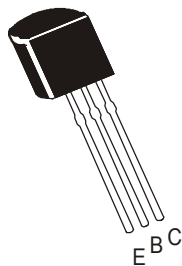


PNP SILICON PLANAR EPITAXIAL TRANSISTORS

**PN200
PN200A**

**TO-92
Plastic Package**



COMPLEMENTARY PN100, PN100A

ABSOLUTE MAXIMUM RATINGS ($T_a=25^\circ\text{C}$ unless specified otherwise)

DESCRIPTION	SYMBOL	VALUE	UNITS
Collector Emitter Voltage	V_{CEO}	35	V
Collector Base Voltage	V_{CBO}	60	V
Emitter Base Voltage	V_{EBO}	5	V
Collector Current Continuous	I_C	500	mA
Power Dissipation @ $T_a=25^\circ\text{C}$	P_D	625	mW
Operating And Storage Junction Temperature Range	T_j, T_{stg}	-55 to +150	$^\circ\text{C}$

THERMAL RESISTANCE

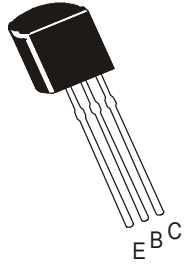
Junction to Ambient in free air	$R_{th(j-a)}$	200	$^\circ\text{C/W}$
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ELECTRICAL CHARACTERISTICS ($T_a=25^\circ\text{C}$ unless otherwise specified)

DESCRIPTION	SYMBOL	TEST CONDITION	VALUE		UNITS
			MIN	MAX	
Collector Emitter Breakdown Voltage	BV_{CEO}^*	$I_C=1\text{mA}, I_B=0$	35		V
Collector Base Breakdown Voltage	BV_{CBO}	$I_C=100\mu\text{A}, I_E=0$	60		V
Emitter Base Breakdown Voltage	BV_{EBO}	$I_E=100\mu\text{A}, I_C=0$	5		V
Base Cut off Current	I_{CBO}	$V_{CB}=35\text{V}, I_E=0$		500	nA
Collector Emitter Saturation Voltage	$V_{CE(sat)}^*$	$I_C=150\text{mA}, I_B=15\text{mA}$		0.4	V
	PN100, A	$I_C=500\text{mA}, I_B=50\text{mA}$		1.0	V
	PN200, A			2.0	V
Base Emitter Saturation Voltage	$V_{BE(sat)}^*$	$I_C=150\text{mA}, I_B=15\text{mA}$		0.95	V
	PN100, A	$I_C=500\text{mA}, I_B=50\text{mA}$		1.2	V
	PN200, A			1.3	V

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

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

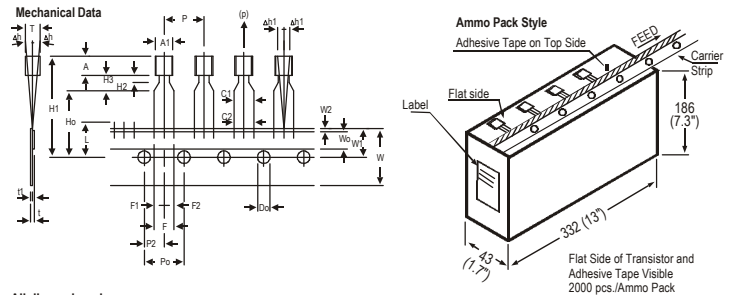
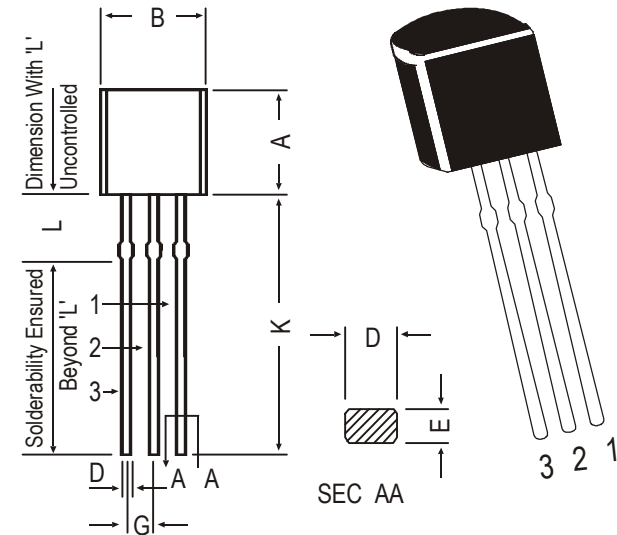
DYNAMIC CHARACTERISTICS

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

*Pulse Condition: = Width \leq 300ms, Duty Cycle \leq 2%.

TO-92 Plastic Package

TO-92 Transistors in Tape and Ammo Pack



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

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

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.

PIN CONFIGURATION

- COLLECTOR
- BASE
- EMITTER

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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