

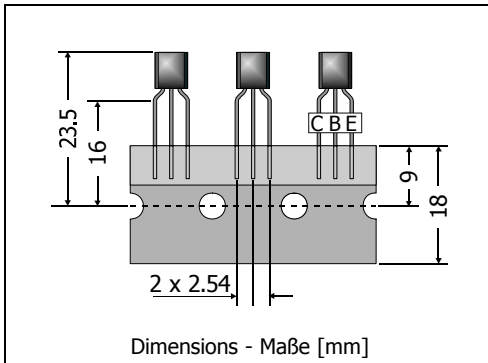
2N5400 / 2N5401

PNP

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

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 ($T_A = 25^\circ\text{C}$)Grenzwerte ($T_A = 25^\circ\text{C}$)

			2N5400	2N5401
Collector-Emitter-volt. – Kollektor-Emitter-Spannung	B open	- V_{CE0}	120 V	150 V
Collector-Base-voltage – Kollektor-Basis-Spannung	E open	- V_{CBO}	130 V	160 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	
Peak Collector current – Kollektor-Spitzenstrom		- I_{CM}	1 A	
Base current – Basisstrom		- I_B	100 mA	
Junction temperature – Sperrschichttemperatur		T_j	-55...+150°C	
Storage temperature – Lagerungstemperatur		T_s	-55...+150°C	

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

			Min.	Typ.	Max.
DC current gain – Kollektor-Basis-Stromverhältnis ²⁾					
- $I_C = 1\text{ mA}$, - $I_C = 10\text{ mA}$, - $I_C = 50\text{ mA}$, - $V_{CE} = 5\text{ V}$	2N5400	h_{FE}	30	–	–
- $I_C = 10\text{ mA}$, - $I_C = 10\text{ mA}$, - $I_C = 50\text{ mA}$, - $V_{CE} = 5\text{ V}$		h_{FE}	40	–	180
- $I_C = 50\text{ mA}$, - $V_{CE} = 5\text{ V}$		h_{FE}	40	–	–
- $I_C = 1\text{ mA}$, - $I_C = 10\text{ mA}$, - $I_C = 50\text{ mA}$, - $V_{CE} = 5\text{ V}$	2N5401	h_{FE}	50	–	–
- $I_C = 10\text{ mA}$, - $I_C = 10\text{ mA}$, - $I_C = 50\text{ mA}$, - $V_{CE} = 5\text{ V}$		h_{FE}	60	–	240
- $I_C = 50\text{ mA}$, - $V_{CE} = 5\text{ V}$		h_{FE}	50	–	–
Collector-Base cutoff current – Kollektor-Basis-Reststrom					
- $V_{CB} = 100\text{ V}$, (E open)	2N5400	- I_{CBO}	–	–	100 nA
- $V_{CB} = 120\text{ V}$, (E open)	2N5401	- I_{CBO}	–	–	50 nA
- $V_{CB} = 100\text{ V}$, $T_j = 100^\circ\text{C}$, (E open)	2N5400	- I_{CBO}	–	–	100 μA
- $V_{CB} = 120\text{ V}$, $T_j = 100^\circ\text{C}$, (E open)	2N5401	- I_{CBO}	–	–	50 μA

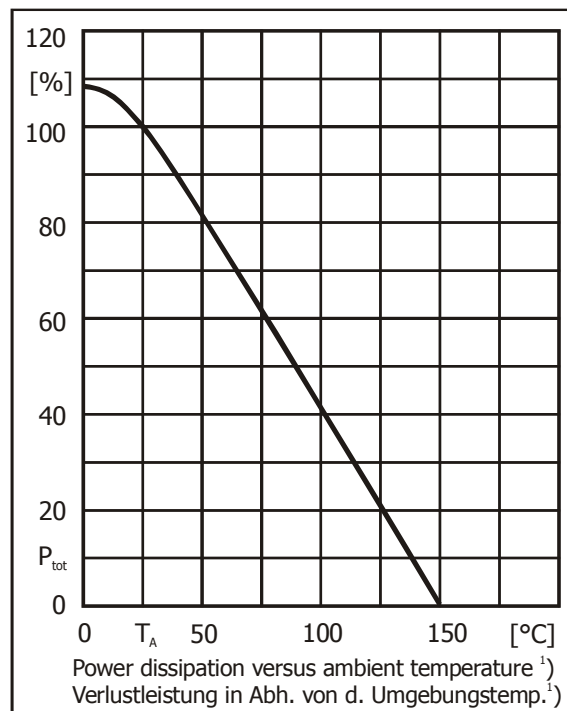
1 Valid, if leads are kept at ambient temperature at a distance of 2 mm from case

Gültig wenn die Anschlussdrähte in 2 mm Abstand vom Gehäuse auf Umgebungstemperatur gehalten werden

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

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 ²⁾ - $I_C = 10\text{ mA}$, - $I_B = 1\text{ mA}$ - $I_C = 50\text{ mA}$, - $I_B = 5\text{ mA}$	- V_{CEsat} - V_{CEsat}	– –	– –	0.2 V 0.5 V
Base-Emitter saturation voltage – Basis-Sättigungsspannung ²⁾ - $I_C = 10\text{ mA}$, - $I_B = 1\text{ mA}$ - $I_C = 50\text{ mA}$, - $I_B = 5\text{ mA}$	- 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 - $V_{CB} = 10\text{ V}$, $I_E = I_C = 0$, $f = 1\text{ MHz}$	C_{CBO}	–	–	6 pF
Noise figure – Rauschzahl - $V_{CE} = 5\text{ V}$, - $I_C = 200\text{ }\mu\text{A}$, $R_S = 10\text{ }\Omega$, $f = 1\text{ kHz}$	2N5400 2N5401 F F	– –	– –	– 8 dB
Thermal resistance junction to ambient air Wärmewiderstand Sperrschicht – umgebende Luft	R_{thA}	< 200 K/W ¹⁾		
Recommended complementary NPN transistors Empfohlene komplementäre NPN-Transistoren		2N5550 / 2N5551		



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