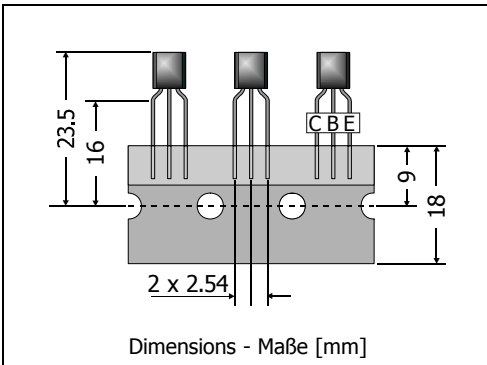


**2N5400 / 2N5401**

**General Purpose Si-Epitaxial Planar Transistors**  
**Si-Epitaxial Planar-Transistoren für universellen Einsatz**

**PNP** **PNP**

Version 2006-06-17



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 getupet in Ammo-Pack

**Maximum ratings (T<sub>A</sub> = 25°C)**

**Grenzwerte (T<sub>A</sub> = 25°C)**

		2N5400	2N5401	
Collector-Emitter-volt. – Kollektor-Emitter-Spannung	B open	- V <sub>CEO</sub>	120 V	150 V
Collector-Base-voltage – Kollektor-Basis-Spannung	E open	- V <sub>CBO</sub>	130 V	160 V
Emitter-Base-voltage – Emitter-Basis-Spannung	C open	- V <sub>EBO</sub>	5 V	
Power dissipation – Verlustleistung		P <sub>tot</sub>	625 mW <sup>1)</sup>	
Collector current – Kollektorstrom (dc)		- I <sub>C</sub>	600 mA	
Peak Collector current – Kollektor-Spitzenstrom		- I <sub>CM</sub>	1 A	
Base current – Basisstrom		- I <sub>B</sub>	100 mA	
Junction temperature – Sperrschichttemperatur		T <sub>j</sub>	-55...+150°C	
Storage temperature – Lagerungstemperatur		T <sub>s</sub>	-55...+150°C	

**Characteristics (T<sub>j</sub> = 25°C)**

**Kennwerte (T<sub>j</sub> = 25°C)**

		Min.	Typ.	Max.	
DC current gain – Kollektor-Basis-Stromverhältnis <sup>2)</sup>					
- I <sub>C</sub> = 1 mA, - V <sub>CE</sub> = 5 V	2N5400	h <sub>FE</sub>	30	–	
		h <sub>FE</sub>	40	–	
		h <sub>FE</sub>	40	–	
- I <sub>C</sub> = 10 mA, - V <sub>CE</sub> = 5 V	2N5401	h <sub>FE</sub>	50	–	
		h <sub>FE</sub>	60	–	
		h <sub>FE</sub>	50	–	
- I <sub>C</sub> = 50 mA, - V <sub>CE</sub> = 5 V	2N5401	h <sub>FE</sub>	50	–	
		h <sub>FE</sub>	60	–	
		h <sub>FE</sub>	50	–	
Collector-Base cutoff current – Kollektor-Basis-Reststrom					
- V <sub>CB</sub> = 100 V, (E open)	2N5400	- I <sub>CBO</sub>	–	–	100 nA
- V <sub>CB</sub> = 120 V, (E open)	2N5401	- I <sub>CBO</sub>	–	–	50 nA
- V <sub>CB</sub> = 100 V, T <sub>j</sub> = 100°C, (E open)	2N5400	- I <sub>CBO</sub>	–	–	100 µA
- V <sub>CB</sub> = 120 V, T <sub>j</sub> = 100°C, (E open)	2N5401	- I <sub>CBO</sub>	–	–	50 µA

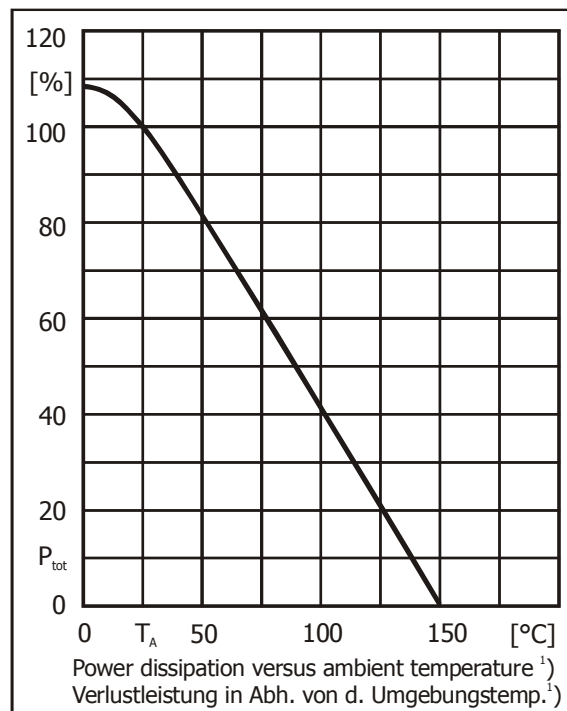
1 Valid, if leads are kept at ambient temperature at a distance of 2 mm from case  
 Gültig wenn die Anschlussdrähte in 2 mm Abstand vom Gehäuse auf Umgebungstemperatur gehalten werden

2 Tested with pulses t<sub>p</sub> = 300 µs, duty cycle ≤ 2% – Gemessen mit Impulsen t<sub>p</sub> = 300 µs, Schaltverhältnis ≤ 2%

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

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

		Min.	Typ.	Max.
Emitter-Base-cutoff current – Emitter-Basis-Reststrom - $V_{EB} = 3\text{ V}$ , (C open)	- $I_{EBO}$	–	–	50 nA
Collector-Emitter saturation voltage – Kollektor-Sättigungsspannung <sup>2)</sup> - $I_C = 10\text{ mA}$ , - $I_B = 1\text{ mA}$ - $I_C = 50\text{ mA}$ , - $I_B = 5\text{ mA}$	- $V_{CEsat}$ - $V_{CEsat}$	– –	– –	0.2 V 0.5 V
Base-Emitter saturation voltage – Basis-Sättigungsspannung <sup>2)</sup> - $I_C = 10\text{ mA}$ , - $I_B = 1\text{ mA}$ - $I_C = 50\text{ mA}$ , - $I_B = 5\text{ mA}$	- $V_{BEsat}$ - $V_{BEsat}$	– –	– –	1.0 V 1.0 V
Gain-Bandwidth Product – Transitfrequenz - $V_{CE} = 5\text{ V}$ , - $I_C = 10\text{ mA}$ , $f = 50\text{ MHz}$	$f_T$	100 MHz	–	400 MHz
Collector-Base Capacitance – Kollektor-Basis-Kapazität - $V_{CB} = 10\text{ V}$ , $I_E = i_e = 0$ , $f = 1\text{ MHz}$	$C_{CBO}$	–	–	6 pF
Noise figure – Rauschzahl - $V_{CE} = 5\text{ V}$ , - $I_C = 200\ \mu\text{A}$ , $R_S = 10\ \Omega$ , $f = 1\text{ kHz}$	2N5400 2N5401 F F	– –	– –	– 8 dB
Thermal resistance junction to ambient air Wärmewiderstand Sperrschicht – umgebende Luft	$R_{thA}$	< 200 K/W <sup>1)</sup>		
Recommended complementary NPN transistors Empfohlene komplementäre NPN-Transistoren		2N5550 / 2N5551		



2 Tested with pulses  $t_p = 300\ \mu\text{s}$ , duty cycle  $\leq 2\%$  – Gemessen mit Impulsen  $t_p = 300\ \mu\text{s}$ , Schaltverhältnis  $\leq 2\%$

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