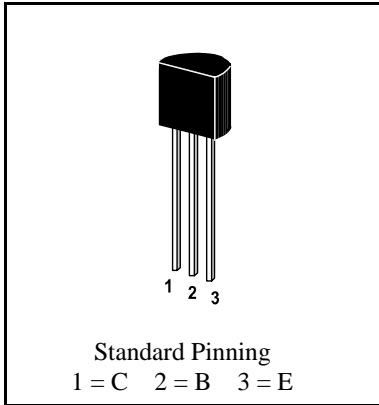


PNP

Si-Epitaxial Planar Transistors

PNP

Version 2004-01-20



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)

			2N3905, 2N3906
Collector-Emitter-voltage	B open	- V _{CE0}	40 V
Collector-Base-voltage	E open	- V _{CE0}	40 V
Emitter-Base-voltage	C open	- V _{EB0}	5 V
Power dissipation – Verlustleistung		P _{tot}	625 mW ¹⁾
Collector current – Kollektorstrom (dc)		- I _C	100 mA
Peak collector current – Kollektorspitzenstrom		- I _{CM}	200 mA
Junction temp. – Sperrschichttemperatur		T _j	150°C
Storage temperature – Lagerungstemperatur		T _s	- 55...+ 150°C

Characteristics (T_j = 25°C)

Kennwerte (T_j = 25°C)

		Min.	Typ.	Max.
Collector saturation volt. – Kollektor-Sättigungsspannung				
- I _C = 10 mA, - I _B = 1 mA	- V _{CEsat}	–	–	250 mV
- I _C = 50 mA, - I _B = 5 mA	- V _{CEsat}	–	–	400 mV
Base saturation voltage – Basis-Sättigungsspannung				
- I _C = 10 mA, - I _B = 1 mA	- V _{BEsat}	–	–	850 mV
- I _C = 50 mA, - I _B = 5 mA	- V _{BEsat}	–	–	950 mV
Collector cutoff current – Kollektorreststrom				
- V _{CE} = 30 V, - V _{EB} = 3 V	- I _{CEV}	–	–	50 nA
Emitter cutoff current – Emitterreststrom				
- V _{CE} = 30 V, - V _{EB} = 3 V	- I _{EBV}	–	–	50 nA

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 von Gehäuse auf Umgebungstemperatur gehalten werden

Characteristics ($T_j = 25^\circ\text{C}$)Kennwerte ($T_j = 25^\circ\text{C}$)

			Min.	Typ.	Max.
DC current gain – Kollektor-Basis-Stromverhältnis					
- $V_{CE} = 1\text{ V}$, - $I_C = 0.1\text{ mA}$	2N3905	h_{FE}	30	–	–
	2N3906	h_{FE}	60	–	–
- $V_{CE} = 1\text{ V}$, - $I_C = 1\text{ mA}$	2N3905	h_{FE}	40	–	–
	2N3906	h_{FE}	80	–	–
- $V_{CE} = 1\text{ V}$, - $I_C = 10\text{ mA}$	2N3905	h_{FE}	50	–	150
	2N3906	h_{FE}	100	–	300
- $V_{CE} = 1\text{ V}$, - $I_C = 50\text{ mA}$	2N3905	h_{FE}	30	–	–
	2N3906	h_{FE}	60	–	–
- $V_{CE} = 1\text{ V}$, - $I_C = 100\text{ mA}$	2N3905	h_{FE}	15	–	–
	2N3906	h_{FE}	30	–	–
Gain-Bandwidth Product – Transitfrequenz					
- $V_{CE} = 20\text{ V}$, - $I_C = 10\text{ mA}$, $f = 100\text{ MHz}$	2N3905	f_T	200 MHz	–	–
	2N3906	f_T	250 MHz	–	–
Collector-Base Capacitance – Kollektor-Basis-Kapazität					
- $V_{CB} = 5\text{ V}$, $I_E = i_e = 0$, $f = 100\text{ kHz}$		C_{CB0}	–	–	4.5 pF
Emitter-Base Capacitance – Emitter-Basis-Kapazität					
- $V_{EB} = 0.5\text{ V}$, $I_C = i_c = 0$, $f = 100\text{ kHz}$		C_{EB0}	–	–	10 pF
Noise figure – Rauschzahl					
- $V_{CE} = 5\text{ V}$, - $I_C = 100\text{ }\mu\text{A}$ $R_G = 1\text{ k}\Omega$ $f = 10\text{ Hz} \dots 15.7\text{ kHz}$	2N3905	F	–	–	5 dB
	2N3906	F	–	–	4 dB
Switching times – Schaltzeiten					
turn-on time	$I_{Con} = 10\text{ mA}$,	t_{on}	–	–	70
turn-off time	$I_{Bon} = -I_{Boff} = 1\text{ mA}$	t_{off}	–	–	300
Thermal resistance junction to ambient air Wärmewiderstand Sperrschicht – umgebende Luft			R_{thA}	200 K/W ¹⁾	
Recommended complementary NPN transistors Empfohlene komplementäre NPN-Transistoren				2N3903, 2N3904	

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 von Gehäuse auf Umgebungstemperatur gehalten werden

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