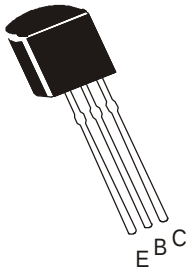
Continental Device India Limited

An ISO/TS 16949, ISO 9001 and ISO 14001 Certified Company

PNP SILICON PLANAR EPITAXIAL TRANSISTORS

CP500 / 501 / 502
CP503 / 504

TO-92
Plastic Package



General Purpose Audio Transistors

Complementary CN300 series

ABSOLUTE MAXIMUM RATINGS

DESCRIPTION	SYMBOL	CP500	CP501	CP502	CP503	CP504	UNITS
Collector Base Voltage	V_{CBO}	25	35	35	45	70	V
Collector Emitter Voltage	V_{CEO}	25	35	35	45	70	V
Emitter Base Voltage	V_{EBO}	5					V
Peak Pulse Current	I_C	500					mA
Base Current	I_B	100					mA
Power Dissipation @ T_a=25ºC	P_D	300					mW
Operating and Storage Junction Temperature Range	T_j, T_{stg}	- 65 to +150					ºC

ELECTRICAL CHARACTERISTICS (T_a=25ºC unless specified otherwise)

DESCRIPTION	SYMBOL	TEST CONDITION	MIN	MAX	UNITS
Collector Cut Off Current	I_{CBO}	V_{CB}=V_{CB} (max)		200	nA
Emitter Cut Off Current	I_{EBO}	V_{EB}=4V, I_C = 0		200	nA
Collector Emitter Voltage	V_{CEO}	I_C=1mA, I_B=0			
		CP500	25		V
		CP501/CP502	35		V
		CP503	45		V
		CP504	70		V
Collector Emitter Saturation Voltage	*$V_{CE\ (sat)}$	I_C=50mA, I_B=5mA			V
		CP500/503		0.35	V
		CP501/502		0.25	V
		CP504		0.6	V
Base Emitter Saturation Voltage	*$V_{BE\ (sat)}$	I_C=10mA, I_B=1mA	0.65	1.0	V
DC Current Gain	*h_{FE}	I_C=100µA, V_{CE}=6V **CP502**	20		
		I_C=10mA, V_{CE}=6V			
		CP500/501/503/504	50	300	
		CP502	100	300	
		I_C=50mA, V_{CE}=6V	50		

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

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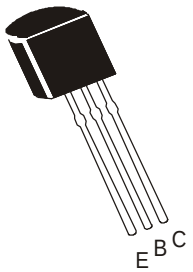

TO-92

Plastic Package

ELECTRICAL CHARACTERISTICS (T_a=25ºC unless specified otherwise)

DYNAMIC CHARACTERISTICS

DESCRIPTION	SYMBOL	TEST CONDITION	MIN	MAX	UNITS
Output Capacitance	C_{obo}	V_{CB}=6V, I_E=0, f=1MHz		6	pF
Noise Figure	N_F	V_{CE}=6V, I_C=100µA, f=1KHz, R_s=1.5kΩ		7	dB
Transition Frequency	f_T	V_{CE}=6V, I_C=10mA, f=100MHz	150		MHz

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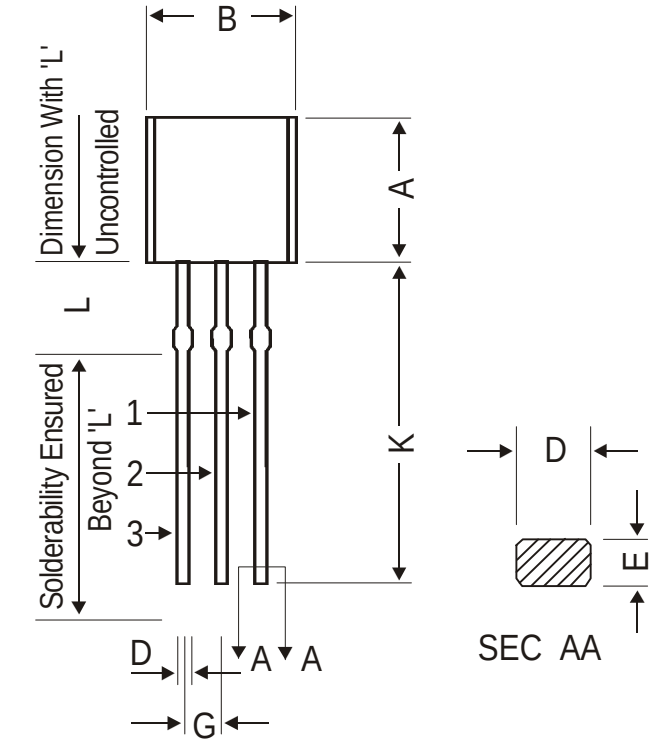
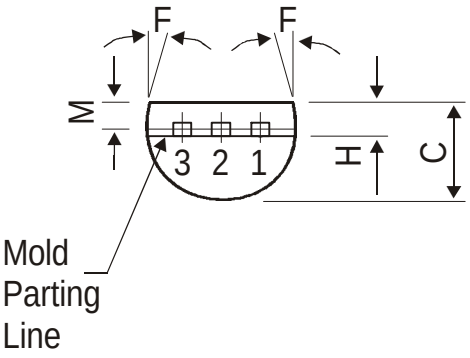
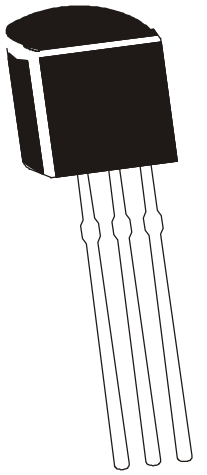
TO-92 Plastic Package



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	1.20	1.40
K	12.70	—
L	1.982	2.082
M	1.03	1.20

All dimensions are in mm





PIN CONFIGURATION
1. COLLECTOR
2. BASE
3. EMITTER

The TO-92 Package, Tape and Ammo Pack Drawings are correct as on the date of issue/revision of this Data Sheet.

The currently valid dimensions and information, may please be confirmed from the TO-92 Drawing in the Packages and Packing Section of the Product Catalogue.

Packing Details

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

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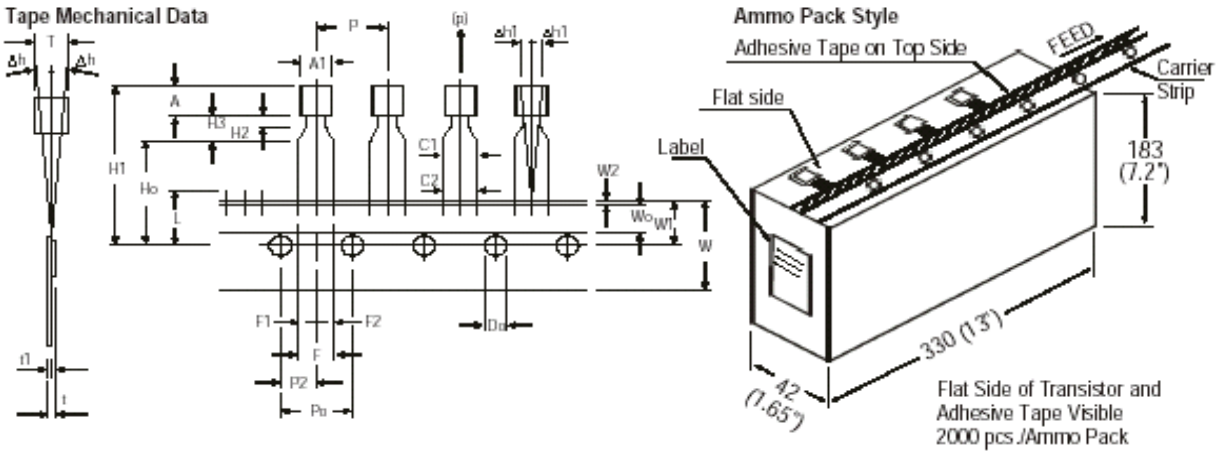
TO-92 Tape and Ammo Pack



All dimensions are in mm

ITEM	SYMBOL	SPECIFICATION			
		MIN.	NOM.	MAX.	TOL.
BODY WIDTH	A1	4.45		5.20	
BODY HEIGHT	A	4.32		5.33	
BODY THICKNESS	T	3.18		4.19	
PITCH OF COMPONENT	P		12.7		± 1.0
*1 FEED HOLE PITCH	Po		12.7		± 0.3
*2 FEED HOLE CENTRE TO COMPONENT CENTRE	P2		6.35		± 0.4
DISTANCE BETWEEN OUTER LEADS	F		5.08		+ 0.6 - 0.2
*3 COMPONENT ALIGNMENT SIDE VIEW	Δh		0	1.0	
*4 COMPONENT ALIGNMENT FRONT VIEW	Δh1		0	1.3	
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	0.0		0.7	
LEAD WIRE CLINCH HEIGHT	Ho		16		± 0.5
COMPONENT HEIGHT	H1			24.0	
LENGTH OF SNIPPED LEADS	L			11.0	
FEED HOLE DIAMETER	Do		4		± 0.2
*5 TOTAL TAPE THICKNESS	t			1.2	
LEAD - TO - LEAD DISTANCE	F1, F2	2.40		2.70	- 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 to 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.

REMARKS

*1 Cumulative pitch error 1.0 mm/20 pitch
*2 To be measured at bottom of clinch
*3 At top of body
*4 At top of body
*5 t1 0.3 – 0.6 mm

Disclaimer

The product information and the selection guides facilitate selection of the CDIL's Discrete Semiconductor Device(s) best suited for application in your product(s) as per your requirement. It is recommended that you completely review our Data Sheet(s) so as to confirm that the Device(s) meet functionality parameters for your application. The information furnished in the Data Sheet and on the CDIL Web Site/CD are believed to be accurate and reliable. CDIL however, does not assume responsibility for inaccuracies or incomplete information. Furthermore, CDIL does not assume liability whatsoever, arising out of the application or use of any CDIL product; neither does it convey any license under its patent rights nor rights of others. These products are not designed for use in life saving/support appliances or systems. CDIL customers selling these products (either as individual Discrete Semiconductor Devices or incorporated in their end products), in any life saving/support appliances or systems or applications do so at their own risk and CDIL will not be responsible for any damages resulting from such sale(s).

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