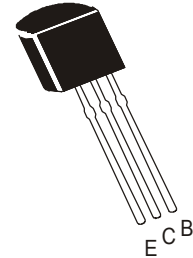


**TO-92 PLASTIC PACKAGE  
NPN SILICON PLANAR EPITAXIAL, HIGH VOLTAGE  
FAST SWITCHING POWER TRANSISTOR**



**Compact Fluorescent Lamps (CFLS)**

**ABSOLUTE MAXIMUM RATING (T<sub>a</sub> =25°C )**

DESCRIPTION	SYMBOL	VALUE	UNIT
Collector Base Voltage	V <sub>CBO</sub>	600	V
Collector Emitter Voltage	V <sub>CEO</sub>	400	V
Emitter Base Voltage	V <sub>EBO</sub>	9.0	V
Collector Current Continuous	I <sub>C</sub>	1.0	A
Peak	I <sub>CM</sub>	1.5	A
Power Dissipation	P <sub>D</sub>	1.0	W
Operating and Storage Junction Temperature Range	T <sub>j</sub> , T <sub>stg</sub>	- 55 to +150	°C

**ELECTRICAL CHARACTERISTICS (T<sub>a</sub>=25°C unless specified otherwise)**

DESCRIPTION	SYMBOL	TEST CONDITION	MIN	TYP	MAX	UNIT
Collector Base Voltage	V <sub>CBO</sub>	I <sub>C</sub> =1mA, I <sub>E</sub> =0	600			V
Collector Emitter Voltage	V <sub>CEO</sub>	I <sub>C</sub> =1mA, I <sub>B</sub> =0	400			V
Emitter Base Voltage	V <sub>EBO</sub>	I <sub>E</sub> =1mA, I <sub>C</sub> =0	9.0			V
Collector Cut Off Current	I <sub>CBO</sub>	V <sub>CB</sub> =600V, I <sub>E</sub> = 0			100	μA
Collector Cut Off Current	I <sub>CEO</sub>	V <sub>CE</sub> =400V, I <sub>B</sub> = 0			50	μA
Emitter Cut Off Current	I <sub>EBO</sub>	V <sub>EB</sub> =9V, I <sub>C</sub> =0			100	μA
DC Current Gain	h <sub>FE</sub>	*V <sub>CE</sub> =5V, I <sub>C</sub> =0.1A V <sub>CE</sub> =5V, I <sub>C</sub> =400mA	15 5.0		28 20	
Collector Emitter Saturation Voltage	V <sub>CE(sat)</sub>	I <sub>C</sub> =100mA, I <sub>B</sub> =50mA I <sub>C</sub> =230mA, I <sub>B</sub> =50mA	0.05 0.12		0.11 0.24	V
Base Emitter Saturation Voltage	V <sub>BE(sat)</sub>	I <sub>C</sub> =100mA, I <sub>B</sub> =50mA	0.82		0.88	V
Fall Time	t <sub>f</sub>	I <sub>C</sub> =0.11A			0.4	μs
Storage Time	t <sub>s</sub>	I <sub>C</sub> =0.1A, I <sub>B1</sub> = I <sub>B2</sub> =0.05A	0.07		0.9	μs
Transition Frequency	f <sub>T</sub>	V <sub>CE</sub> =10V, I <sub>C</sub> =0.1A, f=1MHZ	4.0			MHZ

**\*h<sub>FE</sub> Classification**

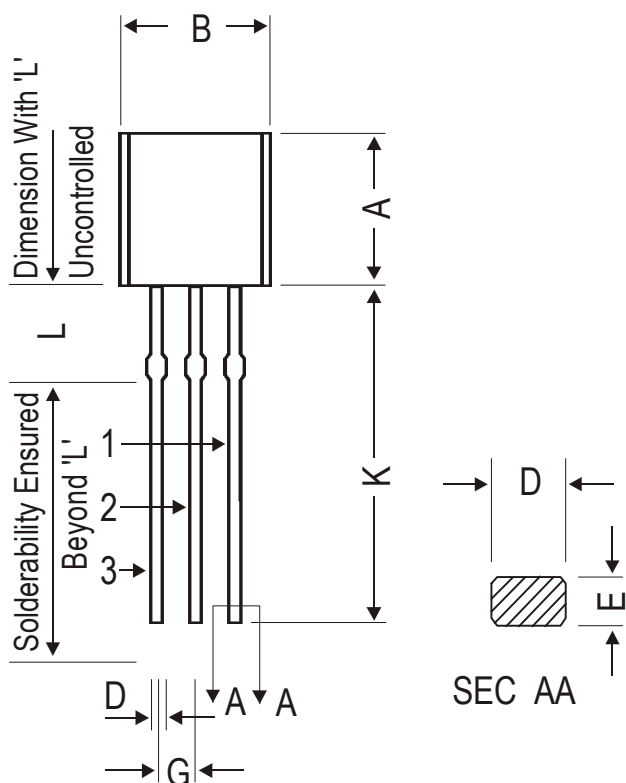
Note:- Product is pre selected in DC current gain (Groups A to E). RECTRON reserves the right to ship any of the groups according to production availability.

**MARKING**

X = Year of Manufacturer Code  
Y = Month Code

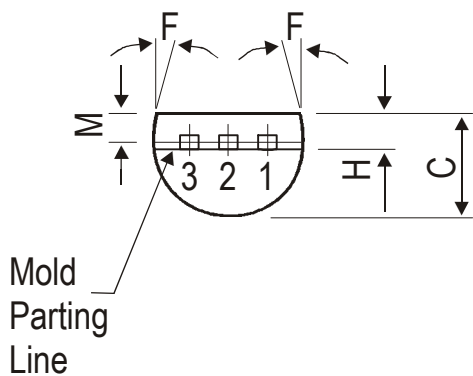
	A	B	C	E
	15-19	18-22	21-25	24-28
	CD	CD	CD	CD
	13002A	13002B	13002C	13002E
	XY	XY	XY	XY
	TCD	TCD	TCD	TCD
	13002A	13002B	13002C	13002E
	XY	XY	XY	XY

## TO-92 Plastic Package



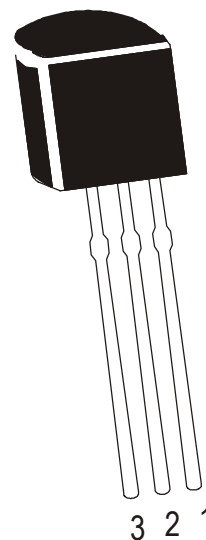
DIM	MIN.	MAX.
A	4.32	5.33
B	4.45	5.20
C	3.18	4.19
D	0.41	0.55
E	0.35	0.50
F	5 DEG	
G	1.14	1.40
H	1.20	1.40
K	12.70	—
L	1.982	2.082
M	1.03	1.20

All dimensions are in mm



### PIN CONFIGURATION

1. BASE
2. COLLECTOR
3. EMITTER



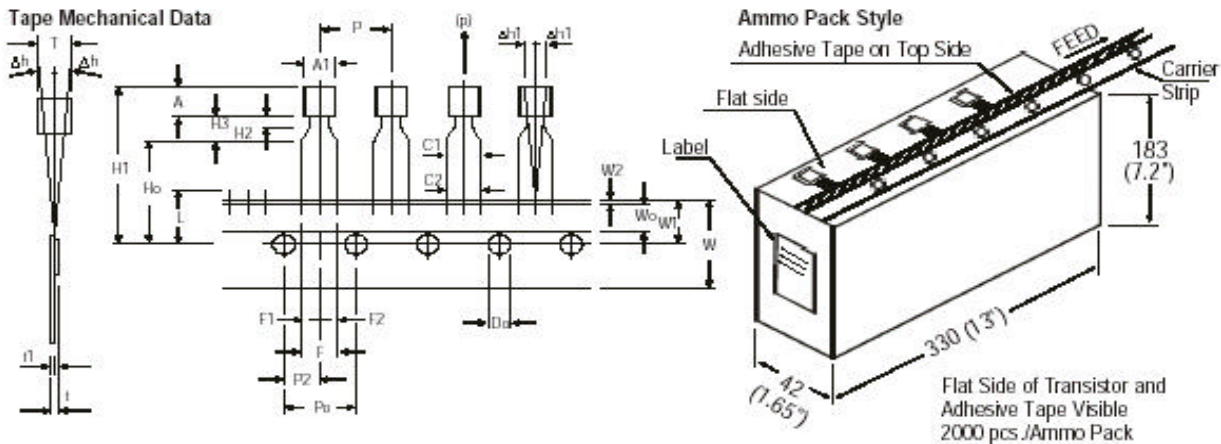
The TO-92 Package, Tape and Ammo Pack Drawings are correct as on the date of issue/revision of this Data Sheet.

The currently valid dimensions and information, may please be confirmed from the TO-92 Drawing in the Packages and Packing Section of the Product Catalogue.

### Packing Details

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

## TO-92 Tape and Ammo Pack



All dimensions are in mm

ITEM	SYMBOL	SPECIFICATION			
		MIN.	NOM.	MAX.	TOL.
BODY WIDTH	A1	4.45		5.20	
BODY HEIGHT	A	4.32		5.33	
BODY THICKNESS	T	3.18		4.19	
PITCH OF COMPONENT	P		12.7		± 1.0
*1 FEED HOLE PITCH	Po		12.7		± 0.3
*2 FEED HOLE CENTRE TO COMPONENT CENTRE	P2		6.35		± 0.4
DISTANCE BETWEEN OUTER LEADS	F		5.08		+ 0.6 - 0.2
*3 COMPONENT ALIGNMENT SIDE VIEW	$\Delta h$		0	1.0	
*4 COMPONENT ALIGNMENT FRONT VIEW	$\Delta h1$		0	1.3	
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	0.0		0.7	
LEAD WIRE CLINCH HEIGHT	Ho		16		± 0.5
COMPONENT HEIGHT	H1			24.0	
LENGTH OF SNIPPED LEADS	L			11.0	
FEED HOLE DIAMETER	Do		4		± 0.2
*5 TOTAL TAPE THICKNESS	t			1.2	
LEAD - TO - LEAD DISTANCE	F1, F2	2.40		2.70	- 0.1
STAND OFF	H2	0.45		1.45	
CLINCH HEIGHT	H3			3.0	
LEAD PARALLELISM	C1 - C2			0.22	
PULL - OUT FORCE	(p)	6N			

### NOTES

1. Maximum alignment deviation between leads will not to be greater than 0.2mm.
2. Maximum non-cumulative variation between tape feed holes shall not exceed 1 mm in 20 pitches.
3. Holddown tape will not exceed beyond the edge(s) of carrier tape and there shall be no exposure of adhesive.
4. There will be no more than three (3) consecutive missing components in a tape.
5. A tape trailer, having at least three feed holes are provided after the last component in a tape.
6. Splices should not interfere with the sprocket feed holes.

### REMARKS

- \*1 Cumulative pitch error 1.0 mm/20 pitch
- \*2 To be measured at bottom of clinch
- \*3 At top of body
- \*4 At top of body
- \*5 t1 0.3 - 0.6 mm

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