

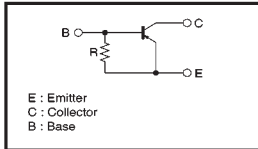
Digital transistors (built-in resistor)

DTB114GK

●Features

- 1) The built-in bias resistors consist of thin-film resistors with complete isolation to allow positive biasing of the input, and parasitic effects are almost completely eliminated.
- 2) Only the on / off conditions need to be set for operation, making device design easy.
- 3) Higher mounting densities can be achieved.

●Circuit schematic



●Electrical characteristics (Ta=25°C)

| Parameter | Symbol | Min. | Typ. | Max. | Unit | Conditions |
|--------------------------------------|---------------|------|------|------|------------|--|
| Collector-base breakdown voltage | BV_{CBO} | -50 | — | — | V | $I_C = -50 \mu A$ |
| Collector-emitter breakdown voltage | BV_{CEO} | -50 | — | — | V | $I_C = -1 mA$ |
| Emitter-base breakdown voltage | BV_{EBO} | -5 | — | — | V | $I_E = -720 \mu A$ |
| Collector cutoff current | I_{CBO} | — | — | -0.5 | μA | $V_{CE} = -30V$ |
| Emitter cutoff current | I_{EBO} | -300 | — | -580 | μA | $V_{EB} = -4V$ |
| Collector-emitter saturation voltage | $V_{CE(sat)}$ | — | — | -0.3 | V | $I_C/I_E = -50mA/-2.5mA$ |
| DC current transfer ratio | h_{FE} | 56 | — | — | — | $I_C = -100mA, V_{CE} = -5V$ |
| Emitter-base resistance | R | 7 | 10 | 13 | k Ω | — |
| Transition frequency | f_T | — | 200 | — | MHz | $V_{CE} = -10V, I_E = 5mA, f = 100MHz$ |

* Transition frequency of the device.

(96-292-B114G)

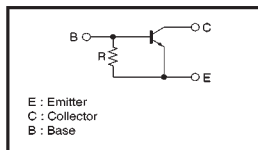
Digital transistors (built-in resistor)

DTD114GK

●Features

- 1) The built-in bias resistors consist of thin-film resistors with complete isolation to allow negative biasing of the input, and parasitic effects are almost completely eliminated.
- 2) Only the on / off conditions need to be set for operation, making device design easy.
- 3) Higher mounting densities can be achieved.

●Circuit schematic



●Electrical characteristics (Ta=25°C)

| Parameter | Symbol | Min. | Typ. | Max. | Unit | Conditions |
|--------------------------------------|---------------|------|------|------|------------|---|
| Collector-base breakdown voltage | BV_{CBO} | 50 | — | — | V | $I_C = 50 \mu A$ |
| Collector-emitter breakdown voltage | BV_{CEO} | 50 | — | — | V | $I_C = 1 mA$ |
| Emitter-base breakdown voltage | BV_{EBO} | 5 | — | — | V | $I_E = 720 \mu A$ |
| Collector cutoff current | I_{CBO} | — | — | 0.5 | μA | $V_{CE} = 50V$ |
| Emitter cutoff current | I_{EBO} | 300 | — | 580 | μA | $V_{EB} = 4V$ |
| Collector-emitter saturation voltage | $V_{CE(sat)}$ | — | — | 0.3 | V | $I_C/I_E = 50mA/2.5mA$ |
| DC current transfer ratio | h_{FE} | 56 | — | — | — | $I_C = 100mA, V_{CE} = 5V$ |
| Emitter-base resistance | R | 7 | 10 | 13 | k Ω | — |
| Transition frequency | f_T | — | 200 | — | MHz | $V_{CE} = 10V, I_E = -50mA, f = 100MHz$ |

* Transition frequency of the device.

(96-360-D114G)

●Absolute maximum ratings (Ta=25°C)

| Parameter | Symbol | Limits | Unit |
|-----------------------------|-----------|----------|------|
| Collector-base voltage | V_{CBO} | -50 | V |
| Collector-emitter voltage | V_{CEO} | -50 | V |
| Emitter-base voltage | V_{EBO} | -5 | V |
| Collector current | I_C | -500 | mA |
| Collector power dissipation | P_C | 200 | mW |
| Junction temperature | T_J | 150 | °C |
| Storage temperature | T_{stg} | -55~+150 | °C |

●Package, marking, and packaging specifications

| | |
|------------------------------|----------|
| Part No. | DTB114GK |
| Package | SMT3 |
| Marking | L14 |
| Packaging code | T146 |
| Basic ordering unit (pieces) | 3000 |

●Absolute maximum ratings (Ta=25°C)

| Parameter | Symbol | Limits | Unit |
|-----------------------------|-----------|----------|------|
| Collector-base voltage | V_{CBO} | 50 | V |
| Collector-emitter voltage | V_{CEO} | 50 | V |
| Emitter-base voltage | V_{EBO} | 5 | V |
| Collector current | I_C | 500 | mA |
| Collector power dissipation | P_C | 200 | mW |
| Junction temperature | T_J | 150 | °C |
| Storage temperature | T_{stg} | -55~+150 | °C |

●Package, marking, and packaging specifications

| | |
|------------------------------|----------|
| Part No. | DTD114GK |
| Package | SMT3 |
| Marking | L24 |
| Packaging code | T146 |
| Basic ordering unit (pieces) | 3000 |