

Continental Device India Limited An ISO/TS 16949, ISO 9001 and ISO 14001 Certified Company

# PNP SILICON PLANAR EPITAXIAL TRANSISTORS



CP756 / CP757

TO-92 Plastic Package



Medium Power Transistors are Designed for Applications Requiring High Breakdown Voltage and Low Saturation Voltage

### Complementary CN656 and CN657

ABSOLUTE MAXIMUM RATINGS (T<sub>a</sub>=25°C )

DESCRIPTION	SYMBOL	CP756	CP757	UNIT
Collector Base Voltage	V <sub>CBO</sub>	200	V	
Collector Emitter Voltage	V <sub>CEO</sub>	200	300	V
Emitter Base Voltage	V <sub>EBO</sub>	5		V
Peak Pulse Current	*I <sub>CM</sub>	1.0	А	
Collector Current Continuous	Ι <sub>C</sub>	0.5	А	
Power Dissipation at T <sub>a</sub> =25 <sup>o</sup> C	P <sub>D</sub>	0.9	W	
Derate Above 25°C		7.2	mW/⁰C	
Power Dissipation at T <sub>a</sub> =25 <sup>o</sup> C	**P <sub>D</sub>	1.1	W	
Power Dissipation at T <sub>c</sub> =25°C	P <sub>D</sub>	2.2	W	
Operating and Storage Junction Temperature Range	T <sub>j</sub> , T <sub>stg</sub>	- 65 to +150		٥C

### **Thermal Resistance**

Junction to Ambient	R <sub>th (j-a) 1</sub>	138.8	°C/W
Junction to Ambient	R <sub>th (j-a) 2+</sub>	113.6	°C/W
Junction to Case	R <sub>th (j-c)</sub>	56.8	°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

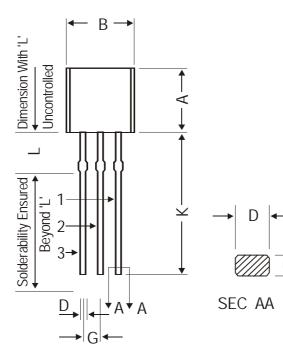
## ELECTRICAL CHARACTERISTICS (T<sub>a</sub>=25°C unless specified otherwise)

DESCRIPTION	SYMBOL	TEST CONDITION		MIN	MAX	UNIT
Collector Base Voltage	V <sub>CBO</sub>	I <sub>C</sub> =100μA, I <sub>E</sub> =0	CP756	200		V
			CP757	300		V
Collector Emitter Voltage	V <sub>CEO</sub>	I <sub>C</sub> =1mA, I <sub>B</sub> =0	CP756	200		V
			CP757	300		V
Emitter Base Voltage	V <sub>EBO</sub>	I <sub>E</sub> =100μA, I <sub>C</sub> =0		5.0		V
Collector Cut Off Current	I <sub>CBO</sub>	V <sub>CB</sub> =160V, I <sub>E</sub> =0	CP756		100	nA
		V <sub>CB</sub> =200V, I <sub>E</sub> =0	CP757		100	nA
Emitter Cut Off Current	I <sub>EBO</sub>	V <sub>EB</sub> =3V, I <sub>C</sub> =0			100	nA
Collector Emitter Saturation Voltage	*** V <sub>CE (sat)</sub>	I <sub>C</sub> =100mA, I <sub>B</sub> =10	)mA		0.5	V
Base Emitter Saturation Voltage	*** V <sub>BE (sat)</sub>	I <sub>C</sub> =100mA, I <sub>B</sub> =10	)mA		1.0	V
Base Emitter On Voltage	*** V <sub>BE (on)</sub>	I <sub>C</sub> =100mA,V <sub>CE</sub> =	5V		1.0	V
DC Current Gain	*** h <sub>FE</sub>	I <sub>C</sub> =100mA,V <sub>CE</sub> =	5V	50		
		I <sub>C</sub> =10mA,V <sub>CE</sub> =5	5V	40		
Transition Frequency	f <sub>T</sub>	I <sub>C</sub> =10mA, V <sub>CE</sub> =20V, f=	=20MHz	30		MHz
Output Capacitance	C <sub>obo</sub>	V <sub>CB</sub> =20V, I <sub>E</sub> =0, f=1	MHz		20	pF

\*\*\*Pulse conditions. Pulse Width=300ms. Duty Cycle<2%

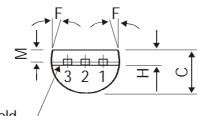
**TO-92 Plastic Package** 

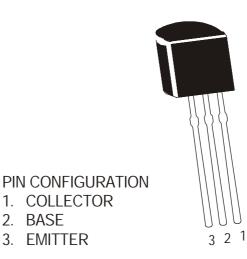
# **TO-92 Plastic Package**



DIM	MIN.	MAX.			
А	4.32	5.33			
В	4.45	5.20			
С	3.18	4.19			
D	0.41	0.55			
E	0.35	0.50			
F	5 DEG				
G	1.14	1.40			
Н	1.20	1.40			
K	12.70	_			
L	1.982	2.082			
М	1.03	1.20			

All dimensions are in mm





Mold Parting Line

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/Oty		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

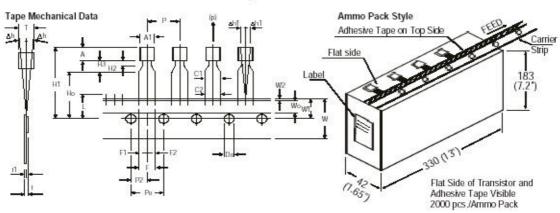
1. COLLECTOR

2. BASE

3. EMITTER

# TO-92 Plastic Package

### TO-92 Tape and Ammo Pack



#### All dimensions are in mm

		SPECIFICATION			ON			
ITEM	SYMBOL	MIN.	NOM.	MAX.	TOL.			
BODY WIDTH	A1	4.45	-	5.20	8	NOTES		
BODY HEIGHT	Α	4.32		5.33		1. Maximum alignment deviation between		
BODY THICKNESS	Т	3.18		4.19		leads will not to be greater than 0.2mm.		
PITCH OF COMPONENT	Р		12.7		± 1.0	2. Maximum non-cumulative variation		
*1FEED HOLE PITCH	Po		12.7		± 0.3	between tape feed holes shall not		
*2 FEED HOLE CENTRE TO	112-5		11222069			exceed 1 mm in 20 pitches.		
COMPONENT CENTRE	P2		6.35		± 0.4	3. Holddown tape will not exceed beyond		
DISTANCE BETWEEN OUTER LEADS	E		5.08		+ 0.6	the edge(s) of carrier tape and there shall be no exposure of adhesive.		
*3 COMPONENT ALIGNMENT SIDE VIEW	Δh		0	1.0		4. There will be no more than three (3)		
*4 COMPONENT ALIGNMENT FRONT VIEW			0	1.3		consecutive missing components in a		
TAPE WIDTH	W		18	0.000	± 0.5	tape.		
HOLD-DOWN TAPE WIDTH	Wo		6		+ 0.2	5. A tape trailer, having at least three feed		
HOLE POSITION	W1		9		+ 0.7	holes are provided after the last component in a tape.		
HOLD-DOWN TAPE POSITION	W2	0.0		0.7		6. Splices should not interfere with the		
LEAD WIRE CLINCH HEIGHT	Ho	N 40 3 70 93	16	10000000	± 0.5	sprocket feed holes.		
COMPONENT HEIGHT	H1		10050	24.0				
LENGTH OF SNIPPED LEADS	Ľ			11.0				
FEED HOLE DIAMETER	Do		4		± 0.2	REMARKS		
*5 TOTAL TAPE THICKNESS	t		-	1.2				
LEAD - TO - LEAD DISTANCE	F1, F2	2.40		2.70		*1 Cumulative pitch error 1.0 mm/20 pitch		
STAND OFF	H2	0.45		1.45	- 0.1	*2 To be measured at bottom of clinch		
CLINCH HEIGHT	H3	0.45		3.0		*3 At top of body		
LEAD PARALLELISM	C1 - C2			0.22		*4 At top of body		
PULL - OUT FORCE	(p)	6N		0.22		*5 t1 0.3 – 0.6 mm		

TO-92 Plastic Package

### **Component Disposal Instructions**

- 1. CDIL Semiconductor Devices are RoHS compliant, customers are requested to please dispose as per prevailing Environmental Legislation of their Country.
- 2. In Europe, please dispose as per EU Directive 2002/96/EC on Waste Electrical and Electronic Equipment (WEEE).

## Disclaimer

The product information and the selection guides facilitate selection of the CDIL's 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 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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