft		R_{thA}	< 200 K/W [1])		
Recommended complementary NPN transistors Empfohlene komplementäre NPN-Transistoren			PN2222 / PN2222A		

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

1 Mounted on P.C. board with 3 mm² copper pad at each terminal
Montage auf Leiterplatte mit 3 mm² Kupferbelag (Lötpad) an jedem Anschluss