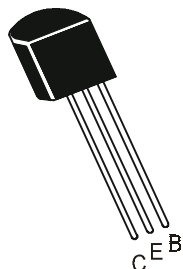


## NPN SILICON PLANAR EPITAXIAL TRANSISTOR

**BF959**



**TO-92  
Plastic Package**

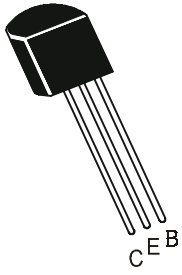
**BF 959 IS A SILICON NPN TRANSISTOR INTENDED FOR USE AT VERY HIGH FREQUENCIES.**

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

DESCRIPTION	SYMBOL	VALUE	UNIT
Collector Emitter Voltage	$V_{CEO}$	20	V
Collector Base Voltage	$V_{CBO}$	30	V
Emitter Base Voltage	$V_{EBO}$	3	V
Collector Current Continuous	$I_C$	100	mA
Power Dissipation @ Ta=25°C	$P_D$	625	mW
Derate Above 25°C		5.0	mW/°C
Power Dissipation @ Tc=25°C	$P_D$	1.5	W
Derate Above 25°C		12	mW/°C
Operating And Storage Junction Temperature Range	$T_j, T_{stg}$	-55 to +150	°C

### THERMAL RESISTANCE

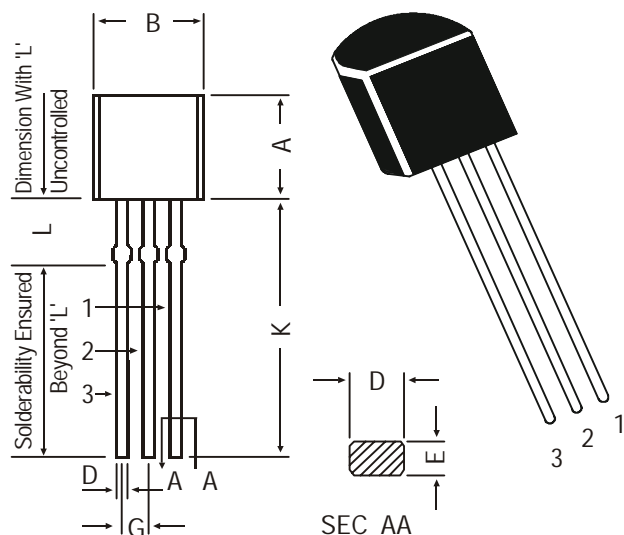
Junction to ambient	$R_{th(j-a)}$	200	°C/W
Junction to case	$R_{th(j-c)}$	83.3	°C/W

**ELECTRICAL CHARACTERISTICS (Ta=25°C unless specified otherwise)**

DESCRIPTION	SYMBOL	TEST CONDITION	VALUE			UNIT
			MIN	TYP	MAX	
Collector Emitter Breakdown Voltage	$BV_{CEO}$	$I_C=1mA, I_B=0$	20			V
Collector Base Breakdown Voltage	$BV_{CBO}$	$I_C=10\mu A, I_E=0$	30			V
Emitter Base Breakdown Voltage	$BV_{EBO}$	$I_E=10\mu A, I_C=0$	3			V
Collector Cut off Current	$I_{CBO}$	$V_{CB}=20V, I_E=0$			100	nA
DC Current Gain	$h_{FE}$	$V_{CE}=10V, I_C=5mA$	35			
		$V_{CE}=10V, I_C=20mA$	40			
Base Emitter Saturation Voltage	$V_{BE(sat)}$	$I_C=30mA, I_B=2mA$			1.0	V
Collector Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C=30mA, I_B=2mA$			1.0	V
<b><u>DYNAMIC CHARACTERISTICS</u></b>						
Transition Frequency	$f_T$	$I_C=20mA, V_{CE}=10V, f=100MHz$	700			MHz
		$I_C=30mA, V_{CE}=10V, f=100MHz$	600			MHz
Common Emitter Feedback Capacitance	$C_{re}$	$V_{CB}=10V, f=10MHz$		0.65		pF
Noise Figure	NF	$I_C=4mA, V_{CE}=10V, R_s=50\Omega, f=200MHz$		3.0		dB

## TO-92 Plastic Package

## TO-92 Transistors on Tape and Ammo Pack



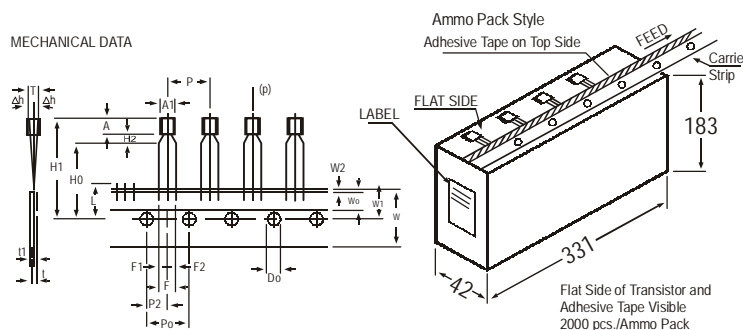
SEC AA

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	—
L	1.982	2.082

All dimensions in mm.

## PIN CONFIGURATION

1. BASE
2. EMITTER
3. COLLECTOR



All dimensions in mm unless specified otherwise

ITEM	SYMBOL	SPECIFICATION				REMARKS
		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	
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	
COMPONENT ALIGNMENT	Δh		0	1		AT TOP OF BODY
TAPE WIDTH	W		18		±0.5	
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	
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		t1 0.3 - 0.6
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. 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.

## 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"	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

### Disclaimer

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