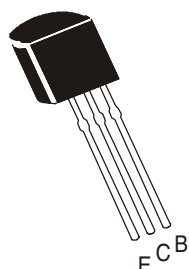


## NPN SILICON PLANAR EPITAXIAL TRANSISTOR

2N5172



TO-92  
Plastic Package

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

DESCRIPTION	SYMBOL	VALUE	UNITS
Collector Emitter Voltage	$V_{CEO}$	25	V
Collector Base Voltage	$V_{CBO}$	25	V
Emitter Base Voltage	$V_{EBO}$	5	V
Collector Current Continuous	$I_C$	100	mA
Power Dissipation @ Ta=25°C	$P_D$	625	mW
Derate Above 25°C		5	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	MIN	TYP	MAX	UNITS
Collector Emitter Voltage	$V_{CEO}$	$I_C=10mA, I_B=0$	25			
Collector Cut Off Current	$I_{CBO}$	$V_{CB}=25V, I_E=0$			100	nA
		$V_{CB}=25V, I_E=0, T_a=100°C$			10	μA
Collector Cut Off Current	$I_{CES}$	$V_{CE}=25V, V_{BE}=0V$			100	nA
Emitter Cut Off Current	$I_{EBO}$	$V_{EB}=5V, I_C=0$			100	nA
DC Current Gain	$h_{FE}$	$V_{CE}=10V, I_C=10mA$	100		500	
Collector Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C=10mA, I_B=1mA$			0.25	V
Base Emitter Saturation Voltage	$V_{BE(sat)}$	$I_C=10mA, I_B=1mA$		0.75		V
Base Emitter On Voltage	$V_{BE(on)}$	$V_{CE}=10V, I_C=10mA$	0.5		1.2	V

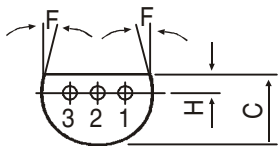
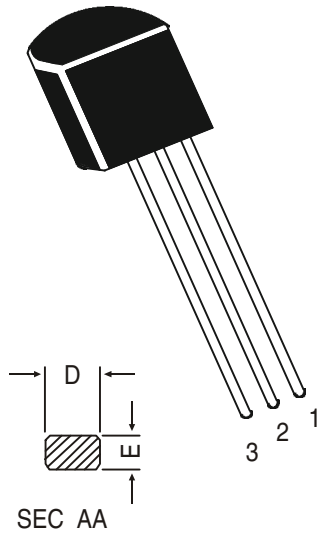
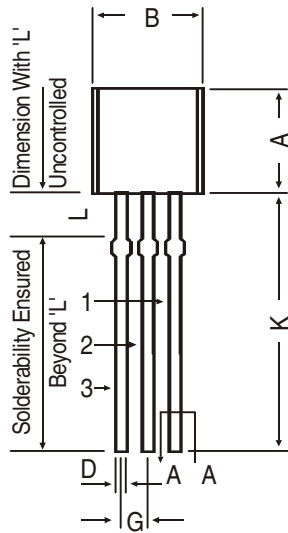
### DYNAMIC CHARACTERISTICS

Current Gain-Bandwidth Product	$f_T$	$I_C=2mA, V_{CE}=5V$		120		MHz
Collector Base Capacitance	$C_{Cb}$	$I_E=0, V_{CB}=0V, f=1MHz$	1.6		10	pF
Small Signal Current Gain	$h_{fe}$	$V_{CE}=10V, I_C=10mA$ $f=1kHz$	100		750	

# TO-92 Plastic Package

## TO-92 Plastic Package

### TO-92 Transistors on Tape and Ammo Pack

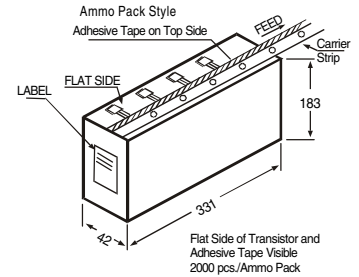
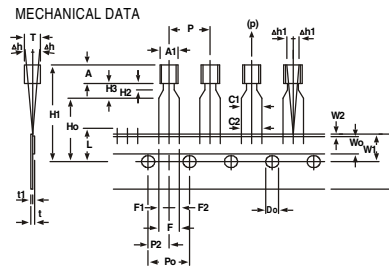


#### PIN CONFIGURATION

1. BASE
2. COLLECTOR
3. EMITTER

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.



ITEM	SYMBOL	SPECIFICATION				REMARKS
		MIN.	NOM.	MAX.	TOL.	
BODY WIDTH	A1	4.0		4.8		CUMULATIVE PITCH ERROR 1.0 mm/20 PITCH
BODY HEIGHT	A	4.8		5.2		
BODY THICKNESS	T	3.9		4.2		
PITCH OF COMPONENT	P		12.7		%%P1	TO BE MEASURED AT BOTTOM OF CLINCH
FEED HOLE PITCH	Po		12.7		%%P0.3	
FEED HOLE CENTRE TO COMPONENT CENTRE					%%P0.4	
DISTANCE BETWEEN OUTER LEADS	P2		6.35		+0.6 -0.2	AT TOP OF BODY AT TOP OF BODY
LEADS	F		5.08			
COMPONENT ALIGNMENT SIDE VIEW	Δh		0	1.0		
COMPONENT ALIGNMENT FRONT VIEW	Δh1		0	1.3		t1 0.3 - 0.6
TAPE WIDTH	W		18		%%P0.5	
HOLD-DOWN TAPE WIDTH	W0		6		%%P0.2	
HOLE POSITION	W1		9		+0.7 -0.5	t1 0.3 - 0.6
HOLD-DOWN TAPE POSITION	W2		0.5		%%P0.2	
LEAD WIRE CLINCH HEIGHT	Ho		16		%%P0.5	
COMPONENT HEIGHT	H1			23.25		t1 0.3 - 0.6
LENGTH OF SNIPPED LEADS	L			11.0		
FEED HOLE DIAMETER	Do		4		%%P0.2	
TOTAL TAPE THICKNESS	t			1.2		t1 0.3 - 0.6
LEAD - TO - LEAD DISTANCE	F1, F2		2.54		+0.4, -0.1	
STAND OFF	H2	0.45		1.45		
CLINCH HEIGHT	H3			3.0		t1 0.3 - 0.6
LEAD PARALLELISM	C1 - C2			0.22		
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 IS PERMITTED.
5. A TAPE TRAILER, HAVING AT LEAST THREE FEED HOLES IS 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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