

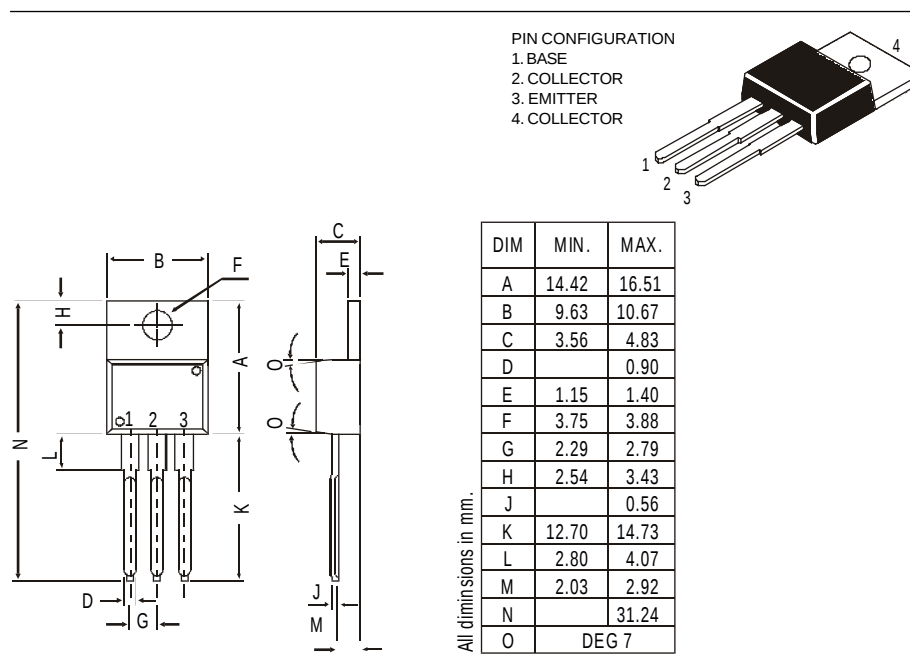
## TO-220 Plastic Package

## CSA968, CSA968A, CSA968B

### CSA968, 968A, 968B PNP PLASTIC POWER TRANSISTORS

Complementary CSC2238, 2238A, 2238B

Power Amplifier Applications and Driver Stage Amplifier Applications



### ABSOLUTE MAXIMUM RATINGS

Collector-base voltage (open emitter)  
 Collector-emitter voltage (open base)  
 Collector current  
 Total power dissipation up to  $T_C = 25^\circ\text{C}$   
 Junction temperature  
 Collector-emitter saturation voltage  
 $I_C = 500 \text{ mA}$ ;  $I_B = 50 \text{ mA}$   
 D.C. current gain  
 $I_C = 100 \text{ mA}$ ;  $V_{CE} = 5 \text{ V}$

|             |      | 968 968A 968B |     |     |                  |
|-------------|------|---------------|-----|-----|------------------|
| $V_{CBO}$   | max. | 160           | 180 | 200 | V                |
| $V_{CEO}$   | max. | 160           | 180 | 200 | V                |
| $I_C$       | max. |               | 1.5 |     | A                |
| $P_{tot}$   | max. |               | 25  |     | W                |
| $T_j$       | max. |               | 150 |     | $^\circ\text{C}$ |
| $V_{CEsat}$ | max. |               | 1.5 |     | V                |
| $h_{FE}$    | min  |               | 70  |     |                  |
|             | max. |               | 240 |     |                  |

### RATINGS (at $T_A = 25^\circ\text{C}$ unless otherwise specified)

Limiting values

|                                       |           |      |     |     |     |   |
|---------------------------------------|-----------|------|-----|-----|-----|---|
| Collector-base voltage (open emitter) | $V_{CBO}$ | max. | 160 | 180 | 200 | V |
| Collector-emitter voltage (open base) | $V_{CEO}$ | max. | 160 | 180 | 200 | V |
| Emitter-base voltage (open collector) | $V_{EBO}$ | max. |     | 5.0 |     | V |

## CSA968, CSA968A, CSA968B

|                                                        |           |      |             |                  |
|--------------------------------------------------------|-----------|------|-------------|------------------|
| Collector current                                      | $I_C$     | max. | 1.5         | A                |
| Emitter current                                        | $I_E$     | max. | 1.5         | A                |
| Total power dissipation up to $T_C = 25^\circ\text{C}$ | $P_{tot}$ | max. | 25          | W                |
| Junction temperature                                   | $T_j$     | max. | 150         | $^\circ\text{C}$ |
| Storage temperature                                    | $T_{stg}$ |      | -65 to +150 | $^\circ\text{C}$ |

### CHARACTERISTICS

$T_{amb} = 25^\circ\text{C}$  unless otherwise specified

|                                                                             |              |      | 968 | 968A | 968B |               |
|-----------------------------------------------------------------------------|--------------|------|-----|------|------|---------------|
| Collector cutoff current<br>$I_E = 0; V_{CB} = 160\text{ V}$                | $I_{CBO}$    | max. | 1.0 |      |      | $\mu\text{A}$ |
| Emitter cut-off current<br>$I_C = 0; V_{EB} = 5\text{ V}$                   | $I_{EBO}$    | max. | 1.0 |      |      | $\mu\text{A}$ |
| Breakdown voltages<br>$I_C = 10\text{ mA}; I_B = 0$                         | $V_{CEO}$    | min. | 160 | 180  | 200  | V             |
| $I_C = 1\text{ mA}; I_E = 0$                                                | $V_{CBO}$    | min. | 160 | 180  | 200  | V             |
| $I_E = 1\text{ mA}; I_C = 0$                                                | $V_{EBO}$    | min. | 5.0 |      |      | V             |
| Saturation voltage<br>$I_C = 500\text{ mA}; I_B = 50\text{ mA}$             | $V_{CEsat}$  | max. | 1.5 |      |      | V             |
| Base emitter on voltage<br>$I_C = 500\text{ mA}; V_{CE} = 5\text{ V}$       | $V_{BE(on)}$ | max. | 1.0 |      |      | V             |
| D.C. current gain<br>$I_C = 100\text{ mA}; V_{CE} = 5\text{ V}^{**}$        | $h_{FE}$     | min. | 70  |      |      |               |
|                                                                             |              | max. | 240 |      |      |               |
| Output capacitance at $f = 1\text{ MHz}$<br>$I_E = 0; V_{CB} = 10\text{ V}$ | $C_o$        | typ. | 30  |      |      | pF            |
| Transition frequency<br>$I_C = 100\text{ mA}; V_{CE} = 10\text{ V}$         | $f_T$        | typ. | 100 |      |      | MHz           |

**\*\*  $h_{FE}$  classification: O: 70-140 Y: 120-240**

## Customer Notes

### Disclaimer

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