

DTA115E

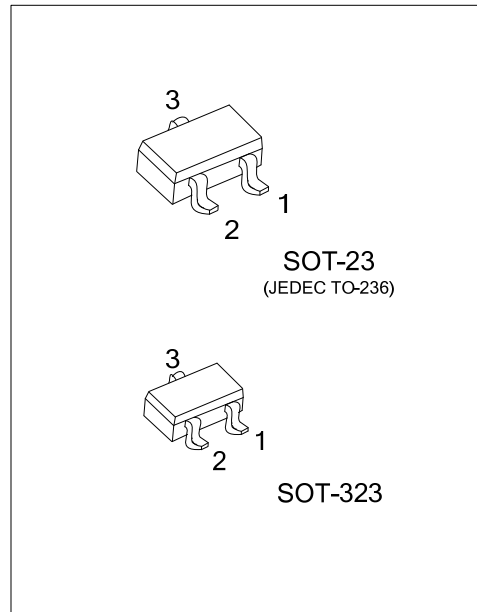
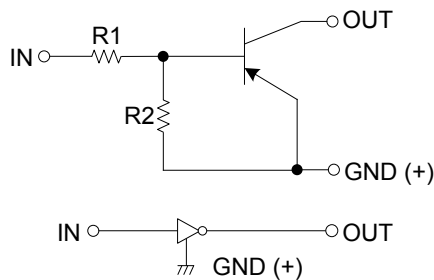
PNP EPITAXIAL SILICON TRANSISTOR

PNP DIGITAL TRANSISTOR (BUILT-IN RESISTORS)

■ FEATURES

- * Built-in bias resistors enable the configuration of an inverter circuit without connecting external input resistors (see the equivalent circuit).
- * The bias resistors consist of thin-film resistors with complete isolation to allow positive biasing of the input. They also have the advantage of almost completely eliminating parasitic effects.
- * Only the on / off conditions need to be set for operation, making device design easy.

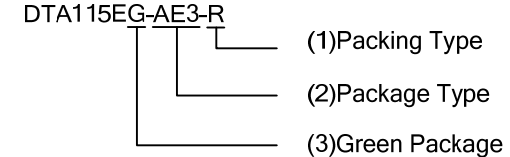
■ EQUIVALENT CIRCUIT



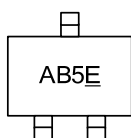
■ ORDERING INFORMATION

| Ordering Number | Package | Pin Assignment | | | Packing |
|-----------------|---------|----------------|---|---|-----------|
| | | 1 | 2 | 3 | |
| DTA115EG-AE3-R | SOT-23 | G | I | O | Tape Reel |
| DTA115EG-AL3-R | SOT-323 | G | I | O | Tape Reel |

Note: Pin Assignment: G: GND I: IN O: OUT

| | |
|---|---|
| <p>DTA115EG-AE3-R</p>  | <p>(1) R: Tape Reel</p> <p>(2) AE3: SOT-23, AL3: SOT-323</p> <p>(3) G: Halogen Free and Lead Free</p> |
|---|---|

■ MARKING



■ ABSOLUTE MAXIMUM RATINGS ($T_A = 25^\circ\text{C}$, unless otherwise specified)

| PARAMETER | SYMBOL | RATINGS | UNIT |
|----------------------|--------------|------------|------------------|
| Supply Voltage | V_{CC} | -50 | V |
| Input Voltage | V_{IN} | -40~+10 | V |
| Output Current | I_{OUT} | -20 | mA |
| | $I_{C(MAX)}$ | -100 | |
| Power Dissipation | P_D | 200 | mW |
| Junction Temperature | T_J | 150 | $^\circ\text{C}$ |
| Storage Temperature | T_{STG} | -40 ~ +150 | $^\circ\text{C}$ |

Note Absolute maximum ratings are those values beyond which the device could be permanently damaged. Absolute maximum ratings are stress ratings only and functional device operation is not implied.

■ ELECTRICAL CHARACTERISTICS ($T_A = 25^\circ\text{C}$, unless otherwise specified)

| PARAMETER | SYMBOL | TEST CONDITIONS | MIN | TYP | MAX | UNIT |
|----------------------|----------------|---|-----|------|-------|---------------|
| Input Voltage | $V_{IN(OFF)}$ | $V_{CC} = -5V, I_{OUT} = -100\mu\text{A}$ | | | -0.5 | V |
| | $V_{IN(ON)}$ | $V_{OUT} = -0.3V, I_{OUT} = -1\text{mA}$ | -3 | | | |
| Output Voltage | $V_{OUT(ON)}$ | $I_{OUT} = -5\text{mA}, I_{IN} = -0.25\text{mA}$ | | -0.1 | -0.3 | V |
| Input Current | I_{IN} | $V_{IN} = -5V$ | | | -0.15 | mA |
| Output Current | $I_{OUT(OFF)}$ | $V_{CC} = -50V, V_{IN} = 0V$ | | | -0.5 | μA |
| DC Current Gain | G_1 | $V_{OUT} = -5V, I_{OUT} = -5\text{mA}$ | 82 | | | |
| Input Resistance | R_1 | | 70 | 100 | 130 | k Ω |
| Resistance Ratio | R_2/R_1 | | 0.8 | 1 | 1.2 | |
| Transition Frequency | f_T | $V_{CE} = -10\text{V}, I_E = 5\text{mA}, f = 100\text{MHz}$ (Note) | | 250 | | MHz |

Note: Transition frequency of the device

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