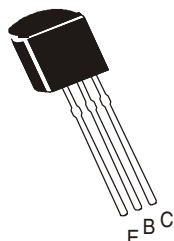


PNP SILICON PLANAR EPITAXIAL TRANSISTORS

CP752 / CP753



TO-92 Plastic Package

Use in Wide Variety of Industrial and Consumer Applications Including Lamp and Solenoid Drivers and Audio Amplifier

Complementary CN652 and CN653

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

DESCRIPTION	SYMBOL	CP752	CP753	UNIT
Collector Base Voltage	V_{CBO}	100	120	V
Collector Emitter Voltage	V_{CEO}	80	100	V
Emitter Base Voltage	V_{EBO}	5		V
Peak Pulse Current	$*I_{CM}$	6		A
Collector Current Continuous	I_C	2		A
Power Dissipation @ $T_a=25^\circ\text{C}$	P_D	0.9		W
Derate Above 25°C		7.2		mW/ $^\circ\text{C}$
Power Dissipation @ $T_a=25^\circ\text{C}$	$**P_D$	1.1		W
Power Dissipation @ $T_c=25^\circ\text{C}$	P_D	2.2		W
Operating and Storage Junction Temperature Range	T_j, T_{stg}	- 65 to +150		$^\circ\text{C}$

Thermal Resistance

Junction to Ambient	$R_{th(j-a) 1}$	138.8	$^\circ\text{C/W}$
Junction to Ambient	$R_{th(j-a) 2+}$	113.6	$^\circ\text{C/W}$
Junction to Case	$R_{th(j-c)}$	56.8	$^\circ\text{C/W}$

* Consult safe operating area graph for conditions.

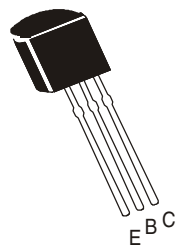
**Transistors mounted on printed circuit board. Lead Length 4mm, mounting pad for collector lead min 10mm x 10 mm, copper

2+ Device mounted on P.C.B with copper equal to 1sq.inch. Minimum

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

DESCRIPTION	SYMBOL	TEST CONDITION	MIN	MAX	UNIT
Collector Base Voltage	V_{CBO}	$I_C=100\mu\text{A}, I_E=0$ CP752	100		V
		CP753	120		V
Collector Emitter Voltage	V_{CEO}	$I_C=1\text{mA}, I_B=0$ CP752	80		V
		CP753	100		V
Emitter Base Voltage	V_{EBO}	$I_E=100\mu\text{A}, I_C=0$	5.0		V
Collector Cut Off Current	I_{CBO}	$V_{CB}=80\text{V}, I_E=0$ CP752		100	nA
		$V_{CB}=80\text{V}, I_E=0, T_a=100^\circ\text{C}$		10	μA
		$V_{CB}=100\text{V}, I_E=0$ CP753		100	nA
		$V_{CB}=100\text{V}, I_E=0, T_a=100^\circ\text{C}$		10	μA
Emitter Cut Off Current	I_{EBO}	$V_{EB}=4\text{V}, I_C=0$		100	nA

CP752_753Rev_2 211204E



TO-92
Plastic Package

ELECTRICAL CHARACTERISTICS (T_a=25°C unless specified otherwise)

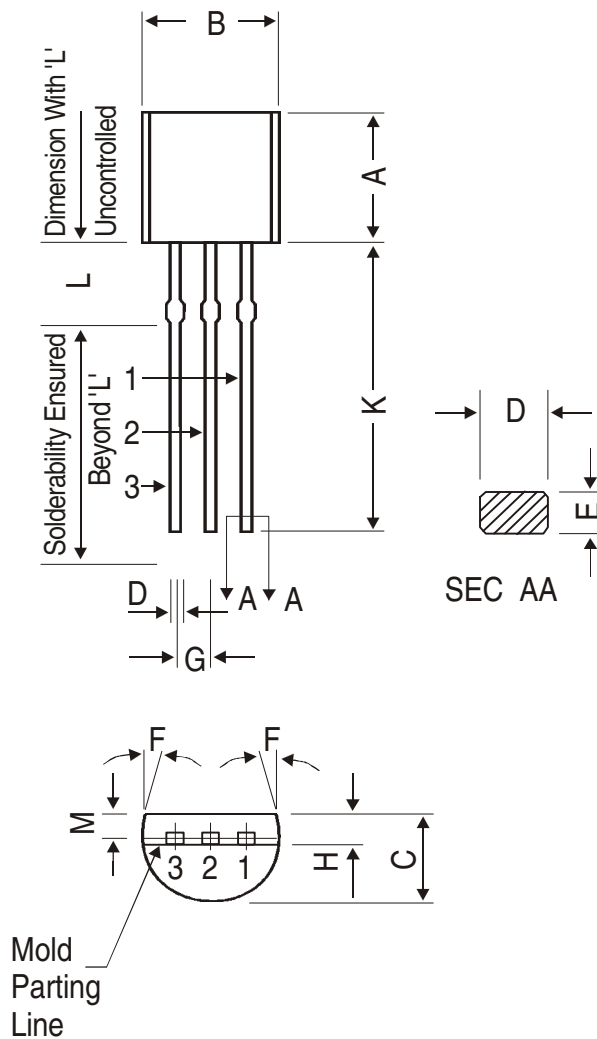
DESCRIPTION	SYMBOL	TEST CONDITION	MIN	MAX	UNIT
Collector Emitter Saturation Voltage	*** V _{CE (sat)}	I _C =1A, I _B =100mA		0.3	V
		I _C =2A, I _B =200mA		0.5	V
Base Emitter Saturation Voltage	*** V _{BE (sat)}	I _C =1A, I _B =100mA		1.25	V
Base Emitter on Voltage	*** V _{BE (on)}	I _C =1A, V _{CE} =2V		1.0	V
DC Current Gain	*** h _{FE}	I _C =50mA, V _{CE} =2V	70	300	
		I _C =500mA, V _{CE} =2V	100		
		I _C =1A, V _{CE} =2V	55		
		I _C =2A, V _{CE} =2V	25		
Transition Frequency	f _T	I _C =100mA, V _{CE} =5V, f=100MHz	100		MHz
Output Capacitance	C _{obo}	V _{CB} =10V, I _E =0, f=1MHz		30	pF

SWITCHING TIMES

DESCRIPTION	SYMBOL	TEST CONDITION	TYP	UNIT
Turn On Time	t _{on}	I _C =500mA, I _{B1} =I _{B2} =50mA, V _{CC} =10V	40	ns
Turn Off Time	t _{off}		600	ns

*** Measured under Pulse conditions. Pulse Width=300µs. Duty Cycle≤2%

TO-92 Plastic Package

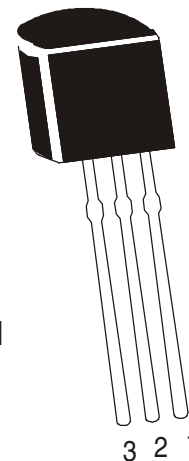


DIM	MIN.	MAX.
A	4.32	5.33
B	4.45	5.20
C	3.18	4.19
D	0.41	0.55
E	0.35	0.50
F	5 DEG	
G	1.14	1.40
H	1.20	1.40
K	12.70	—
L	1.982	2.082
M	1.03	1.20

All dimensions are in mm

PIN CONFIGURATION

1. COLLECTOR
2. BASE
3. EMITTER



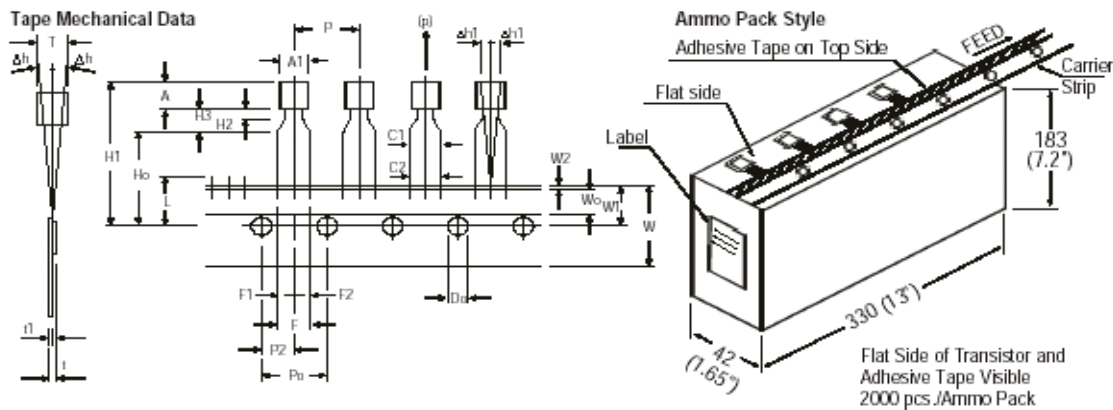
The TO-92 Package, Tape and Ammo Pack Drawings are correct as on the date of issue/revision of this Data Sheet.

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

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		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.
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	P0		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	W0		6		± 0.2	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
HOLE POSITION	W1		9		+ 0.7 - 0.5	
HOLD-DOWN TAPE POSITION	W2	0.0		0.7		
LEAD WIRE CLINCH HEIGHT	H0		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				

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 is 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).

CDIL strives for continuous improvement and reserves the right to change the specifications of its products without prior notice.



CDIL is a registered Trademark of

Continental Device India Limited

C-120 Naraina Industrial Area, New Delhi 110 028, India.

Telephone + 91-11-2579 6150, 5141 1112 Fax + 91-11-2579 5290, 5141 1119

email@cdil.com www.cdilsemi.com