



DC COMPONENTS CO., LTD.

DISCRETE SEMICONDUCTORS

MPSH10

TECHNICAL SPECIFICATIONS OF NPN EPITAXIAL PLANAR TRANSISTOR

Description

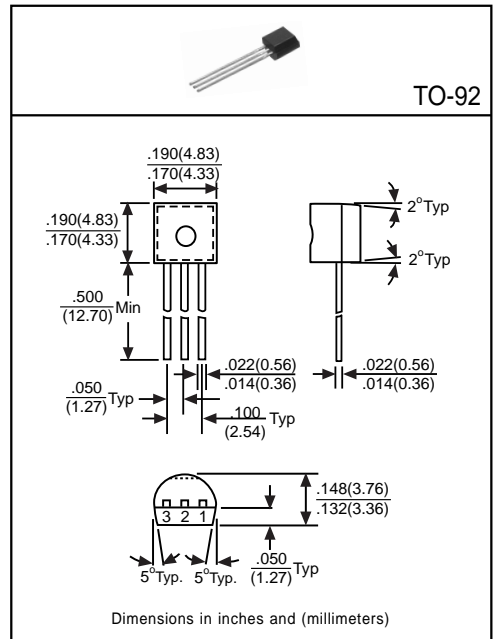
Designed for use in VHF & UHF oscillators and VHF mixer in tuner of a TV receiver.

Pinning

- 1 = Base
- 2 = Emitter
- 3 = Collector

Absolute Maximum Ratings (TA=25°C)

| Characteristic            | Symbol           | Rating      | Unit |
|---------------------------|------------------|-------------|------|
| Collector-Base Voltage    | V <sub>CB0</sub> | 20          | V    |
| Collector-Emitter Voltage | V <sub>CEO</sub> | 15          | V    |
| Emitter-Base Voltage      | V <sub>EBO</sub> | 3           | V    |
| Collector Current         | I <sub>C</sub>   | 50          | mA   |
| Total Power Dissipation   | P <sub>D</sub>   | 625         | mW   |
| Junction Temperature      | T <sub>J</sub>   | +150        | °C   |
| Storage Temperature       | T <sub>STG</sub> | -55 to +150 | °C   |



Electrical Characteristics

(Ratings at 25°C ambient temperature unless otherwise specified)

| Characteristic                                      | Symbol               | Min | Typ | Max  | Unit | Test Conditions                                     |
|---|----------------------|-----|-----|------|------|---|
| Collector-Base Breakdown Voltage                    | BV <sub>CB0</sub>    | 20  | -   | -    | V    | I <sub>C</sub> =100μA                               |
| Collector-Emitter Breakdown Voltage                 | BV <sub>CEO</sub>    | 15  | -   | -    | V    | I <sub>C</sub> =1mA                                 |
| Emitter-Base Breakdown Voltage                      | BV <sub>EBO</sub>    | 3   | -   | -    | V    | I <sub>E</sub> =10μA                                |
| Collector Cutoff Current                            | I <sub>CBO</sub>     | -   | -   | 0.1  | μA   | V <sub>CB</sub> =20V                                |
| Emitter Cutoff Current                              | I <sub>EBO</sub>     | -   | -   | 0.1  | μA   | V <sub>EB</sub> =2V                                 |
| Collector-Emitter Saturation Voltage <sup>(1)</sup> | V <sub>CE(sat)</sub> | -   | -   | 0.5  | V    | I <sub>C</sub> =4mA, I <sub>B</sub> =0.4mA          |
| Base-Emitter On Voltage                             | V <sub>BE(on)</sub>  | -   | -   | 0.95 | V    | I <sub>C</sub> =4mA, V <sub>CE</sub> =10V           |
| DC Current Gain <sup>(1)</sup>                      | h <sub>FE</sub>      | 60  | -   | -    | -    | I <sub>C</sub> =4mA, V <sub>CE</sub> =10V           |
| Transition Frequency                                | f <sub>T</sub>       | 650 | -   | -    | MHz  | I <sub>C</sub> =4mA, V <sub>CB</sub> =10V, f=100MHz |
| Output Capacitance                                  | C <sub>ob</sub>      | -   | -   | 0.7  | pF   | V <sub>CB</sub> =10V, f=1MHz                        |

(1) Pulse Test: Pulse Width ≤ 380μs, Duty Cycle ≤ 2%