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SEMICONDUCTOR



ESD



TVS



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GDT



PLED

DTA114EE(MS)

Product specification

Digital Transistor (Built-in Resistors)

PNP Silicon Surface Mount Transistor

FEATURES

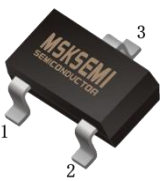
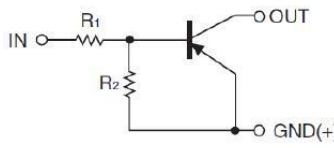
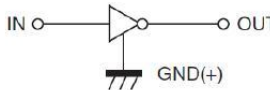

- Built-in resistors enable the configuration of a inverter circuit without connecting external input resistors.
- The bias resistors consist of thin-film resistors with complete isolation to allow positive biasing of the input. They also have the advantage of almost completely eliminating parasitic 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

Absolute Maximum Ratings (T_A = 25°C unless otherwise noted)

| Symbol | Parameter | Value | Units |
|------------------|---------------------------|-------------|-------|
| V _{CC} | Supply Voltage | -50 | V |
| V _{IN} | Input Voltage | -40 ~ +10 | V |
| I _O | Output Current | -50 | mA |
| I _{CM} | Peak Collector Current | -100 | mA |
| P _D | Power Dissipation | 150 | mW |
| T _J | Junction to Ambient | 150 | °C |
| T _{STG} | Storage Temperature Range | -55 to +150 | °C |

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

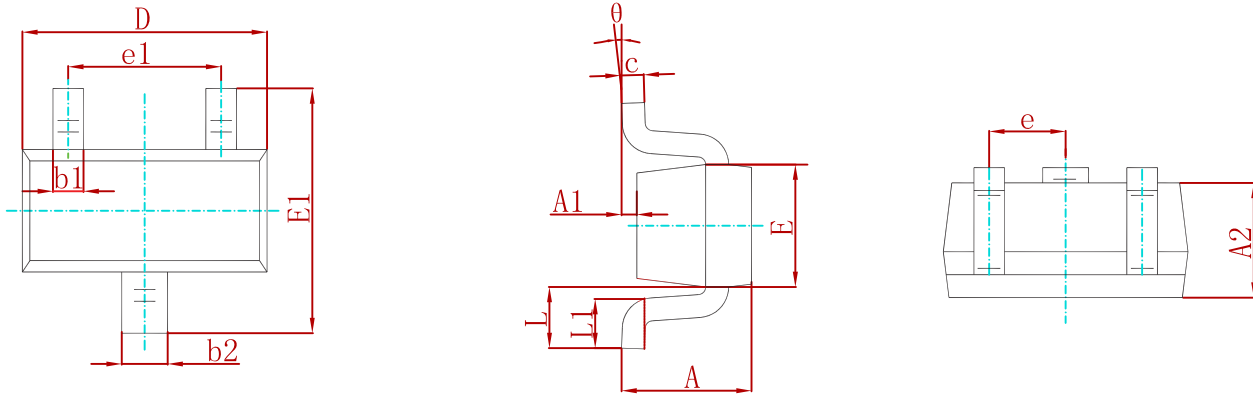
Reference News

| Pin Configuration | ELECTRICAL SYMBOL | Marking |
|---|---|---|
|  <p>1.IN 2.GND 3.OUT</p> |   |  |
| SOT-523 | | |

Electrical Characteristics ($T_A = 25.0^\circ\text{C}$ unless otherwise noted)

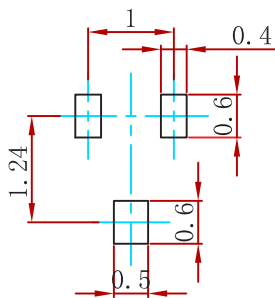
| Parameter | Symbol | Test Condition | Limits | | | Unit |
|----------------------|---------------------|---|--------|-----|-------|------------------|
| | | | Min | Typ | Max | |
| Input Voltage | $V_{I(\text{off})}$ | $V_{CC} = -5\text{V}, I_O = -100\mu\text{A}$ | -0.5 | | | V |
| | $V_{I(\text{on})}$ | $V_O = -0.3\text{V}, I_O = -10\text{mA}$ | | | -3 | V |
| Output Voltage | $V_{O(\text{on})}$ | $I_O / I_I = -10\text{mA} / -0.5\text{mA}$ | | | -0.3 | V |
| Input Current | I_I | $V_I = -5\text{V}$ | | | -0.88 | mA |
| Output Current | $I_{O(\text{off})}$ | $V_{CC} = -50\text{V}, V_I = 0$ | | | -0.5 | μA |
| DC Current Gain | G_I | $V_O = -5\text{V}, I_O = -5\text{mA}$ | 30 | | | |
| Input Resistance | R_I | | 7 | 10 | 13 | $\text{K}\Omega$ |
| Resistance Ratio | R_2 / R_1 | | 0.8 | 1 | 1.2 | |
| Transition Frequency | f_T | $V_O = -10\text{V}, I_O = -5\text{mA}$ $f = 100\text{MHz}$ | | 250 | | MHz |

PACKAGE MECHANICAL DATA



| Symbol | Dimensions In Millimeters | | Dimensions In Inches | |
|--------|---------------------------|-------|----------------------|-------|
| | Min. | Max. | Min. | Max. |
| A | 0.700 | 0.900 | 0.028 | 0.035 |
| A1 | 0.000 | 0.100 | 0.000 | 0.004 |
| A2 | 0.700 | 0.800 | 0.028 | 0.031 |
| b1 | 0.150 | 0.250 | 0.006 | 0.010 |
| b2 | 0.250 | 0.350 | 0.010 | 0.014 |
| c | 0.100 | 0.200 | 0.004 | 0.008 |
| D | 1.500 | 1.700 | 0.059 | 0.067 |
| E | 0.700 | 0.900 | 0.028 | 0.035 |
| E1 | 1.450 | 1.750 | 0.057 | 0.069 |
| e | 0.500 TYP. | | 0.020 TYP. | |
| e1 | 0.900 | 1.100 | 0.035 | 0.043 |
| L | 0.400 REF. | | 0.016 REF. | |
| L1 | 0.260 | 0.460 | 0.010 | 0.018 |
| theta | 0° | 8° | 0° | 8° |

Suggested Pad Layout



- Note:
1. Controlling dimension: in millimeters.
 2. General tolerance: $\pm 0.05\text{mm}$.
 3. The pad layout is for reference purposes only.

REEL SPECIFICATION

| P/N | PKG | QTY |
|--------------|---------|------|
| DTA114EE(MS) | SOT-523 | 3000 |

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