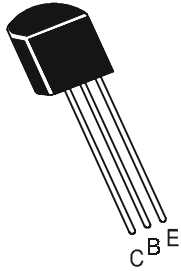


**PNP SILICON PLANAR EPITAXIAL TRANSISTORS**

**BC 446, A, B**  
**BC 448, A, B**  
**BC 450, A, B**



**TO-92**  
**Plastic Package**

**General Purpose High Voltage Transistors.**

**ABSOLUTE MAXIMUM RATINGS (Ta=25°C unless specified otherwise)**

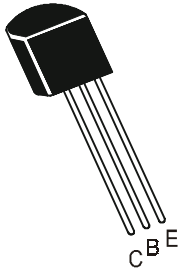
DESCRIPTION	SYMBOL TEST CONDITION	MIN	TYP	MAX	UNITS
Collector Emitter Voltage	$V_{CEO}$	60	80	100	V
Collector Base Voltage	$V_{CBO}$	60	80	100	V
Emitter Base Voltage	$V_{EBO}$	5	5	5	V
Collector Current Continuous	$I_C$	300			mA
Total Device Dissipation@ Ta=25°C	$P_D$		625		mW
Derate Above 25°C			5		mW/ °C
Total Device Dissipation@ Tc=25°C	$P_D$		1.5		W
Derate Above 25°C			12		mW/ °C
Operating And Storage Junction Temperature Range	$T_j, T_{stg}$		-55 to +150		°C

**THERMAL RESISTANCE**

Junction to ambient	$R_{th(j-a)}$		200		°C/W
Junction to case	$R_{th(j-c)}$		83.3		°C/W

# SILICON PLANAR EPITAXIAL TRANSISTORS

BC 446, A, B  
BC 448, A, B  
BC 450, A, B



TO-92  
Plastic Package

## ELECTRICAL CHARACTERISTICS (Ta=25°C unless specified otherwise)

DESCRIPTION	SYMBOL	TEST CONDITION	MIN	TYP	MAX	UNITS	
Collector Emitter Breakdown Voltage	$BV_{CEO}^*$	$I_C=1mA, I_B=0$					
	BC446		60			V	
	BC448		80			V	
	BC450		100			V	
Collector Base Breakdown Voltage	$BV_{CBO}$	$I_C=100\mu A, I_E=0$					
	BC446		60			V	
	BC448		80			V	
	BC450		100			V	
Emitter Base Breakdown Voltage	$BV_{EBO}$	$I_E=10\mu A, I_C=0$	5			V	
Collector-Cut off Current	$I_{CBO}$						
	BC446	$V_{CB}=40V, I_E=0$			100	nA	
	BC448	$V_{CB}=60V, I_E=0$			100	nA	
	BC450	$V_{CB}=80V, I_E=0$			100	nA	
DC Current Gain	$h_{FE}^*$	$I_C=2mA, V_{CE}=5V$	NON SUFFIX	50		460	
			A	120		220	
			B	180		460	
		$I_C=2mA, V_{CE}=5V$	NON SUFFIX	50			
			A	100			
			B	160			
	$I_C=100mA, V_{CE}=5V$	NON SUFFIX	50				
		A	60				
		B	90				
	Collector Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C=100mA, I_B=10mA$			0.25	V
	Base Emitter Saturation Voltage	$V_{BE(sat)}$	$I_C=100mA, I_B=10mA$		0.85		V
	Base Emitter On Voltage	$V_{BE(on)}$	$I_C=2mA, V_{CE}=5V$	0.55		0.70	V
$I_C=100mA, V_{CE}=5V^*$					1.2	V	

## DYNAMICS CHARACTERISTICS

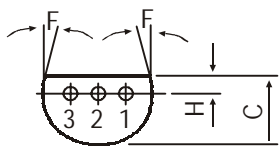
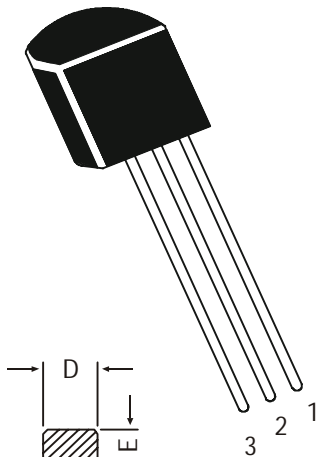
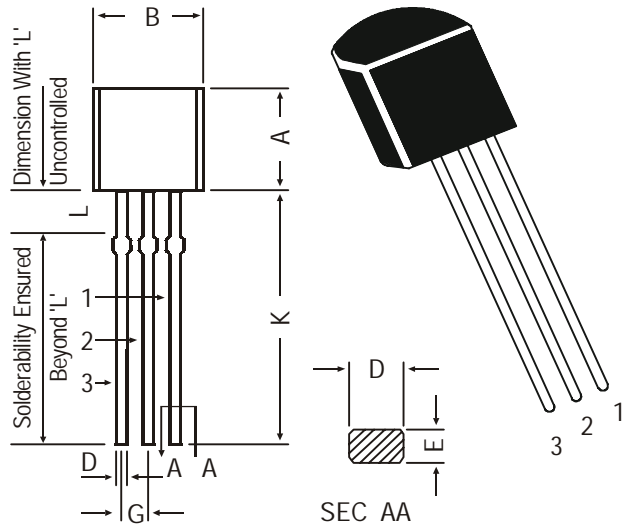
Transition Frequency	$f_T$	$I_C=50mA, V_{CE}=5V$ $f=100MHz$	100			MHz
----------------------	-------	-------------------------------------	-----	--	--	-----

Pulse Test : Pulse width  $\leq 300\mu s$ , Duty Cycle  $\leq 2\%$ .

BC 446, A, B  
 BC 448, A, B  
 BC 450, A, B

TO-92  
 Plastic Package

TO-92 Plastic Package

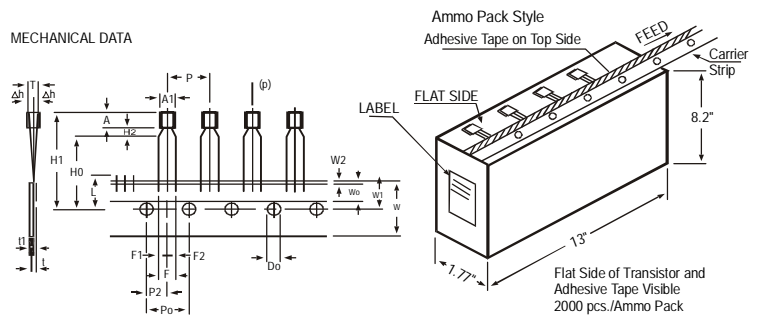


PIN CONFIGURATION  
 1. EMITTER  
 2. BASE  
 3. COLLECTOR

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 dimensions in mm.

TO-92 Transistors on Tape and Ammo Pack



All dimensions in mm unless specified otherwise

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	
FEED HOLE PITCH	Po		12.7		±0.3	
FEED HOLE CENTRE TO COMPONENT CENTRE	P2		6.35		±0.4	CUMULATIVE PITCH ERROR 1.0 mm/20 PITCH
DISTANCE BETWEEN OUTER LEADS	F	5.08			+0.6 -0.2	
COMPONENT ALIGNMENT	Δh	0		1		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,	F1					
LEAD - TO - LEAD DISTANCE F2,	F2	2.54			+0.4 -0.1	
CLINCH HEIGHT	H2			3		
PULL - OUT FORCE	(P)	6N				

NOTES

1. MAXIMUM ALIGNMENT DEVIATION BETWEEN LEADS NOT TO BE GREATER THAN 0.2 mm.
2. MAXIMUM NON-CUMULATIVE VARIATION BETWEEN TAPE FEED HOLES SHALL NOT EXCEED 1 mm IN 20 PITCHES.
3. HOLDDOWN TAPE NOT TO EXCEED BEYOND THE EDGE(S) OF CARRIER TAPE AND THERE SHALL BE NO EXPOSURE OF ADHESIVE.
4. NO MORE THAN 3 CONSECUTIVE MISSING COMPONENTS ARE PERMITTED.
5. A TAPE TRAILER, HAVING AT LEAST THREE FEED HOLES ARE REQUIRED AFTER THE LAST COMPONENT.
6. SPLICES SHALL 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**

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 + 91-11-579 6150 Fax + 91-11-579 9569, 579 5290

e-mail [sales@cdil.com](mailto:sales@cdil.com) [www.cdil.com](http://www.cdil.com)