

SOT-523

Digital Transistor (Built-in Resistors)

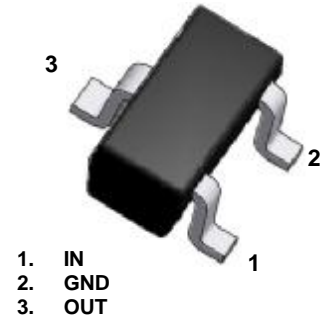
PNP Silicon Surface Mount Transistor

Green Product

Absolute Maximum Ratings ($T_A = 25^\circ\text{C}$ unless otherwise noted)

| Symbol | Parameter | Value | Units |
|-----------|---------------------------|-------------|------------------|
| V_{CB0} | Collector-base Voltage | -50 | V |
| V_{CE0} | Collector-emitter Voltage | -50 | V |
| V_{EB0} | Emitter-base Voltage | -5 | V |
| I_C | Collector Current | -100 | mA |
| P_D | Power Dissipation | 150 | mW |
| T_J | Junction to Ambient | 150 | $^\circ\text{C}$ |
| T_{STG} | Storage Temperature Range | -55 to +150 | $^\circ\text{C}$ |

These ratings are limiting values above which the serviceability of the device may be impaired.

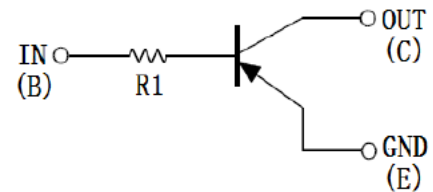


SOT-523 (SC-75A)

FEATURES:

- § Built-in resistors enable the configuration of an inverter circuit without connecting external input resistors.
- § 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.
- § RoHS Compliant
- § Green EMC
- § Matte Tin(Sn) Lead Finish
- § Weight: approx. 0.002g

ELECTRICAL SYMBOL:



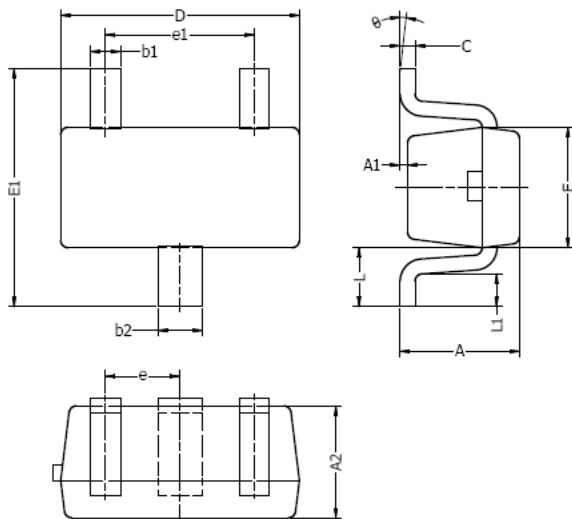
DEVICE MARKING CODE:

| Device Type | Device Marking |
|-------------|----------------|
| DTA143TE | 93 |

Electrical Characteristics ($T_A = 25^\circ\text{C}$ unless otherwise noted)

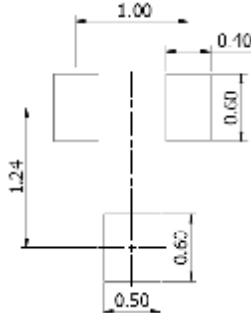
| Parameter | Symbol | Test Condition | Limits | | | Unit |
|--------------------------------------|---------------|--|--------|-----|------|---------------|
| | | | Min | Typ | Max | |
| Collector-base breakdown Voltage | BV_{CBO} | $I_C = -50\mu\text{A}, I_E = 0$ | -50 | | | V |
| Collector-emitter breakdown Voltage | BV_{CEO} | $I_C = -1\text{mA}, I_B = 0$ | -50 | | | V |
| Emitter-base breakdown Voltage | BV_{EBO} | $I_E = -50\mu\text{A}, I_C = 0$ | -5 | | | V |
| Collector cut-off Current | I_{CBO} | $V_{CB} = -50\text{V}, I_E = 0$ | | | -0.5 | μA |
| Emitter cut-off Current | I_{EBO} | $V_{EB} = -4\text{V}, I_C = 0$ | | | -0.5 | μA |
| Collector-emitter saturation voltage | $V_{CE(sat)}$ | $I_C = -5\text{mA}, I_B = 0.25\text{mA}$ | | | -0.3 | V |
| DC current gain | h_{FE} | $V_{CE} = -5\text{V}, I_C = -1\text{mA}$ | 100 | 250 | 600 | |
| Input Resistance | R_1 | | 3.29 | 4.7 | 6.11 | K Ω |
| Transition Frequency | f_T | $V_{CE} = -10\text{V}, I_E = -5\text{mA}$ $f=100\text{MHz}$ | | 250 | | MHz |

SOT-523 Package Outline



| DIM | MILLIMETERS | | INCHES | |
|-----|-------------|------|------------|-------|
| | MIN | MAX | MIN | MAX |
| A | 0.70 | 0.90 | 0.028 | 0.035 |
| A1 | 0.00 | 0.10 | 0.000 | 0.004 |
| A2 | 0.70 | 0.80 | 0.028 | 0.031 |
| b1 | 0.15 | 0.25 | 0.006 | 0.010 |
| b2 | 0.25 | 0.35 | 0.010 | 0.014 |
| c | 0.10 | 0.20 | 0.004 | 0.008 |
| D | 1.50 | 1.70 | 0.059 | 0.067 |
| E | 0.70 | 0.90 | 0.028 | 0.035 |
| E1 | 1.45 | 1.75 | 0.057 | 0.069 |
| e | 0.50 TYP. | | 0.020 TYP. | |
| e1 | 0.90 | 1.10 | 0.035 | 0.043 |
| L | 0.40 REF. | | 0.016 REF. | |
| L1 | 0.10 | 0.30 | 0.004 | 0.012 |
| θ | 0° | 8° | 0° | 8° |

Typical Soldering Pattern:



NOTES:

1. Above package outline conforms to JEITA EAIJ ED-7500A SC-75A.
2. Dimensions are exclusive of Burrs, Mold Flash & Tie Bar extrusions.