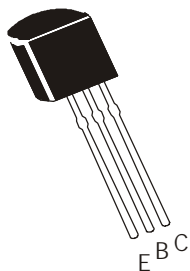


NPN SILICON PLANAR EPITAXIAL TRANSISTOR

BC317/A/B



TO-92
Plastic Package

Amplifier Transistor

ABSOLUTE MAXIMUM RATINGS

DESCRIPTION	SYMBOL	VALUE	UNITS
Collector Emitter Voltage	V_{CEO}	45	V
Collector Base Voltage	V_{CBO}	50	V
Emitter Base Voltage	V_{EBO}	6.0	V
Collector Current	I_C	150	mA
Power Dissipation @ $T_a=25^\circ\text{C}$ Derate Above 25°C	P_D	350 2.8	mW mW/°C
Power Dissipation @ $T_c=25^\circ\text{C}$ Derate Above 25°C	P_D	1.0 8.0	W mW/°C
Operating And Storage Junction Temperature Range	T_j, T_{stg}	- 55 to +150	°C

THERMAL CHARACTERISTICS

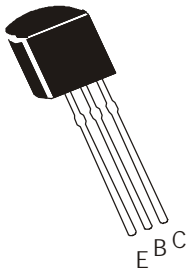
Junction to Case	$R_{th(j-c)}$	125	°C/W
Junction to Ambient in free air	$R_{th(j-a)}$	357	°C/W

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

DESCRIPTION	SYMBOL	TEST CONDITION	MIN	TYP	MAX	UNITS
Collector Emitter Voltage	V_{CEO}	$I_C=1\text{mA}, I_B=0$	45			V
Collector Emitter Voltage	V_{CES}	$I_C=100\mu\text{A}, V_{BE}=0$	50			V
Collector Base Voltage	V_{CBO}	$I_C=100\mu\text{A}, I_E=0$	50			V
Emitter Base Voltage	V_{EBO}	$I_E=100\mu\text{A}, I_C=0$	6.0			V
Collector Cut Off Current	I_{CBO}	$V_{CB}=20\text{V}, I_E=0$			30	nA
Emitter Cut Off Current	I_{EBO}	$V_{EB}=4\text{V}, I_C=0$			15	nA
Base Emitter On Voltage	$V_{BE(on)}$	$I_C=2\text{mA}, V_{CE}=5\text{V}$ $I_C=10\text{mA}, V_{CE}=5\text{V}$	0.57		0.72 0.77	V V
Collector Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C=100\text{mA}, I_B=5\text{mA}$			0.60	V
Base Emitter Saturation Voltage	$V_{BE(sat)}$	$I_C=10\text{mA}, I_B=0.5\text{mA}$ $I_C=100\text{mA}, I_B=5\text{mA}$		0.70 0.85		V V
DC Current Gain	h_{FE}	$I_C=10\mu\text{A}, V_{CE}=5\text{V}$ BC317A BC317B		90		
		$I_C=2\text{mA}, V_{CE}=5\text{V}$ BC317 BC317A BC317B	40 110 110 200		450 220 450	

NPN SILICON PLANAR EPITAXIAL TRANSISTOR

BC317/A/B



TO-92
Plastic Package

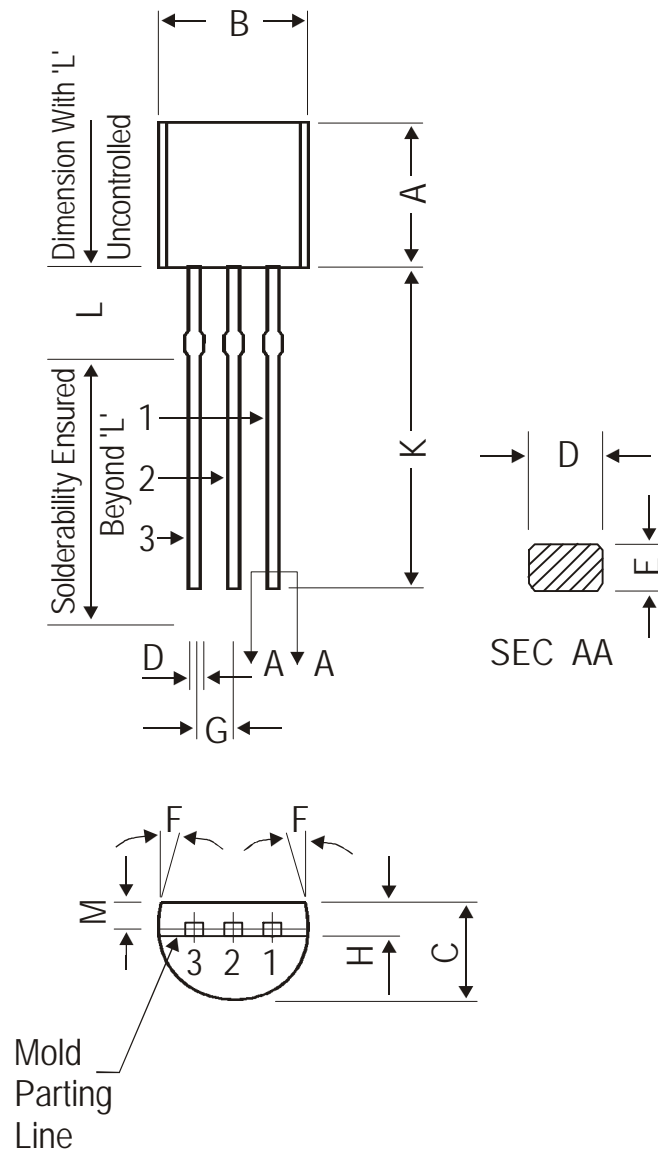
ELECTRICAL CHARACTERISTICS (T_a=25°C unless specified otherwise)

DYNAMIC CHARACTERISTICS

DESCRIPTION	SYMBOL	TEST CONDITION	MIN	TYP	MAX	UNITS
Noise Figure	NF	I _C =200μA, V _{CE} =5V, R _S =2kΩ, f=1KHz, BW=200Hz			6	dB
Output Capacitance	C _{ob}	V _{CB} =10V, I _E =0, f=1MHz			4	pF
Input Capacitance	C _{ib}	V _{EB} =0.5V, I _C =0, f=1MHz		11.5		pF
Transition Frequency	f _T	I _C =10mA, V _{CE} =5V		280		MHz
Voltage Feedback Ratio	h _{re}	I _C =2mA, V _{CE} =5V, f=1KHz		2		x10 ⁻⁴
Input Impedance	h _{ie}	I _C =2mA, V _{CE} =5V, f=1KHz		5		kΩ
Output Admittance	h _{oe}	I _C =2mA, V _{CE} =5V, f=1KHz		20		μmhos
Small Signal Current Gain	h _{fe}	BC317	125		500	
		BC317A	125		260	
		BC317B	240		500	

BC317_A_B_Rev220103E

TO-92 Plastic Package

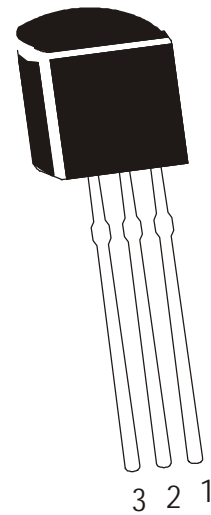


DIM	MIN.	MAX.
A	4.32	5.33
B	4.45	5.20
C	3.18	4.19
D	0.41	0.55
E	0.35	0.50
F	5 DEG	
G	1.14	1.40
H	1.20	1.40
K	12.70	—
L	1.982	2.082
M	1.03	1.20

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.

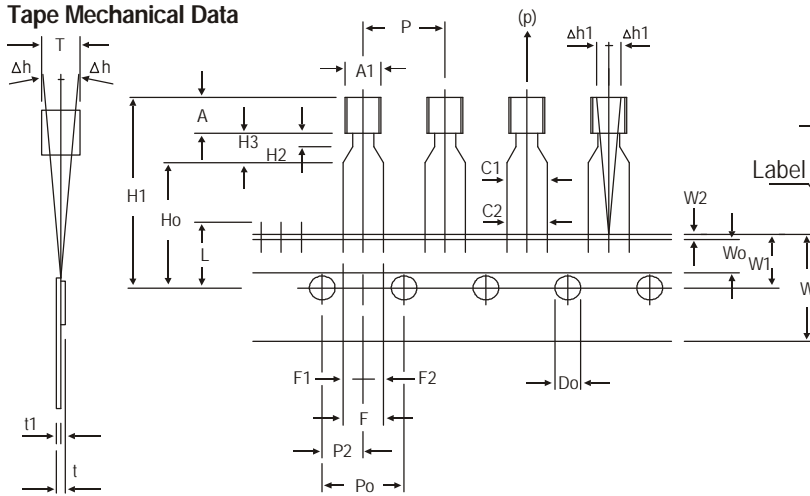
The currently valid dimensions and information, may please be confirmed from the TO-92 Drawing in the Packages and Packing Section of the Product Catalogue.

Packing Details

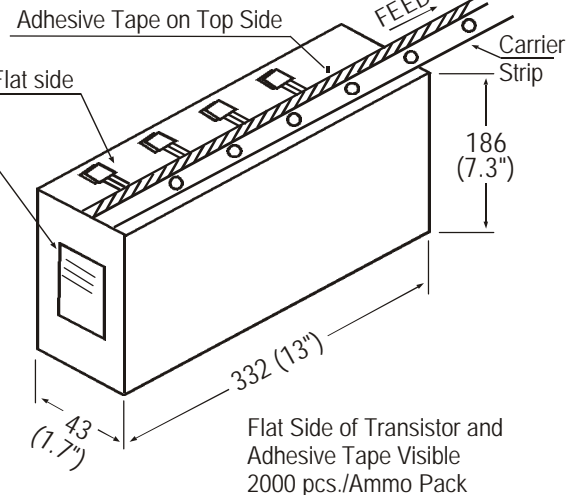
PACKAGE	STANDARD PACK		INNER CARTON BOX		OUTER CARTON BOX		
	Details	Net Weight/Qty	Size	Qty	Size	Qty	Gr Wt
TO-92 Bulk	1K/polybag	200 gm/1K pcs	3" x 7.5" x 7.5"	5K	17" x 15" x 13.5"	80K	23 kgs
TO-92 T&A	2K/ammo box	645 gm/2K pcs	12.5" x 8" x 1.8"	2K	17" x 15" x 13.5"	32K	12.5 kgs

TO-92 Tape and Ammo Pack

Tape Mechanical Data



Ammo Pack Style



All dimensions are in mm

ITEM	SYMBOL	SPECIFICATION			
		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		± 1.0
*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	$\Delta h1$		0	1.3	
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	H0		16		± 0.5
COMPONENT HEIGHT	H1			23.25	
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		2.54		+ 0.4 - 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			

NOTES

- Maximum alignment deviation between leads will not to be greater than 0.2mm.
- Maximum non-cumulative variation between tape feed holes shall not exceed 1 mm in 20 pitches.
- Holddown tape will not exceed beyond the edge(s) of carrier tape and there shall be no exposure of adhesive.
- There will be no more than three (3) consecutive missing components in a tape.
- A tape trailer, having at least three feed holes are provided after the last component in a tape.
- Splices should not interfere with the sprocket feed holes.

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

Disclaimer

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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