

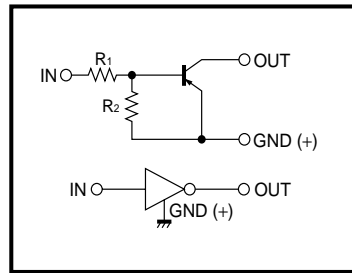
Digital transistors (built-in resistors)

DTA115EM / DTA115EE / DTA115EUA / DTA115EKA / DTA115ESA

●Features

- 1) Built-in bias resistors enable the configuration of an inverter circuit without connecting external input resistors (see equivalent circuit).
- 2) The bias resistors consist of thin-film resistors with complete isolation to allow positive biasing of the input, and parasitic effects are almost completely eliminated.
- 3) Only the on/off conditions need to be set for operation, making device design easy.
- 4) Higher mounting densities can be achieved.

●Equivalent circuit



●Structure

PNP digital transistor (Built-in resistor type)

●External dimensions (Units : mm)

| | |
|---|---|
| <p>DTA115EM</p> <p>ROHM : VMT3</p> <p>Abbreviated symbol : 19</p> | <p>DTA115EE</p> <p>ROHM : EMT3</p> <p>Abbreviated symbol : 19</p> |
| <p>DTA115EUA</p> <p>ROHM : UMT3 EIAJ : SC-70</p> <p>All terminals have same dimensions</p> <p>Abbreviated symbol : 19</p> | <p>DTA115EKA</p> <p>ROHM : SMT3 EIAJ : SC-59</p> <p>All terminals have same dimensions</p> <p>Abbreviated symbol : 19</p> |
| <p>DTA115ESA</p> <p>ROHM : SPT EIAJ : SC-72</p> | |

DTA115EM / DTA115EE / DTA115EUA DTA115EKA / DTA115ESA

Transistors

● Absolute maximum ratings (Ta=25°C)

| Parameter | Symbol | Limits | Unit |
|----------------------|-----------------------|----------|------|
| Supply voltage | V _{CC} | -50 | V |
| Input voltage | V _I | -40~+10 | V |
| Output current | I _O | -20 | mA |
| | I _{C(Max.)} | -100 | |
| Power dissipation | DTA115EM / DTA115EE | 150 | mW |
| | DTA115EUA / DTA115EKA | 200 | |
| | DTA115ESA | 300 | |
| Junction temperature | T _J | 150 | °C |
| Storage temperature | T _{stg} | -55~+150 | °C |

● Electrical characteristics (Ta=25°C)

| Parameter | Symbol | Min. | Typ. | Max. | Unit | Conditions |
|----------------------|--------------------------------|------|------|-------|------|--|
| Input voltage | V _{I(off)} | - | - | -0.5 | V | V _{CC} =-5V, I _O =-100μA |
| | V _{I(on)} | -3 | - | - | | V _O =-0.3V, I _O =-1mA |
| Output voltage | V _{O(on)} | - | -0.1 | -0.3 | V | I _O =-5mA, I _I =-0.25mA |
| Input current | I _I | - | - | -0.15 | mA | V _I =-5V |
| Output current | I _{O(off)} | - | - | -0.5 | μA | V _{CC} =-50V, V _I =0V |
| DC current gain | G _I | 82 | - | - | - | I _O =-5mA, V _O =-5V |
| Input resistance | R _I | 70 | 100 | 130 | kΩ | - |
| Resistance ratio | R ₂ /R ₁ | 0.8 | 1 | 1.2 | - | - |
| Transition frequency | f _T | - | 250 | - | MHz | V _{CE} =10V, I _E =-5mA, f=100MHz * |

*Transition frequency of the device.

● Package, marking, and packaging specifications

| Type | DTA115EM | DTA115EE | DTA115EUA | DTA115EKA | DTA115ESA |
|------------------------------|----------|----------|-----------|-----------|-----------|
| Package | VMT3 | EMT3 | UMT3 | SMT3 | SPT |
| Marking | 19 | 19 | 19 | 19 | - |
| Packaging code | T2L | TL | T106 | T146 | TP |
| Basic ordering unit (pieces) | 8000 | 3000 | 3000 | 3000 | 5000 |