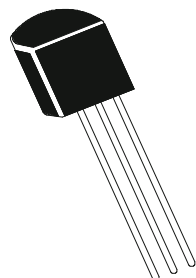




Continental Device India Limited

An IS/ISO 9002 and IECQ Certified Manufacturer

IS/ISO 9002
Lic# QSC/L- 000019.2**NPN SILICON PLANAR EPITAXIAL TRANSISTORS**
BC546,A, B, C
BC547, A, B, C
BC548, A, B, C
TO-92 Plastic Package**General Purpose Transistors****ABSOLUTE MAXIMUM RATINGS(Ta=25 deg C unless otherwise specified)**

DESCRIPTION	SYMBOL	BC546	BC547	BC548	UNITS
Collector Emitter Voltage	V_{CEO}	65	45	30	V
Collector Emitter Voltage	V_{CES}	80	50	30	V
Collector Base Voltage	V_{CBO}	80	50	30	V
Emitter Base Voltage	V_{EBO}	6	6	5	V
Collector Current Continuous	I_C		100		mA
Peak	I_{CM}		200		mA
Base Current - Peak	I_{BM}		200		mA
Emitter Current - Peak	I_{EM}		200		mA
Power Dissipation@ Ta=25 degC	P_{tot}		500		mW
Operating And Storage Junction	T_j, T_{stg}	-55 to +150			°C
Temperature Range					

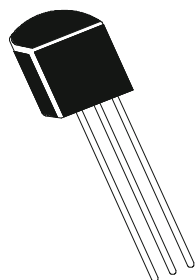
THERMAL RESISTANCE

Junction to ambient	$R_{th(j-a)}$		250		°C/W
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ELECTRICAL CHARACTERISTICS (Ta=25 deg C Unless Otherwise Specified)

DESCRIPTION	SYMBOL	TEST CONDITION	MIN	TYP	MAX	UNITS
Collector Emitter Voltage						
	BC546	V_{CEO}	$I_C=1mA, I_B=0$	65		V
	BC547			45		V
	BC548			30		V
Collector Base Voltage						
	BC546	V_{CBO}	$I_C=100\mu A, I_E=0$	80		V
	BC547			50		V
	BC548			30		V

NPN SILICON PLANAR EPITAXIAL TRANSISTORS

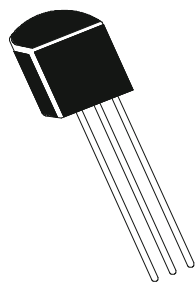


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TO-92 Plastic Package

DESCRIPTION	SYMBOL	TEST CONDITION	MIN	TYP	MAX	UNITS
Emitter Base Voltage						
BC546, BC547	V_{EBO}	$I_E=10\mu A, I_C=0$	6			V
BC548			5			V
Collector Cut off Current						
	I_{CBO}	$V_{CB}=30V, I_E=0$			15	nA
		$V_{CB}=30V, I_E=0$			5	μA
		$T_j=150 \text{ deg C}$				
Collector Cut off Current						
BC546	I_{CES}	$V_{CE}=80V$		0.2	15	nA
BC547		$V_{CE}=50V$		0.2	15	nA
BC548		$V_{CE}=30V$		0.2	15	nA
BC546		$V_{CE}=80V, T_j=125^\circ C$			4	μA
BC547		$V_{CE}=50V, T_j=125^\circ C$			4	μA
BC548		$V_{CE}=30V, T_j=125^\circ C$			4	μA
DC Current Gain						
A	h_{FE}	$V_{CE}=5V, I_C=10\mu A$		90		
B				150		
C				270		
BC546		$V_{CE}=5V, I_C=2mA$	110		450	
BC547, BC548			110		800	
A			110	180	220	
B			200	290	450	
C			420	520	800	
A		$V_{CE}=5V, I_C=100mA$		120		
B				200		
C				400		
Collector Emitter Saturation Voltage						
	$V_{CE(sat)}$	$I_C=10mA, I_B=0.5mA$		0.09	0.25	V
		$I_C=10mA, I_B=5mA$		0.2	0.6	V
		$I_C=100mA, I_B=\text{see note (1)}$		0.3	0.6	V
Base Emitter Saturation Voltage						
	$V_{BE(sat)}$	$I_C=10mA, I_B=0.5mA$		0.7		V
		$I_C=100mA, I_B=5mA$		0.9		V
Base Emitter On Voltage						
	$V_{BE(on)}$	$I_C=2mA, V_{CE}=5V$	0.55	0.66	0.7	V
		$I_C=10mA, V_{CE}=5V$			0.77	V

NPN SILICON PLANAR EPITAXIAL TRANSISTORS



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

DESCRIPTION

DYNAMICS CHARACTERISTICS	SYMBOL	TEST CONDITION	MIN	TYP	MAX	UNITS
Transition Frequency	f_T	$I_C=10\text{mA}, V_{CE}=5\text{V}$ $f=100\text{MHz}$		300		MHz
Collector output Capacitance	C_{cbo}	$V_{CB}=10\text{V}, f=1\text{MHz}$		1.7	4.5	pF
Emitter input Capacitance	C_{ib}	$V_{EB}=0.5\text{V}, f=1\text{MHz}$		9.00		pF
Noise Figure	NF	$V_{CE}=5\text{V}, I_C=0.2\text{mA}$ $R_S=2\text{k}\Omega, f=1\text{kHz}$ $B=200\text{Hz}$		2	10	dB
Small Signal Current Gain						
	A	h_{fe} $V_{CE}=5\text{V}, I_C=2\text{mA}$ $f=1\text{kHz}$		220		
	B			330		
	C			600		
Input Impedance						
	A	h_{ie} $V_{CE}=5\text{V}, I_C=2\text{mA}$ $f=1\text{kHz}$	1.6	2.7	4.5	k Ω
	B		3.2	4.5	8.5	
	C		6	8.7	15	
Voltage Feedback						
	A	h_{re} $V_{CE}=5\text{V}, I_C=2\text{mA}$ $f=1\text{kHz}$		1.5		x10
	B			2		
	C			3		
DYNAMICS CHARACTERISTICS	SYMBOL	TEST CONDITION	MIN	TYP	MAX	UNITS
Output Admittance						
	A	h_{oe} $V_{CE}=5\text{V}, I_C=2\text{mA}$ $f=1\text{kHz}$		18	30	μMHO
	B			30	60	
	C			60	110	

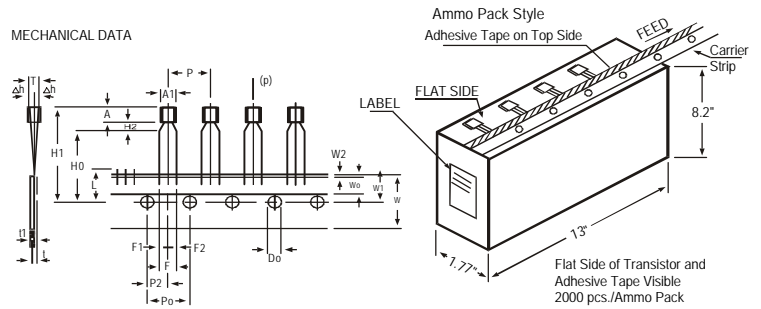
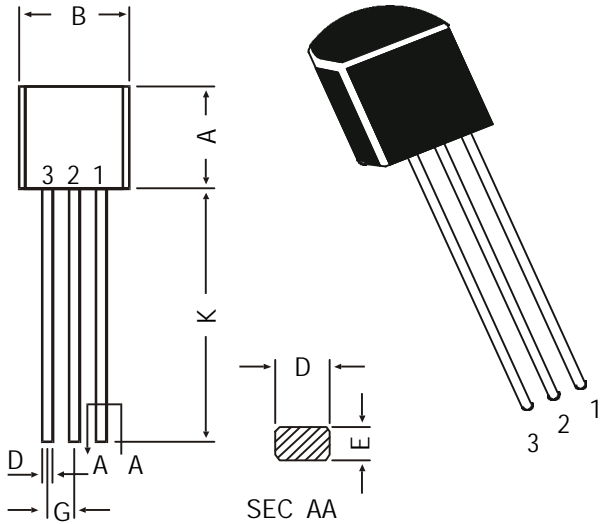
NOTE(1) : I_B is value for which $I_C = 11\text{mA}$ @ $V_{CE} = 10\text{V}$

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TO-92 Transistors on Tape and Ammo Pack

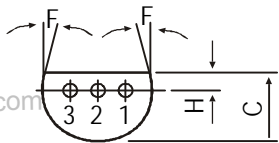


All dimensions in mm unless specified otherwise

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	HOLE POSITION
HOLD-DOWN TAPE WIDTH	Wo		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
LEAD - TO - LEAD DISTANCE F1	F1		2.54		+0.4 -0.1	
CLINCH HEIGHT	H2			3		PULL - OUT FORCE
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.



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
E	0.35	0.50
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

Notes**BC546,A, B, C
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BC548, A, B, C****TO-92 Plastic Package**

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Disclaimer

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