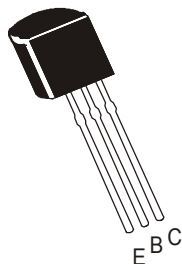


**PNP SILICON PLANAR EPITAXIAL TRANSISTORS**

**PN200  
PN200A**

**TO-92  
Plastic Package**



**COMPLEMENTARY PN100, PN100A**

**ABSOLUTE MAXIMUM RATINGS (T<sub>a</sub>=25°C unless specified otherwise)**

DESCRIPTION	SYMBOL	VALUE	UNITS
Collector Emitter Voltage	V <sub>CEO</sub>	35	V
Collector Base Voltage	V <sub>CBO</sub>	60	V
Emitter Base Voltage	V <sub>EBO</sub>	5	V
Collector Current Continuous	I <sub>C</sub>	500	mA
Power Dissipation @ T <sub>a</sub> =25°C	P <sub>D</sub>	625	mW
Operating And Storage Junction Temperature Range	T <sub>j</sub> , T <sub>stg</sub>	-55 to +150	°C

**THERMAL RESISTANCE**

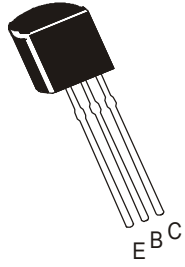
Junction to Ambient in free air	R <sub>th(j-a)</sub>	200	°C/W
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**ELECTRICAL CHARACTERISTICS (T<sub>a</sub>=25°C unless otherwise specified)**

DESCRIPTION	SYMBOL	TEST CONDITION	VALUE		UNITS
			MIN	MAX	
Collector Emitter Breakdown Voltage	BV <sub>CEO</sub> *	I <sub>C</sub> =1mA, I <sub>B</sub> =0	35		V
Collector Base Breakdown Voltage	BV <sub>CBO</sub>	I <sub>C</sub> =100μA, I <sub>E</sub> =0	60		V
Emitter Base Breakdown Voltage	BV <sub>EBO</sub>	I <sub>E</sub> =100μA, I <sub>C</sub> =0	5		V
Base Cut off Current	I <sub>CBO</sub>	V <sub>CB</sub> =35V, I <sub>E</sub> = 0		500	nA
Collector Emitter Saturation Voltage	V <sub>CE(sat)</sub> *	I <sub>C</sub> =150mA, I <sub>B</sub> =15mA		0.4	V
	<b>PN100, A</b>	I <sub>C</sub> =500mA, I <sub>B</sub> =50mA		1.0	V
	<b>PN200, A</b>			2.0	V
Base Emitter Saturation Voltage	V <sub>BE(sat)</sub> *	I <sub>C</sub> =150mA, I <sub>B</sub> =15mA		0.95	V
	<b>PN100, A</b>	I <sub>C</sub> =500mA, I <sub>B</sub> =50mA		1.2	V
	<b>PN200, A</b>			1.3	V

\*Pulse Condition: = Width ≤ 300μs, Duty Cycle ≤ 2%.

# PNP SILICON PLANAR EPITAXIAL TRANSISTORS



**PN200  
PN200A**

**TO-92  
Plastic Package**

## COMPLEMENTARY PN100, PN100A

ELECTRICAL CHARACTERISTICS ( $T_a=25^\circ\text{C}$  unless otherwise specified)

DESCRIPTION	SYMBOL	TEST CONDITION	PN100	PN100A	PN200	PN200A
DC Current Gain	$h_{FE}^*$	$I_C=1\text{mA}, V_{CE}=1\text{V}$	>40	>40	>40	>40
		$I_C=10\text{mA}, V_{CE}=1\text{V}$	100-450	300-600	100-450	300-600
		$I_C=150\text{mA}, V_{CE}=1\text{V}^*$	>100	>100		
		$I_C=150\text{mA}, V_{CE}=2\text{V}^*$			>100	>100

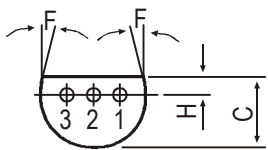
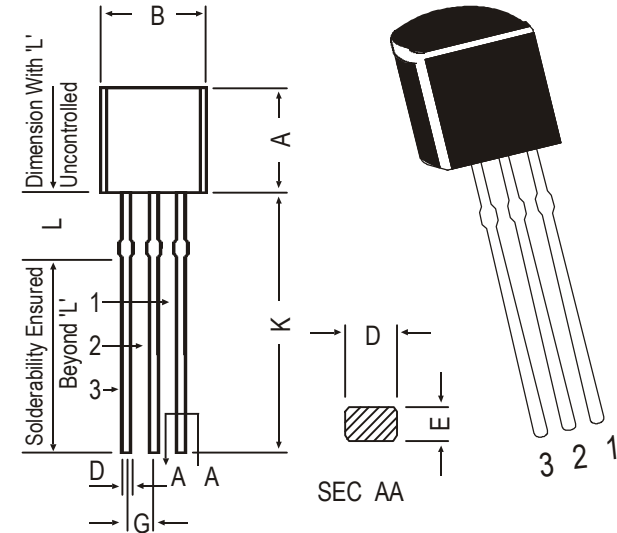
## DYNAMIC CHARACTERISTICS

Transition Frequency	$f_T$	$I_C=20\text{mA}, V_{CE}=10\text{V}$				
		$f=100\text{MHz}$				
<b>PN100, A</b>			>200			MHz
<b>PN200, A</b>			>150			MHz

\*Pulse Condition: = Width  $\leq 300\mu\text{s}$ , Duty Cycle  $\leq 2\%$ .

TO-92 Plastic Package

TO-92 Transistors in Tape and Ammo Pack

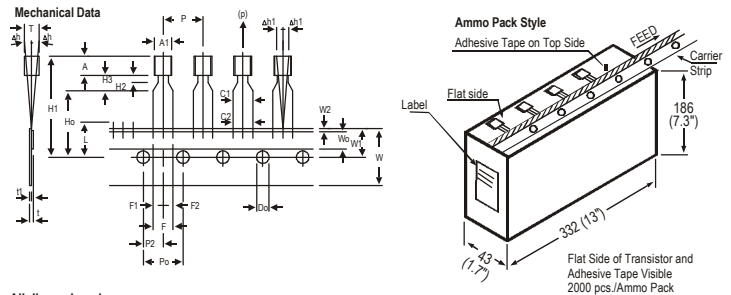


PIN CONFIGURATION

1. COLLECTOR
2. BASE
3. EMITTER

DIM	MIN.	MAX.
A	4.32	5.33
B	4.45	5.20
C	3.18	4.19
D	0.41	0.55
E	0.35	0.50
F	5 DEG	
G	1.14	1.40
H	1.14	1.53
K	12.70	—
L	1.982	2.082

All diminsions in mm.



All dimensions in mm

ITEM	SYMBOL	SPECIFICATION				REMARKS
		MIN.	NOM.	MAX.	TOL.	
BODY WIDTH	A1	4.0	4.8			
BODY HEIGHT	A	4.8	5.2			
BODY THICKNESS	T	3.9	4.2			
PITCH OF COMPONENT	P	12.7			± 1.0	
FEED HOLE PITCH	Po	12.7			± 0.3	CUMULATIVE PITCH ERROR 1.0 mm/20 PITCH
FEED HOLE CENTRE TO COMPONENT CENTRE	P2	6.35			± 0.4	TO BE MEASURED AT BOTTOM OF CLINCH
DISTANCE BETWEEN OUTER LEADS	F	5.08			+ 0.6 - 0.2	
COMPONENT ALIGNMENT SIDE VIEW	Δh	0	1.0			AT TOP OF BODY
COMPONENT ALIGNMENT FRONT VIEW	Δh1	0	1.3			AT TOP OF BODY
TAPE WIDTH	W	18			± 0.5	
HOLD-DOWN TAPE WIDTH	Wo	6			± 0.2	
HOLE POSITION	W1	9			+ 0.7 - 0.5	
HOLD-DOWN TAPE POSITION	W2	0.5			± 0.2	
LEAD WIRE CLINCH HEIGHT	Ho	16			± 0.5	
COMPONENT HEIGHT	H1		23.25			
LENGTH OF SNIPPED LEADS	L		11.0			
FEED HOLE DIAMETER	Do	4			± 0.2	
TOTAL TAPE THICKNESS	t		1.2			t1 0.3-0.6
LEAD - TO - LEAD DISTANCE	F1, F2	2.54			+ 0.4 - 0.1	
STAND OFF	H2	0.45	1.45			
CLINCH HEIGHT	H3		3.0			
LEAD PARALLELISM	C1 - C2		0.22			
PULL - OUT FORCE	(P)	6N				

NOTES

1. Maximum alignment deviation between leads will not be greater than 0.2mm.
2. Maximum non-cumulative variation between tape feed holes shall not exceed 1 mm in 20 pitches.
3. Holddown tape will not exceed beyond the edge(s) of carrier tape and there shall be no exposure of adhesive.
4. There will be no more than three (3) consecutive missing components in a tape.
5. A tape trailer, having at least three feed holes are provided after the last component in a tape.
6. Splices should not interfere with the sprocket feed holes.

Packing Detail

PACKAGE	STANDARD PACK		INNER CARTON BOX		OUTER CARTON BOX		
	Details	Net Weight/Qty	Size	Qty	Size	Qty	Gr Wt
TO-92 Bulk	1K/polybag	200 gm/1K pcs	3" x 7.5" x 7.5"	5K	17" x 15" x 13.5"	80K	23 kgs
TO-92 T&A	2K/ammo box	645 gm/2K pcs	12.5" x 8" x 1.8"	2K	17" x 15" x 13.5"	32K	12.5 kgs

### **Disclaimer**

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