

BC549, A, B, C
BC550, A, B, C

T0-92
Plastic package
For lead-free parts the device part number will be prefixed with "T"

Low noise transistors

Absolute maximum ratings

Description	Symbol	BC549	BC550	Units
Collector emitter voltage	V_{CE0}	30	45	V
Collector base voltage	V_{CB0}	30	50	V
Emitter base voltage	V_{EB0}	5.0		V
Collector current continuous	I_C	100		mA
Power dissipation at $T_c = 25^\circ\text{C}$ Derate above 25°C	P_D	625	5.0	mW mW/ $^\circ\text{C}$
Power dissipation at $T_c = 25^\circ\text{C}$ Derate above 25°C	P_D	1.5	12	W mW/ $^\circ\text{C}$
Operating and storage junction temperature range	T_j, T_{stg}	-55 to +150		$^\circ\text{C}$

Thermal resistance

Junction to case	$R_{th(j-c)}$	83.3	$^\circ\text{C}/\text{W}$
Junction to ambient in free air	$R_{th(j-a)}$	200	$^\circ\text{C}/\text{W}$

Electrical characteristics

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

Description	Symbol	Test condition	Min.	Typ.	Max.	Units
Collector emitter voltage	V_{CE0}	$I_C = 1\text{mA}, I_B = 0$				
		BC549	30			V
Collector base voltage	V_{CB0}	$I_C = 100\mu\text{A}, I_E = 0$				
		BC549	30			V
Collector base voltage	V_{CB0}	BC550	50			V
		BC550	50			V
Emitter base voltage	V_{EB0}	$I_E = 10\mu\text{A}, I_C = 0$	5.0			V
Collector cut off current	I_{CB0}	$V_{CB} = 30\text{V}, I_E = 0$			15	nA
		$V_{CB} = 30\text{V}, I_E = 0, T_a = 125^\circ\text{C}$			5.0	μA
Emitter cut off current	I_{EB0}	$V_{EB} = 4\text{V}, I_C = 0$			15	nA

Electrical characteristics continued

(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 I _B = I _C /β	100			
		I _C = 2mA, V _{CE} = 5V				
		BC549A/BC550A	110		220	
		BC549B/550B	200		450	
		BC549C/550C	420		800	
		BC549/550	110		800	
Collector emitter saturation voltage	V _{CE (sat)}	I _C = 10mA, I _B = 0.5mA			0.25	V
		I _C = 10mA, I _B = See note (1)			0.60	V
		*I _C = 100mA, I _B = 5mA			0.60	V
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 = 10μA, C _E = 5V		0.52		V
		I _C = 100μA, V _{CE} = 5V		0.55		V
		I _C = 2mA, V _{CE} = 5V	0.55		0.70	V

Small signal characteristics

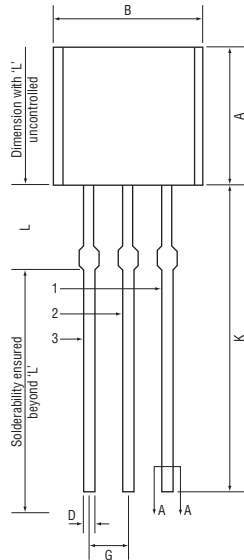
Description	Symbol	Test condition	Min.	Typ.	Max.	Units	
Transistors frequency	f _T	I _C = 10mA, V _{CE} = 5V, f = 100MHz				MHz	
Collector base capacitance	C _{cb0}	V _{CE} = 10V, I _E = 0, f = 1MHz				pF	
Small signal current	h _{fe}	I _C = 2mA, V _{CE} = 5V, f = 1kHz					
			BC549/550	125		900	
			BC549B/550B	240		500	
			BC549C/550C	450		900	
Noise figure	NF	I _C = 200μA, V _{CE} = 5V, R _S = 2kΩ			2.5	dB	
		f = 30Hz - 15kHz					
		I _C = 200μA, V _{CE} = 5V, R _S = 100kΩ, f = 1kHz			10	dB	

Note:

(1) I_B is value for which I_C = 11mA at V_{CE} = 11

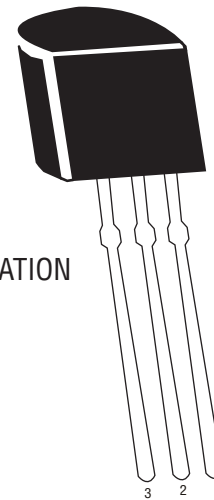
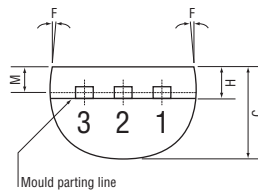
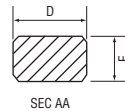
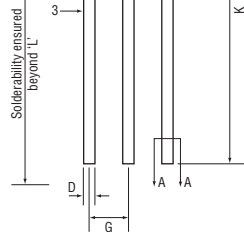
* Pulse test = 300μs – Duty cycle = 2%

T0-92 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. Emitter
 2. Base
 3. Collector

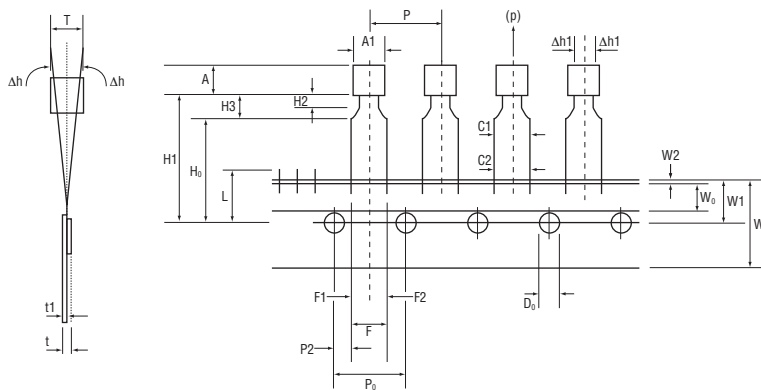
The T0-92 Package, Tape and Ammo Pack drawings are correct as on the date of issue/revision of this Data Sheet.

Packing details

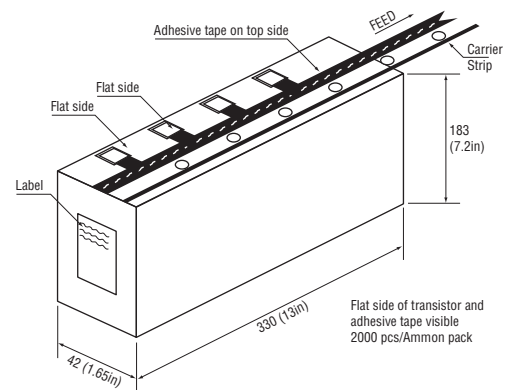
Package	Standard pack		Inner carton box		Outer carton box		
	Details	Net weight/qty.	Size	Qty.	Size	Qty.	Weight
TO-92 Bulk	1K/polybag	200gm/1K pcs	3 x 7.5 x 7.5in	5K	17 x 15 x 13.5in	80K	23kgs
TO-92 T&A	2K/ammo box	64 gm/2K pcs	12.5 x 8 x 1.8in	2K	17 x 15 x 13.5in	32K	12.5kgs

T0-92 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	4.45		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	P ₀		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
*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	W ₀		6		±0.2
Hole position	W1		9		+0.70 -0.5
Hold-down tape position	W2	0.0		0.7	
Lead wire clinch height	H ₀		16		±0.5
Component height	H1			24.0	
Length of clipped leads	L			11.0	
Feed hole diameter	D ₀		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 be greater than 0.2mm
- Maximum non-cumulative variation between tape feed holes shall not exceed 1mm in 20 pitches
- Hold-down 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 consecutive missing components in a tape
- A tape trailer has at least three feed holes provided after the last component in a tape
- Splices should not interfere with the sprocket feed holes.

REMARKS

- *1 Cumulative pitch error 1.0mm/ 20 pitch
- *2 To be measured at bottom of clinch
- *3 At top of body
- *4 At top of body
- *5 t1 0.3–0.6mm

Component disposal instructions

- CDIL Semiconductor devices are RoHS compliant, customers are requested to please dispose as per prevailing Environmental Legislation of their country.
- In Europe, please dispose as per EU Directive 2002/96/EC on Waste Electrical and Electronic Equipment (WEEE).