



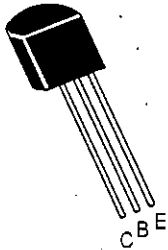
Continental Device India Limited

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



**PNP SILICON PLANAR EPITAXIAL TRANSISTORS**

**BC559, B, C**  
**BC560, B, C**



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

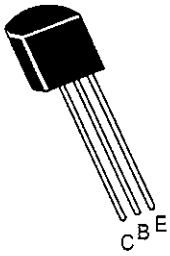
**Low Noise Transistors**

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

DESCRIPTION	SYMBOL	BC559	BC560	UNITS
Collector Emitter Voltage	$V_{CEO}$	30	45	V
Collector Base Voltage	$V_{CBO}$	30	50	V
Emitter Base Voltage	$V_{EBO}$	5	5	V
Collector Current Continuous	$I_C$		100	mA
Power Dissipation @ Tc=25°C	$P_D$		625	mW
Derate Above 25°C			5	mW/°C
Power 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
<b>THERMAL RESISTANCE</b>				
Junction to ambient	$R_{th(j-a)}$		200	°C/W
Junction to case	$R_{th(j-c)}$		83.3	°C/W

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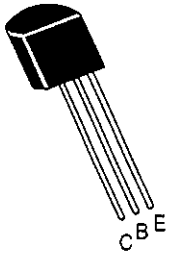
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**ELECTRICAL CHARACTERISTICS (Ta=25°C Unless Specified Otherwise)**

DESCRIPTION	SYMBOL	TEST CONDITION	MIN	TYP	MAX	UNITS
<b>Collector Emitter Voltage</b>						
	BC559	$V_{CE0}$ $I_C=10mA, I_B=0$	30			V
	BC560		45			V
<b>Collector Base Voltage</b>						
	BC559	$V_{CBO}$ $I_C=10\mu A, I_E=0$	30			V
	BC560		50			V
<b>Emitter Base Voltage</b>						
		$V_{EBO}$ $I_E=10\mu A, I_C=0$	5			V
<b>Collector Cut off Current</b>						
		$I_{CBO}$ $V_{CB}=30V, I_E=0$			15	nA
		$V_{CB}=30V, I_E=0$			5	$\mu A$
		$T_a=+125^\circ C$				
<b>Emitter Cut off Current</b>						
		$I_{EBO}$ $V_{CE}=40V, I_C=0$			15	nA
<b>DC Current Gain</b>						
	B	$V_{CE}=5V, I_C=10\mu A$	100			
	C		100			
	B	$V_{CE}=5V, I_C=2mA$	180		460	
	C		380		800	
	BC559, BC560		120		800	
<b>Collector Emitter Saturation Voltage</b>						
		$V_{CE(sat)}$ $I_C=10mA, I_B=0.5mA$			0.25	V
		$I_C=100mA, I_B=$ see note 1			0.6	V
		$I_C=100mA, I_B=5mA^*$		0.25		V

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DESCRIPTION	SYMBOL	TEST CONDITION	MIN	TYP	MAX	UNITS
Base Emitter Saturation Voltage	$V_{BE(sat)}$	$I_C=100mA, I_B=5mA^*$		1.1		V
Base Emitter On Voltage	$V_{BE(on)}$	$I_C=10\mu A, V_{CE}=5V$		0.52		V
		$I_C=100\mu A, V_{CE}=5V$		0.55		V
		$I_C=2mA, V_{CE}=5V$	0.55		0.70	V

**ELECTRICAL CHARACTERISTICS (Ta=25°C Unless Otherwise Specified)**

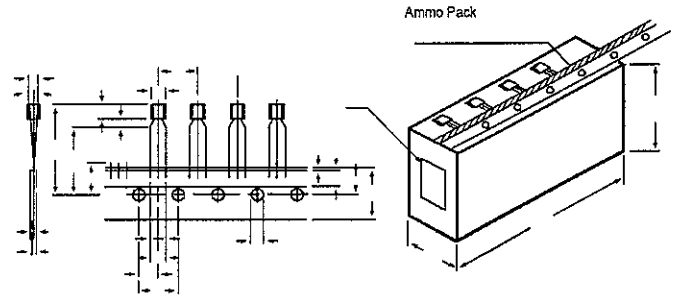
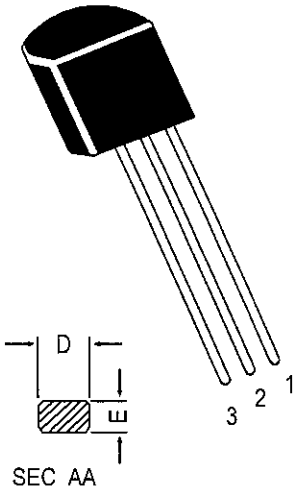
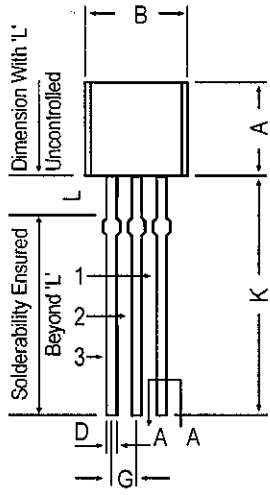
DESCRIPTION	SYMBOL	TEST CONDITION	MIN	TYP	MAX	UNITS
<b>DYNAMICS CHARACTERISTICS</b>						
Transition Frequency	$f_T$	$I_C=10mA, V_{CE}=5V$ $f=100MHz$		250		MHz
Collector Base Capacitance	$C_{cbo}$	$V_{CB}=10V, I_E=0,$ $f=1MHz$		2.5		pF
Noise Figure	$NF_1$	$V_{CE}=5V, I_C=200\mu A$ $R_S=2KW, f=30Hz$ To 15KHz			2.0	dB
	$NF_2$	$V_{CE}=5V, I_C=200\mu A$ $R_S=100KW, f=1.0KHz$ $f=200Hz$			10	dB
Small Signal Current Gain	<b>B</b>	$ h_{fe} $	$V_{CE}=5V, I_C=2mA$	240		500
	<b>C</b>		$f=1kHz$	450		900

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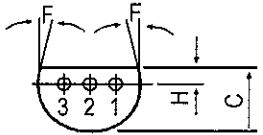
TO-92 Transistors on Tape and Ammo Pack



All dimensions in mm unless specified otherwise

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.



PIN CONFIGURATION  
1. EMITTER  
2. BASE  
3. COLLECTOR

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	CUMULATIVE PITCH ERROR 1.0 mm/20 PITCH
FEED HOLE CENTRE TO COMPONENT CENTRE	P2		6.35		±0.4	TO BE MEASURED AT BOTTOM OF CLINCH
DISTANCE BETWEEN OUTER LEADS	F		5.08		+0.6 -0.2	AT TOP OF BODY
COMPONENT ALIGNMENT	Δh		0	1		
TAPE WIDTH	W		18		±0.5	
HOLD-DOWN TAPE WIDTH	W0		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 11.0		
LENGTH OF SNIPPED LEADS	L					
FEED HOLE DIAMETER	Do		4		±0.2	
TOTAL TAPE THICKNESS	t			1.2		t 0.3 - 0.6
LEAD - TO - LEAD DISTANCE F1	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.

**Notes**

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### **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).

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