

2SC5993

Silicon NPN epitaxial planar type

For power amplification

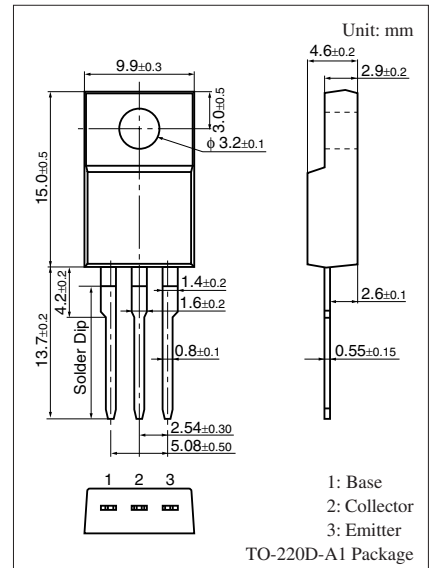
For TV VM circuit

■ Features

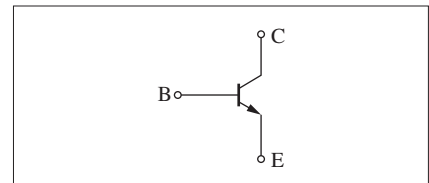
- Satisfactory linearity of forward current transfer ratio h_{FE}
- High transition frequency (f_T)
- Full-pack package which can be installed to the heat sink with one screw.

■ Absolute Maximum Ratings $T_C = 25^\circ\text{C}$

| Parameter | Symbol | Rating | Unit |
|---------------------------------------|-----------|--------------------------|------------------|
| Collector-base voltage (Emitter open) | V_{CBO} | 180 | V |
| Collector-emitter voltage (Base open) | V_{CEO} | 180 | V |
| Emitter-base voltage (Collector open) | V_{EBO} | 6 | V |
| Collector current | I_C | 1.5 | A |
| Peak collector current | I_{CP} | 3 | A |
| Collector power dissipation | P_C | 20 | W |
| | | $T_a = 25^\circ\text{C}$ | |
| Junction temperature | T_j | 150 | $^\circ\text{C}$ |
| Storage temperature | T_{stg} | -55 to +150 | $^\circ\text{C}$ |



Internal Connection



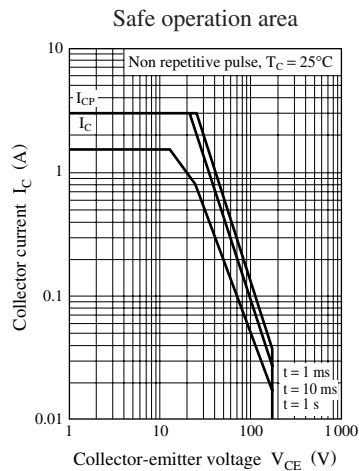
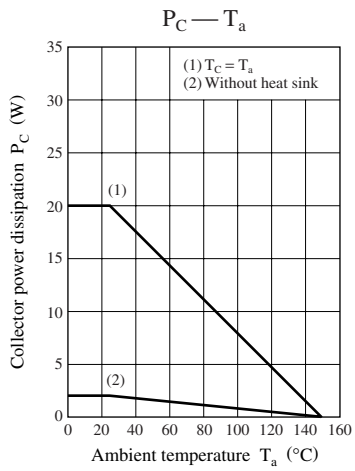
■ Electrical Characteristics $T_C = 25^\circ\text{C} \pm 3^\circ\text{C}$

| Parameter | Symbol | Conditions | Min | Typ | Max | Unit |
|--|---------------|---|-----|-----|-----|---------------|
| Collector-emitter voltage (Base open) | V_{CEO} | $I_C = 10\text{ mA}, I_B = 0$ | 180 | | | V |
| Collector-base cutoff current (Emitter open) | I_{CBO} | $V_{CB} = 180\text{ V}, I_E = 0$ | | | 100 | μA |
| Emitter-base cutoff current (Collector open) | I_{EBO} | $V_{EB} = 6\text{ V}, I_C = 0$ | | | 100 | μA |
| Forward current transfer ratio * | h_{FE} | $V_{CE} = 5\text{ V}, I_C = 0.1\text{ A}$ | 60 | | 240 | — |
| Collector-emitter saturation voltage | $V_{CE(sat)}$ | $I_C = 1\text{ A}, I_B = 0.1\text{ A}$ | | | 0.5 | V |
| Transition frequency | f_T | $V_{CE} = 10\text{ V}, I_C = 0.2\text{ A}, f = 10\text{ MHz}$ | | 130 | | MHz |
| Collector output capacitance (Common base, input open circuited) | C_{ob} | $V_{CB} = 10\text{ V}, I_E = 0, f = 1\text{ MHz}$ | | 10 | | pF |
| Turn-on time | t_{on} | $I_C = 0.4\text{ A}, \text{Resistance loaded}$ | | 0.1 | | μs |
| Storage time | t_{stg} | $I_{B1} = 0.04\text{ A}, I_{B2} = -0.04\text{ A}$ | | 1.5 | | μs |
| Fall time | t_f | $V_{CC} = 100\text{ V}$ | | 0.1 | | μs |

Note) 1. Measuring methods are based on JAPANESE INDUSTRIAL STANDARD JIS C 7030 measuring methods for transistors.

2. *: Rank classification

| Rank | Q | P |
|----------|-----------|------------|
| h_{FE} | 60 to 140 | 120 to 240 |



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