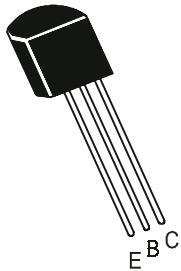


**NPN SILICON EPITAXIAL TRANSISTOR**

**CD9581  
TO-92  
CBE**



**General Purpose Transistor.**

**ABSOLUTE MAXIMUM RATINGS(Ta=25deg C )**

DESCRIPTION	SYMBOL	VALUE	UNIT
Collector -Base Voltage	VCBO	60	V
Collector -Emitter Voltage	VCEO	40	V
Emitter Base Voltage	VEBO	7.0	V
Collector Current	IC	100	mA
Power Dissipation	PD	500	mW
Operating & Storage Junction Temperature Range	TJ, Tstg	-65 to +125	deg C
Lead Temperature for Soldering 1/16" From Body, For 10 Seconds	TL	280	deg C
<b>THERMAL RESISTANCE</b>			
Junction to Ambient	Rth(j-a)	200	deg C/W

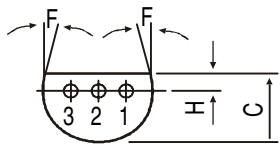
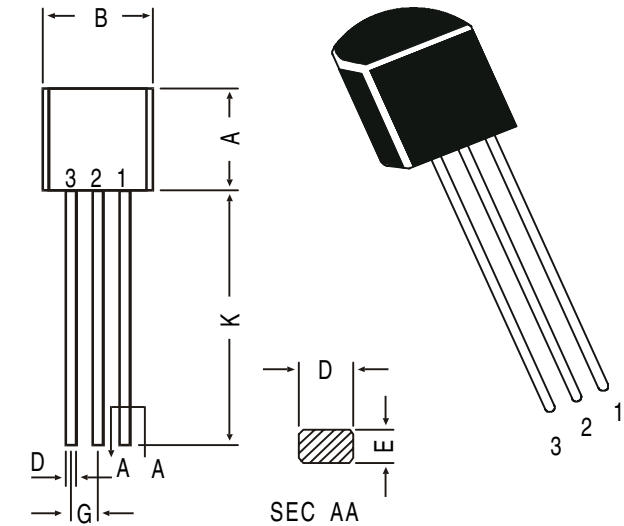
**ELECTRICAL CHARACTERISTICS (Ta=25 +- 3 deg C Unless Otherwise Specified)**

DESCRIPTION	SYMBOL	TEST CONDITION	MIN	MAX	UNIT
Collector -Base Voltage	VCBO	IC=10uA, IE=0	60	-	V
Collector -Emitter Voltage	VCEO*	IC=1mA, IB=0	40	-	V
Emitter- Base Voltage	VEBO	IE=100uA, IC=0	7.0	-	V
Collector Cut-off Current	ICBO	VCB=40V, IE=0	-	50	nA
	ICEO	VCE=35V, IB=0	-	1.0	uA
Emitter Cut -off Current	IEBO	VEB=7V, IC=0	-	200	nA
	hFE	IC=10mA, VCE=10V	150	300	
Forward Current Transfer Ratio	hFE	IC=100uA, VCE=10V	50	-	
	VCE(Sat) *	IC=50mA, IB=10mA	-	0.22	V
<b>DYNAMIC CHARACTERISTICS</b>					
Cut off frequency	ft	VCE=5V, IC=10mA	100	350	MHz
Noise Figure	NF	VCE=5V, IC=12uA	-	12	dB
		f=1kHz, Rs=k ohm			
Feed Back Capacitance	Cre	VCB=10V, f=1MHz	-	4.0	pF
Forward Current Transfer Ratio(A.C)	hfe	IC=0.5mA, VCE=5V,	100	-	
		f=50 kHz			

**\*Pulse test 300us Duty Cycle=2%**

# TO-92 Plastic Package

## TO-92 Transistors on Tape and Ammo Pack

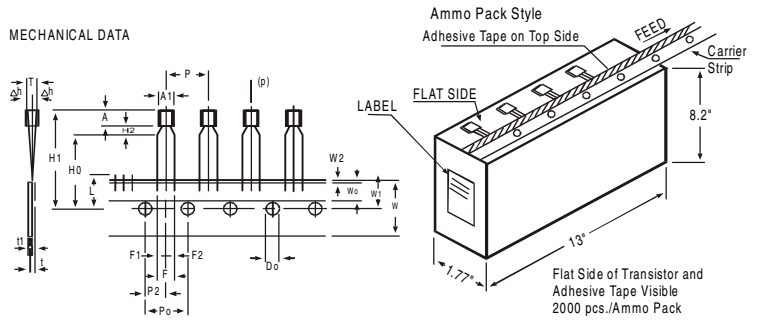


### PIN CONFIGURATION

1. BASE
2. COLLECTOR
3. EMITTER

All dimensions in mm.

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	—



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	P <sub>0</sub>		12.7		±0.3	CUMULATIVE PITCH ERROR 1.0 mm/20 PITCH
FEED HOLE CENTRE TO COMPONENT CENTRE	P <sub>2</sub>		6.35		±0.4	TO BE MEASURED AT BOTTOM OF CLINCH
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	W <sub>0</sub>	6			±0.2	
HOLE POSITION	W <sub>1</sub>	9			+0.7 -0.5	
HOLD-DOWN TAPE POSITION	W <sub>2</sub>	0.5			±0.2	
LEAD WIRE CLINCH HEIGHT	H <sub>0</sub>	16			±0.5	
COMPONENT HEIGHT	H <sub>1</sub>		23.25			
LENGTH OF SNIPPED LEADS	L		11.0			
FEED HOLE DIAMETER	D <sub>0</sub>		4		±0.2	
TOTAL TAPE THICKNESS	t		1.2			t1 0.3 - 0.6
LEAD - TO - LEAD DISTANCE F <sub>1</sub>	F <sub>2</sub>	2.54			+0.4 -0.1	
CLINCH HEIGHT	H <sub>2</sub>			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"	5.0K	17" x 15" x 13.5"	80.0K	23 kgs
TO-92 T&A	2K/ammo box	645 gm/2K pcs	12.5" x 8" x 1.8"	2.0K	17" x 15" x 13.5"	32.0K	12.5 kgs

## Customer Notes

### 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 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).

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