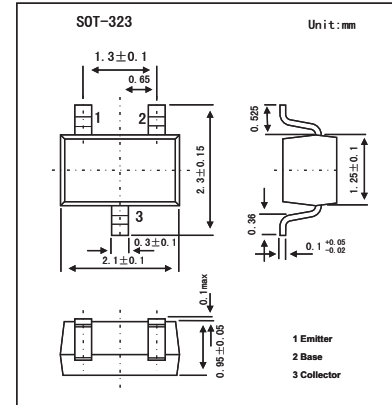


## NPN High Voltage Amplifier MMSTA42

### Features

- High breakdown voltage
- Low collector-emitter saturation voltage
- Complementary to MMSTA92



### Absolute Maximum Ratings $T_a = 25^\circ\text{C}$

| Parameter                     | Symbol    | Rating     | Unit             |
|-------------------------------|-----------|------------|------------------|
| Collector-Base Voltage        | $V_{CB0}$ | 300        | V                |
| Collector-Emitter Voltage     | $V_{CEO}$ | 300        | V                |
| Emitter-Base Voltage          | $V_{EB0}$ | 5          | V                |
| Collector Current -Continuous | $I_C$     | 300        | mA               |
| Collector Power Dissipation   | $P_C$     | 200        | mW               |
| Junction Temperature          | $T_j$     | 150        | $^\circ\text{C}$ |
| Storage Temperature           | $T_{stg}$ | -55 to 150 | $^\circ\text{C}$ |

### Electrical Characteristics $T_a = 25^\circ\text{C}$

| Parameter                              | Symbol        | Test conditions                                                        | Min | Typ | Max  | Unit          |
|----------------------------------------|---------------|------------------------------------------------------------------------|-----|-----|------|---------------|
| Collector-to-base breakdown voltage    | $V_{(BR)CBO}$ | $I_C = 100\ \mu\text{A}$ , $I_E = 0$                                   | 300 |     |      | V             |
| Collector-to-emitter breakdown voltage | $V_{(BR)CEO}$ | $I_C = 1\ \text{mA}$ , $I_B = 0$                                       | 300 |     |      | V             |
| Emitter-to-base breakdown voltage      | $V_{(BR)EBO}$ | $I_E = 100\ \mu\text{A}$ , $I_C = 0$                                   | 5   |     |      | V             |
| Collector cutoff current               | $I_{CBO}$     | $V_{CB} = 200\ \text{V}$ , $I_E = 0$                                   |     |     | 0.25 | $\mu\text{A}$ |
| Emitter cutoff current                 | $I_{EBO}$     | $V_{EB} = 5\ \text{V}$ , $I_C = 0$                                     |     |     | 0.1  | $\mu\text{A}$ |
| DC current gain                        | $h_{FE}$      | $V_{CE} = 10\ \text{V}$ , $I_C = 1\ \text{mA}$                         | 60  |     |      |               |
|                                        |               | $V_{CE} = 10\ \text{V}$ , $I_C = 10\ \text{mA}$                        | 100 |     | 200  |               |
|                                        |               | $V_{CE} = 10\ \text{V}$ , $I_C = 30\ \text{mA}$                        | 75  |     |      |               |
| Collector-emitter saturation voltage   | $V_{CE(sat)}$ | $I_C = 20\ \text{mA}$ , $I_B = 2\ \text{mA}$                           |     |     | 0.5  | V             |
| Base-emitter saturation voltage        | $V_{BE(sat)}$ | $I_C = 20\ \text{mA}$ , $I_B = 2\ \text{mA}$                           |     |     | 0.9  | V             |
| Output Capacitance                     | $C_{ob}$      | $V_{CB} = 20\ \text{V}$ , $f = 1.0\ \text{MHz}$ , $I_E = 0$            |     |     | 3.0  | pF            |
| Transition frequency                   | $f_T$         | $V_{CE} = 20\ \text{V}$ , $I_C = 10\ \text{mA}$ , $f = 30\ \text{MHz}$ | 50  |     |      | MHz           |

### Marking

|         |     |
|---------|-----|
| Marking | K3M |
|---------|-----|