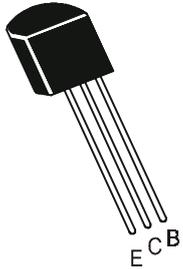


PNP SILICON PLANAR EPITAXIAL TRANSISTOR

CSA966



**TO-92
Plastic Package**

Complementary CSC2236

Audio Power Amplifier Applications

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

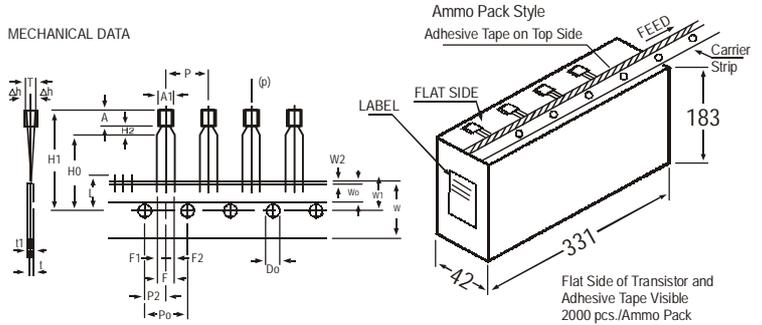
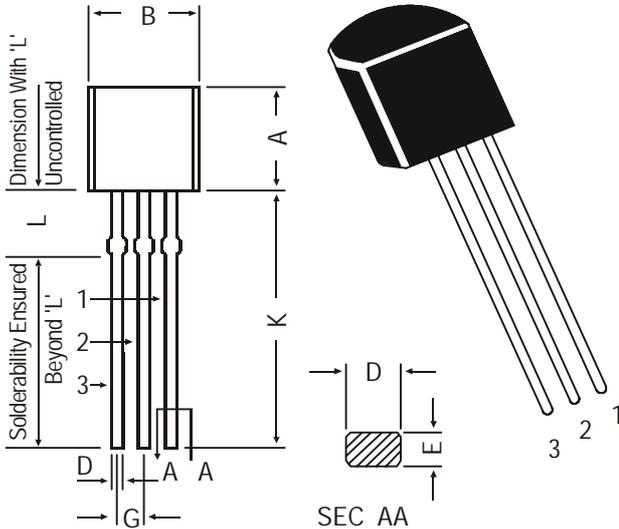
| DESCRIPTION | SYMBOL | VALUE | UNIT |
|--------------------------------------------------|----------------|-------------|------|
| Collector Emitter Voltage | V_{CEO} | 30 | V |
| Collector Base Voltage | V_{CBO} | 30 | V |
| Emitter Base Voltage | V_{EBO} | 5 | V |
| Collector Current | I_C | 1.5 | A |
| Emitter Current | I_E | 1.5 | A |
| Collector Power Dissipation | P_C | 900 | 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 Cut off Current | I_{CBO} | $V_{CB}=30V, I_E = 0$ | - | | 100 | nA |
| Emitter Cut off Current | I_{EBO} | $V_{EB}=5V, I_C = 0$ | - | | 100 | nA |
| Collector Emitter Voltage | BV_{CEO} | $I_C=10mA, I_B=0$ | 30 | | - | V |
| Emitter Base Voltage | V_{EBO} | $I_E=1mA, I_C=0$ | 5 | | - | V |
| DC Current Gain | h_{FE}^* | $V_{CE}=2V, I_C=500mA$ | 100 | | 320 | |
| Collector Emitter Saturation Voltage | $V_{CE(sat)}$ | $I_C=1.5A, I_B=0.03A$ | - | | 2.0 | V |
| Base Emitter Voltage | V_{BE} | $V_{CE}=2V, I_C=500mA$ | - | | 1.0 | V |
| DYNAMIC CHARACTERISTICS | | | | | | |
| Transition Frequency | f_T | $I_C=500mA, V_{CE}=2V$ | - | 120 | - | MHz |
| Collector Output Capacitance | C_{ob} | $I_E=0, V_{CB}=10V, f=1MHz$ | - | | 30 | pF |
| Classification | | | O | Y | | |
| h_{FE}^* | | | 100 - 200 | 160 - 320 | | |

TO-92 Plastic Package

TO-92 Transistors on Tape and Ammo Pack



All dimensions in mm unless specified otherwise

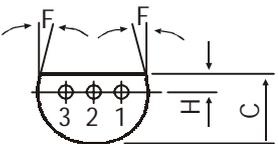
| ITEM | SYMBOL | SPECIFICATION | | | REMARKS |
|--------------------------------------|--------|---------------|------|-------|----------------|
| | | MIN. | NOM. | MAX. | |
| BODY WIDTH | A1 | 4.0 | | 4.8 | |
| BODY HEIGHT | A | 4.8 | | 5.2 | |
| BODY THICKNESS | T | 3.9 | | 4.2 | |
| PITCH OF COMPONENT | 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 | W0 | | 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.

| 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 |

Disclaimer

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