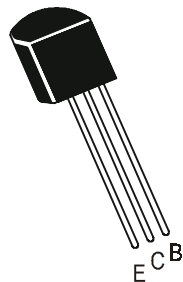


## NPN SILICON EPITAXIAL TRANSISTOR

**CSD545**



**TO-92  
Plastic Package**

**Low Frequency Power Amplifier And Converter Stage Applications.**

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

DESCRIPTION	SYMBOL	VALUE	UNIT
Collector Emitter Voltage	$BV_{CEO}$	25	V
Collector Base Voltage	$BV_{CBO}$	25	V
Emitter Base Voltage	$BV_{EBO}$	5	V
Collector Current Continuous	$I_C$	1	A
	Peak $I_{CM}$	1.5	A
Collector Power Dissipation	$P_D$	600	mW
Operating And Storage Junction Temperature Range	$T_j, T_{stg}$	-55 to +150	°C

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

DESCRIPTION	SYMBOL	TEST CONDITION	MIN	TYP	MAX	UNIT
Collector Emitter Breakdown Voltage	$BV_{CEO}$	$I_C=1mA, I_B=0$	25			V
Collector Base Breakdown Voltage	$BV_{CBO}$	$I_C=10\mu A, I_B=0$	25			V
Emitter Base Breakdown Voltage	$BV_{EBO}$	$I_E=10\mu A, I_C=0$	5			V
Collector Cut off Current	$I_{CBO}$	$V_{CB}=20V, I_E = 0$			1.0	$\mu A$
Emitter Cut off Current	$I_{EBO}$	$V_{BE}=4V, I_E = 0$			1.0	$\mu A$
DC Current Gain	$h_{FE(1)}$	$V_{CE}=2V, I_C=50mA$	60		560	
	$h_{FE(2)*}$	$V_{CE}=2V, I_C=1A$	30			
Base Emitter Saturation Voltage	$V_{BE(sat)*}$	$I_C=500mA, I_B=50mA$		0.85	1.2	V
Collector Emitter Saturation Voltage	$V_{CE(sat)*}$	$I_C=500mA, I_B=50mA$		0.1	0.3	V

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

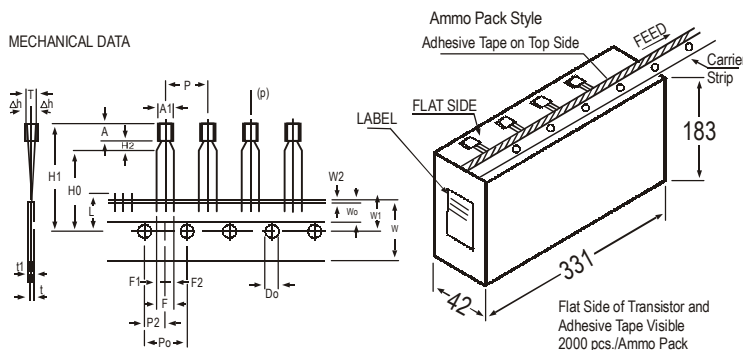
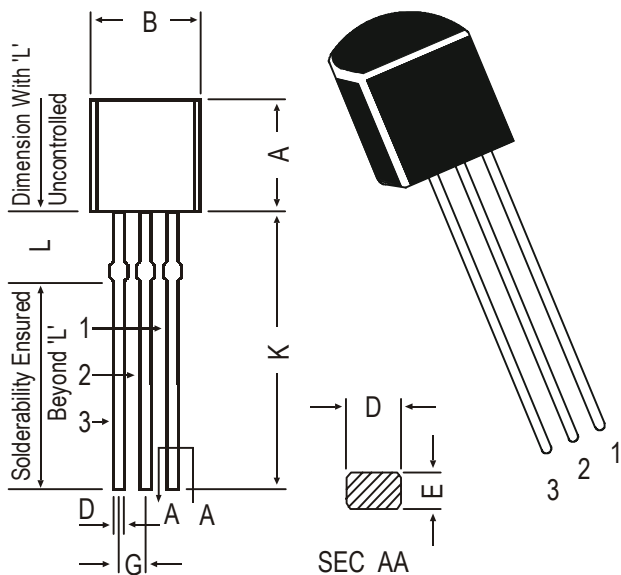
DESCRIPTION	SYMBOL	TEST CONDITION	MIN	TYP	MAX	UNIT
<b>DYNAMIC CHARACTERISTICS</b>						
Transition Frequency	$f_T$	$I_C=50mA, V_{CE}=10V$		180		MHz
Collector Output Capacitance	$C_{ob}$	$I_E=0, V_{CB}=10V$ $f=1MHz$		15		pF

CLASSIFICATION	D	E	F	G
$h_{FE(1)}$	60-120	100-200	160-320	280-560

\*Pulse Condition: Width  $\leq 300\mu s$ , Duty Cycle  $\leq 2\%$ .

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		
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	CUMULATIVE PITCH ERROR 1.0 mm/20 PITCH TO BE MEASURED AT BOTTOM OF CLINCH
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		±1 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.

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 diminsions in mm.

PIN CONFIGURATION

1. BASE
2. COLLECTOR
3. EMITTER

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

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**Continental Device India Limited**

C-120 Naraina Industrial Area, New Delhi 110 028, India.

Telephone + 91-11-579 6150 Fax + 91-11-579 9569, 579 5290

e-mail [sales@cdil.com](mailto:sales@cdil.com) [www.cdil.com](http://www.cdil.com)