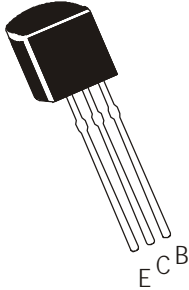


NPN SILICON PLANAR EPITAXIAL TRANSISTORS

BC183L, A, B, C



TO-92
Plastic Package

For Lead Free Parts,
Device Part # will be
Prefixed with "T"

Amplifier Transistors

ABSOLUTE MAXIMUM RATINGS ($T_a=25^\circ\text{C}$)

DESCRIPTION	SYMBOL	VALUE	UNITS
Collector Emitter Voltage	V_{CEO}	30	V
Collector Base Voltage	V_{CBO}	45	V
Emitter Base Voltage	V_{EBO}	6.0	V
Collector Current Continuous	I_C	100	mA
Power Dissipation at $T_a=25^\circ\text{C}$	P_D	350	mW
Derate Above 25°C		2.8	mW/ $^\circ\text{C}$
Power Dissipation at $T_c=25^\circ\text{C}$	P_D	1.0	W
Derate Above 25°C		8.0	mW/ $^\circ\text{C}$
Operating And Storage Junction Temperature Range	T_j, T_{stg}	- 55 to +150	$^\circ\text{C}$

THERMAL RESISTANCE

DESCRIPTION	SYMBOL	VALUE	UNITS
Junction to Case	$R_{th(j-c)}$	125	$^\circ\text{C/W}$
Junction to Ambient in free air	$R_{th(j-a)}$	357	$^\circ\text{C/W}$

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

DESCRIPTION	SYMBOL	TEST CONDITION	MIN	TYP	MAX	UNITS
Collector Emitter Voltage	V_{CEO}	$I_C=2\text{mA}, I_B=0$	30			V
Collector Base Voltage	V_{CBO}	$I_C=10\mu\text{A}, I_E=0$	45			V
Emitter Base Voltage	V_{EBO}	$I_E=100\mu\text{A}, I_C=0$	6.0			V
Collector Cut off Current	I_{CBO}	$V_{CB}=30\text{V}, I_E=0$			15	nA
Emitter Cut Off Current	I_{EBO}	$V_{EB}=4\text{V}, I_C=0$			15	nA

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

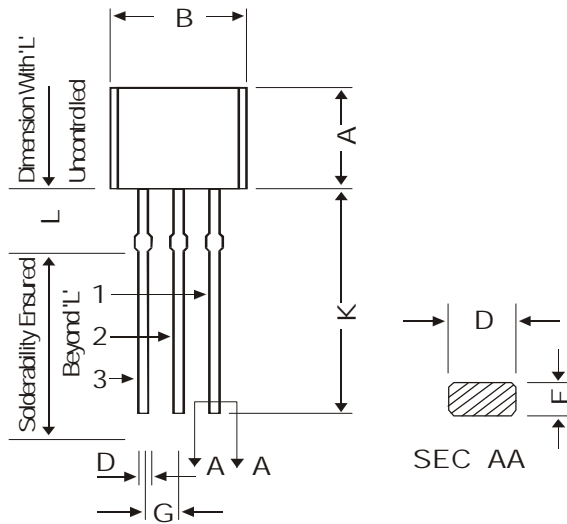
DESCRIPTION	SYMBOL	TEST CONDITION	MIN	TYP	MAX	UNITS
DC Current Gain	h _{FE}	I _C =10μA, V _{CE} =5V	40			
		I _C =2mA, V _{CE} =5V	120		800	
		I _C =100mA, V _{CE} =5V	80			
Collector Emitter Saturation Voltage	V _{CE (sat)}	I _C =10mA, I _B =0.5mA			0.25	V
		*I _C =100mA, I _B =5mA			0.60	V
Base Emitter Saturation Voltage	V _{BE (sat)}	*I _C =100mA, I _B =5mA			1.2	V
Base Emitter On Voltage	V _{BE (on)}	I _C =100μA, V _{CE} =5V		0.50		V
		I _C =2mA, V _{CE} =5V	0.55		0.70	V
		I _C =100mA, V _{CE} =5V		0.83		V

SMALL SIGNAL CHARACTERISTICS

DESCRIPTION	SYMBOL	TEST CONDITION	MIN	TYP	MAX	UNITS	
Transition Frequency	f _T	I _C =0.5mA, V _{CE} =3V, f=100MHz		120		MHz	
		I _C =10mA, V _{CE} =5V, f=100MHz	150			MHz	
Output Capacitance	C _{ob}	V _{CB} =10V, I _E =0, f=1MHz			5.0	pF	
Input Capacitance	C _{ib}	V _{BE} =0.5V, I _C =0, f=1MHz		8.0		pF	
Small Signal Current Gain	h _{fe}	I _C =2mA, V _{CE} =5V, f=1KHz					
			BC183L	125		900	
			BC183LA	125		260	
			BC183LB	240		500	
BC183LC	450		900				
Noise Figure	NF	I _C =0.2mA, V _{CE} =5V, R _S =2 kΩ, f=1kHz, F=200Hz			10	dB	

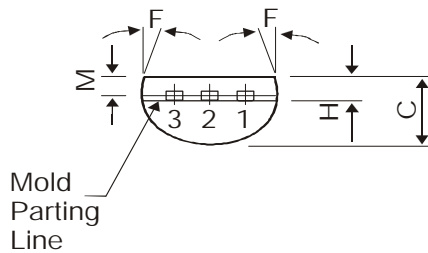
*Pulse Test: Pulse Time 300 ms, Duty Cycle=2%

TO-92 Plastic Package



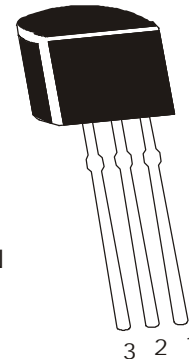
DIM	MIN.	MAX.
A	4.32	5.33
B	4.45	5.20
C	3.18	4.19
D	0.41	0.55
E	0.35	0.50
F	5 DEG	
G	1.14	1.40
H	1.20	1.40
K	12.70	—
L	1.982	2.082
M	1.03	1.20

All dimensions are in mm



PIN CONFIGURATION

1. BASE
2. COLLECTOR
3. EMITTER



The TO-92 Package , Tape and Ammo Pack drawings are correct as on the date of issue/revision of this Data Sheet.

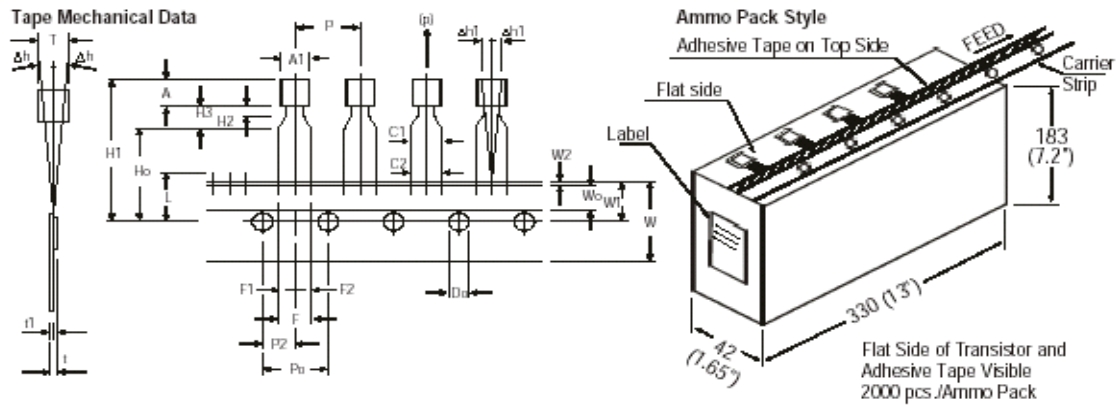
The currently valid dimensions and information, may please be confirmed from the TO-92 Drawing in the Packages

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



All dimensions are in mm

ITEM	SYMBOL	SPECIFICATION			
		MIN.	NOM.	MAX.	TOL.
BODY WIDTH	A1	4.45		5.20	
BODY HEIGHT	A	4.32		5.33	
BODY THICKNESS	T	3.18		4.19	
PITCH OF COMPONENT	P		12.7		± 1.0
*1 FEED HOLE PITCH	Po		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	Δh1	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	0.0		0.7	
LEAD WIRE CLINCH HEIGHT	Ho		16		± 0.5
COMPONENT HEIGHT	H1			24.0	
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	2.40		2.70	- 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



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