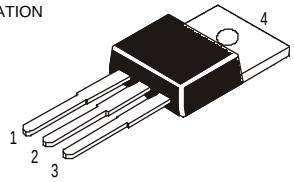
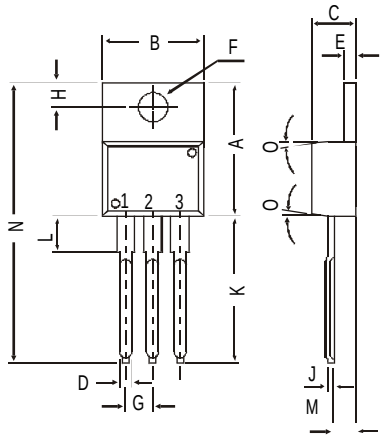
**TO-220 Plastic Package** **CSC2233**

# *CSC2233 NPN PLASTIC POWER TRANSISTOR*

*TV Horizontal Deflection Output Applications*

PIN CONFIGURATION
1. BASE
2. COLLECTOR
3. EMITTER
4. COLLECTOR




All diminsions in mm.

| DIM | MIN. | MAX. |
|---|---|---|
| A | 14.42 | 16.51 |
| B | 9.63 | 10.67 |
| C | 3.56 | 4.83 |
| D | | 0.90 |
| E | 1.15 | 1.40 |
| F | 3.75 | 3.88 |
| G | 2.29 | 2.79 |
| H | 2.54 | 3.43 |
| J | | 0.56 |
| K | 12.70 | 14.73 |
| L | 2.80 | 4.07 |
| M | 2.03 | 2.92 |
| N | | 31.24 |
| O | DEG 7 | |

## *ABSOLUTE MAXIMUM RATINGS*

| | | | |
|---|---|---|---|
| *Collector-base voltage (open emitter)* | $V_{CBO}$ | *max.* | *200 V* |
| *Collector-emitter voltage (open base)* | $V_{CEO}$ | *max.* | *60 V* |
| *Collector current* | $I_C$ | *max.* | *4 A* |
| *Total power dissipation up to $T_C$ = 25°C* | $P_{tot}$ | *max.* | *40 W* |
| *Junction temperature* | $T_j$ | *max.* | *150 °C* |
| *Collector-emitter saturation voltage* | | | |
| *$I_C$ = 4 A; $I_B$ = 0.4 A* | $V_{CEsat}$ | *max.* | *1.0 V* |
| *D.C. current gain* | | | |
| *$I_C$ = 1 A; $V_{CE}$ = 5 V* | $h_{FE}$ | *min.* | *30* |
| | | *max.* | *150* |

## ***RATINGS*** *(at $T_A$=25°C unless otherwise specified)*

| | | | |
|---|---|---|---|
| *Limiting values* | | | |
| *Collector-base voltage (open emitter)* | $V_{CBO}$ | *max.* | *200 V* |
| *Collector-emitter voltage (open base)* | $V_{CEO}$ | *max.* | *60 V* |
| *Emitter-base voltage (open collector)* | $V_{EBO}$ | *max.* | *5.0 V* |
| *Collector current* | $I_C$ | *max.* | *4 A* |
| *Collector current (Peak value)* | $I_{CP}$ | *max.* | *10 A* |

| | | | |
|---|---|---|---|
| *Base current* | $I_B$ | *max.* | *1.0 A* |
| *Total power dissipation up to $T_A$ = 25°C* | $P_{tot}$ | *max.* | *1.5 W* |
| *Total power dissipation up to $T_C$ = 25°C* | $P_{tot}$ | *max.* | *40 W* |
| *Junction temperature* | $T_j$ | *max.* | *150 °C* |
| *Storage temperature* | $T_{stg}$ | | *–65 to +150 °C* |

***CHARACTERISTICS***

*$T_{amb}$ = 25°C unless otherwise specified*

| | | | |
|---|---|---|---|
| *Collector cutoff current* | | | |
| *$I_E$ = 0; $V_{CB}$ = 170 V* | $I_{CBO}$ | *max.* | *10 µA* |
| *Emitter cut-off current* | | | |
| *$I_C$ = 0; $V_{EB}$ = 5 V* | $I_{EBO}$ | *max.* | *10 µA* |
| *Breakdown voltages* | | | |
| *$I_C$ = 20 mA; $I_B$ = 0* | $V_{CEO}$ | *min.* | *60 V* |
| *$I_C$ = 1 mA; $I_E$ = 0* | $V_{CBO}$ | *min.* | *200 V* |
| *$I_E$ = 1 mA; $I_C$ = 0* | $V_{EBO}$ | *min.* | *5.0 V* |
| *Saturation voltages* | | | |
| *$I_C$ = 4 A; $I_B$ = 0.4 A* | $V_{CEsat}$ | *max.* | *1.0 V* |
| | $V_{BEsat}$ | *max.* | *1.5 V* |
| *D.C. current gain* | | | |
| *$I_C$ = 1 A; $V_{CE}$ = 5 V* | $h_{FE}$ | *min.* | *30* |
| | | *max.* | *150* |
| *$I_C$ = 4 A; $V_{CE}$ = 5 V* | $h_{FE}$ | *min.* | *20* |
| *Transition frequency* | | | |
| *$I_C$ = 0.5 A; $V_{CE}$ = 5 V* | $f_T$ | *typ.* | *8 MHz* |

## Customer Notes

## 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