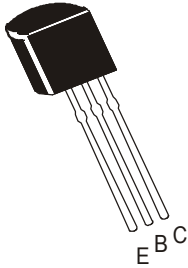


PNP SILICON PLANAR EPITAXIAL TRANSISTORS

BC559, B, C
BC560, B, C
TO-92 Plastic Package



Low Noise Transistors

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

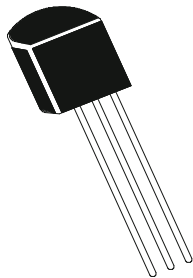
DESCRIPTION	SYMBOL	BC559	BC560	UNITS
Collector Emitter Voltage	V_{CEO}	30	45	V
Collector Base Voltage	V_{CBO}	30	50	V
Emitter Base Voltage	V_{EBO}	5	5	V
Collector Current Continuous	I_C	100		mA
Power Dissipation@ Tc=25 degC	P_D	625		mW
Derate Above 25 deg C		5		mW/ °C
Power Dissipation@ Tc=25 degC	P_D	1.5		W
Derate Above 25 deg C		12		mW/ °C
Operating And Storage Junction Temperature Range	T_j, T_{stg}	-55 to +150		°C
THERMAL RESISTANCE				
Junction to ambient	$R_{th(j-a)}$	200		°C/W
Junction to case	$R_{th(j-c)}$	83.3		°C/W

PNP SILICON PLANAR EPITAXIAL TRANSISTORS

BC559, B, C

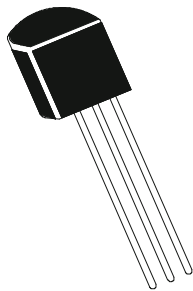
BC560, B, C

TO-92 Plastic Package



ELECTRICAL CHARACTERISTICS (Ta=25 deg C Unless Otherwise Specified)

DESCRIPTION	SYMBOL	TEST CONDITION	MIN	TYP	MAX	UNITS
Collector Emitter Voltage						
BC559	V_{CEO}	$I_C=10mA, I_B=0$	30			V
BC560			45			V
Collector Base Voltage						
BC559	V_{CBO}	$I_C=10uA, I_E=0$	30			V
BC560			50			V
Emitter Base Voltage	V_{EBO}	$I_E=10uA, I_C=0$	5			V
Collector Cut off Current	I_{CBO}	$V_{CB}=30V, I_E = 0$			15	nA
		$V_{CB}=30V, I_E = 0$			5	uA
		$T_a= +125 \text{ deg C}$				
Emitter Cut off Current	I_{EBO}	$V_{CE}=4V, I_C = 0$			15	nA
DC Current Gain						
B		$V_{CE}=5V, I_C=10uA$	100			
C			100			
B		$V_{CE}=5V, I_C=2mA$	180		460	
C			380		800	
BC559, BC560			120		800	
Collector Emitter Saturation Voltage						
	$V_{CE(sat)}$	$I_C=10mA, I_B=0.5mA$			0.25	V
		$I_C=100mA, I_B=\text{see note 1}$			0.6	V
		$I_C=100mA, I_B=5mA^*$		0.25		V
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	$V_{BE(on)}$	$I_C=10uA, V_{CE}=5V$		0.52		V
		$I_C=100uA, V_{CE}=5V$		0.55		V
		$I_C=2mA, V_{CE}=5V$	0.55		0.70	V

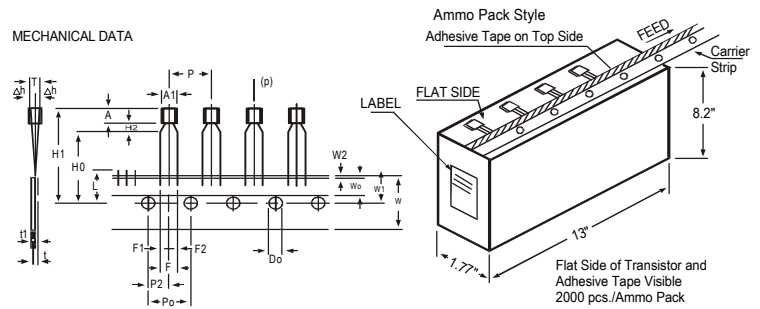
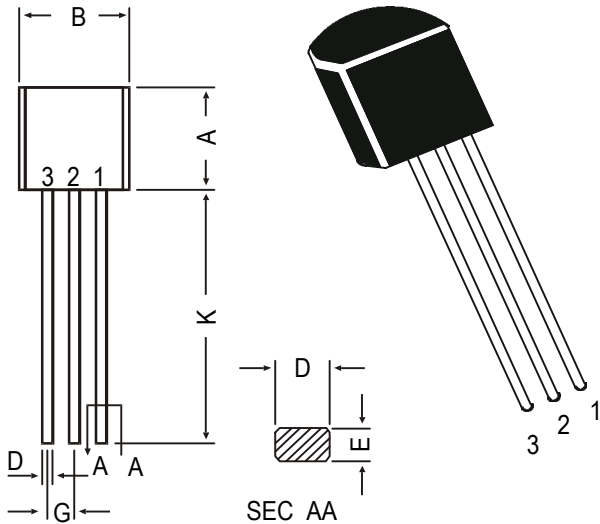


ELECTRICAL CHARACTERISTICS (Ta=25 deg C Unless Otherwise Specified)

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

TO-92 Plastic Package

TO-92 Transistors on Tape and Ammo Pack

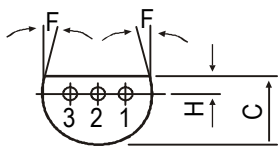


All dimensions in mm unless specified otherwise

ITEM	SYMBOL	SPECIFICATION				REMARKS
		MIN.	NOM.	MAX.	TOL.	
BODY WIDTH	A1	4.0		4.8		CUMULATIVE PITCH ERROR 1.0 mm/20 PITCH TO BE MEASURED AT BOTTOM OF CLINCH
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	
FEED HOLE CENTRE TO COMPONENT CENTRE	P2		6.35		±0.4	
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	t1 0.3 - 0.6
LEAD WIRE CLINCH HEIGHT	Ho		16		±0.5	
COMPONENT HEIGHT	H1			23.25		
LENGTH OF SNIPPED LEADS	L			11.0		
FEED HOLE DIAMETER	Do		4		±0.2	
TOTAL TAPE THICKNESS	t			1.2		
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. HOLD-DOWN 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.



PIN CONFIGURATION
 1. COLLECTOR
 2. BASE
 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
F	5 DEG	
G	1.14	1.40
H	1.14	1.53
K	12.70	—

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

Disclaimer

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