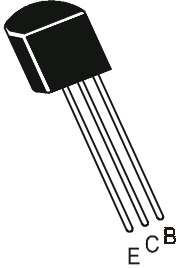


## NPN SILICON PLANAR EPITAXIAL TRANSISTOR

CSC388ATM



TO - 92  
Plastic Package

### TV Final Picture IF Amplifier Applications

#### ABSOLUTE MAXIMUM RATINGS (Ta=25°C )

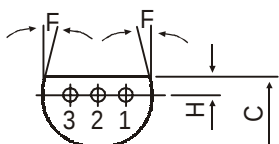
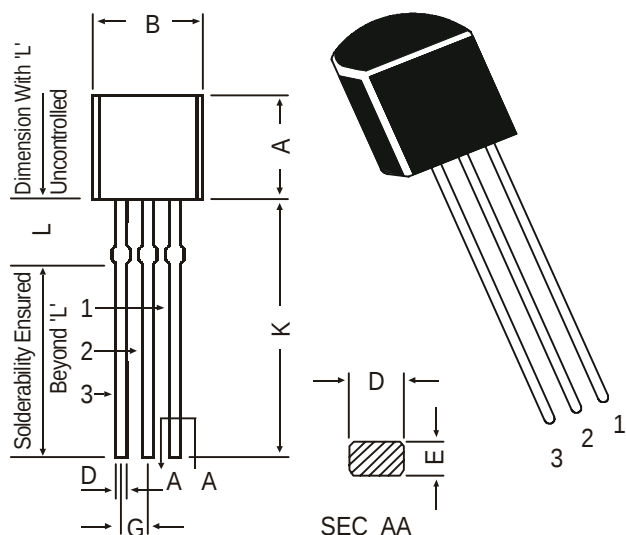
| DESCRIPTION                                      | SYMBOL         | VALUE       | UNIT |
|--------------------------------------------------|----------------|-------------|------|
| Collector Base Voltage                           | $V_{CBO}$      | 30          | V    |
| Collector Emitter Voltage                        | $V_{CEO}$      | 25          | V    |
| Emitter Base Voltage                             | $V_{EBO}$      | 4           | V    |
| Collector Current                                | $I_C$          | 50          | mA   |
| Emitter Current                                  | $I_E$          | - 50        | mA   |
| Collector Power Dissipation                      | $P_C$          | 300         | mW   |
| Operating And Storage Junction Temperature Range | $T_j, T_{stg}$ | -55 to +125 | °C   |

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

| DESCRIPTION                          | SYMBOL         | TEST CONDITION                             | MIN | TYP | MAX | UNIT |
|--------------------------------------|----------------|--------------------------------------------|-----|-----|-----|------|
| Collector Cut off Current            | $I_{CBO}$      | $V_{CB}=30V, I_E = 0$                      | -   | -   | 100 | nA   |
| Emitter Cut off Current              | $I_{EBO}$      | $V_{EB}=3V, I_C=0$                         | -   | -   | 1.0 | μA   |
| Collector Emitter Voltage            | $V_{CEO}$      | $I_C=10mA, I_B=0$                          | 25  | -   | -   | V    |
| DC Current Gain                      | $h_{FE}$       | $V_{CE}=12.5V, I_C=12.5mA$                 | 20  | -   | 200 |      |
| Collector Emitter Saturation Voltage | $V_{CE(sat)}$  | $I_C=15mA, I_B=1.5mA$                      | -   | -   | 0.2 | V    |
| Base Emitter Saturation Voltage      | $V_{BE(sat)}$  | $I_C=15mA, I_B=1.5mA$                      | -   | -   | 1.5 | V    |
| Collector Output Capacitance         | $C_{ob}$       | $V_{CB}=10V, I_E=0, f=1MHz$                | 0.8 | -   | 2.0 | pF   |
| Collector- Base Time Constant        | $C_c, r_{bb'}$ | $V_{CB}=10V, I_E= - 1mA$<br>$f=30MHz$      | -   | -   | 25  | ps   |
| Transition Frequency                 | $f_T$          | $V_{CE}=12.5V, I_C=12.5mA$                 | 300 | -   | -   | MHz  |
| Power Gain                           | $G_{pe}$       | $V_{CC}=12.5V, I_E= - 12.5mA$<br>$f=45MHz$ | 28  | -   | 36  | dB   |

## TO-92 Plastic Package

## TO-92 Transistors on Tape and Ammo Pack



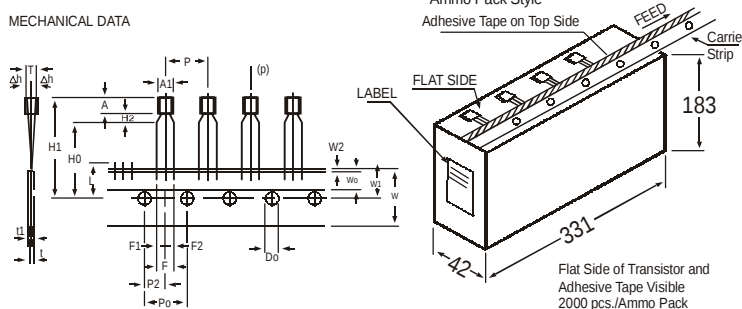
## PIN CONFIGURATION

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.

## MECHANICAL DATA



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 |
| 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 | TO BE MEASURED AT BOTTOM OF CLINCH     |
| FEED HOLE CENTRE TO COMPONENT CENTRE | P2     |               | 6.35  |      | ±0.4 |                                        |
| DISTANCE BETWEEN OUTER LEADS         | F      |               | 5.08  |      | +0.6 | AT TOP OF BODY                         |
| COMPONENT ALIGNMENT                  | Δh     |               | 0     | 1    | -0.2 |                                        |
| TAPE WIDTH                           | W      |               | 18    |      | ±0.5 |                                        |
| HOLD-DOWN TAPE WIDTH                 | Wo     |               | 6     |      | ±0.2 |                                        |
| HOLE POSITION                        | W1     |               | 9     |      | +0.7 | ±1 0.3 - 0.6                           |
|                                      |        |               |       |      | -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   |      |      |                                        |
| 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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**Continental Device India Limited**

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

Telephone + 91-11-2579 6150, 5141 1112 Fax + 91-11-2579 5290, 5141 1119

email@cdil.com www.cdilsemi.com