





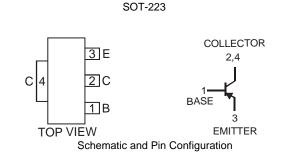
LOW V_{CE(SAT)} PNP SURFACE MOUNT TRANSISTOR

Features

- Epitaxial Planar Die Construction
- Ideally Suited for Automated Assembly Processes
- Ideal for Medium Power Switching or Amplification Applications
- Lead Free By Design/RoHS Compliant (Note 1)
- "Green" Device (Note 2)

Mechanical Data

- Case: SOT-223
- Case Material: Molded Plastic, "Green" Molding Compound. UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020C
- Terminals: Finish Matte Tin annealed over Copper leadframe (Lead Free Plating). Solderable per MIL-STD-202, Method 208
- Marking Information: See Page 4
- Ordering Information: See Page 4
- Weight: 0.115 grams (approximate)



Maximum Ratings $@T_A = 25^{\circ}C$ unless otherwise specified

| Characteristic | Symbol | Value | Unit |
|------------------------------|------------------|-------|------|
| Collector-Base Voltage | V _{CBO} | -180 | V |
| Collector-Emitter Voltage | V _{CEO} | -140 | V |
| Emitter-Base Voltage | V _{EBO} | -6 | V |
| Continuous Collector Current | Ι _C | -4 | А |
| Peak Pulse Current | I _{CM} | -10 | А |

Thermal Characteristics

| Characteristic | Symbol | Value | Unit |
|--|-----------------------------------|-------------|------|
| Power Dissipation (Note 3) @ $T_A = 25^{\circ}C$ | PD | 1 | W |
| Thermal Resistance, Junction to Ambient Air (Note 3) @ $T_A = 25^{\circ}C$ | $R_{\theta JA}$ | 125 | °C/W |
| Operating and Storage Temperature Range | T _j , T _{STG} | -55 to +150 | °C |

Notes: 1. No purposefully added lead.

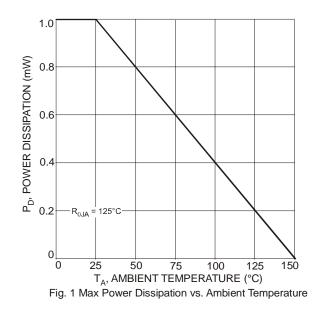
2. Diodes Inc.'s "Green" policy can be found on our website at http://www.diodes.com/products/lead_free/index.php.

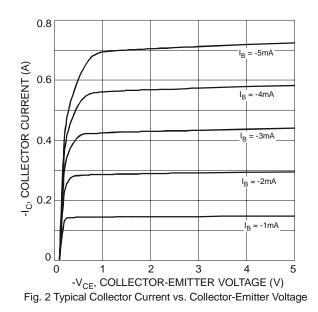
3. Device mounted on FR-4 PCB; pad layout as shown on page 4 or in Diodes Inc. suggested pad layout document AP02001, which can be found on our website at http://www.diodes.com/datasheets/ap02001.pdf.



| Characteristic | Symbol | Min | Тур | Max | Unit | Test Condition |
|--------------------------------------|-------------------------------------|------------------|-------------------|--------------|----------|---|
| OFF CHARACTERISTICS (Note 4) | | | | | | |
| Collector-Base Breakdown Voltage | V _{(BR)CBO} | -180 | _ | _ | V | $I_{C} = -100 \mu A, I_{E} = 0$ |
| Collector-Emitter Breakdown Voltage | V _{(BR)CEO} | -140 | | _ | V | $I_{\rm C} = -10 {\rm mA}, I_{\rm B} = 0$ |
| Emitter-Base Breakdown Voltage | V _{(BR)EBO} | -6 | _ | _ | V | $I_E = -100 \mu A, I_C = 0$ |
| Collector Cutoff Current | I _{CBO} | _ | — | -50 -1 | nA μA | |
| Emitter Cutoff Current | I _{EBO} | _ | _ | -10 | nA | $V_{EB} = -6V, I_{C} = 0$ |
| ON CHARACTERISTICS (Note 4) | | | | | | |
| Collector-Emitter Saturation Voltage | V _{CE(SAT)} | _ | | -60 -120 | mV | $I_{C} = -100$ mA, $I_{B} = -5$ mA $I_{C} = -500$ mA, $I_{B} = -50$ mA |
| | | _ | | -150 -370 | IIIV | $I_{C} = -1A, I_{B} = -100mA$ $I_{C} = -3A, I_{B} = -300mA$ |
| Base-Emitter Saturation Voltage | V _{BE(SAT)} | _ | | -1110 | mV | $I_{C} = -3A, I_{B} = -300mA$ |
| Base-Emitter Turn-On Voltage | V _{BE(ON)} | _ | | -950 | mV | $I_{C} = -3A, V_{CE} = -5V$ |
| DC Current Gain | h _{FE} | 100 100 75 | — — — 10 | 300 — | _ | $I_{C} = -10mA, V_{CE} = -5V$ $I_{C} = -1A, V_{CE} = -5V$ $I_{C} = -3A, V_{CE} = -5V$ $I_{C} = -10A, V_{CF} = -5V$ |
| SMALL SIGNAL CHARACTERISTICS | | | 10 | | | $1_{\rm C} = -10$ $, v_{\rm CE} = -5$ v |
| Current Gain-Bandwidth Product | f _T | _ | 150 | _ | MHz | $I_{C} = -100 \text{mA}, V_{CE} = -10 \text{V}, f = 100 \text{MHz}$ |
| Output Capacitance | C _{obo} | _ | 40 | _ | pF | $V_{CB} = -20V, f = 1MHz$ |
| SWITCHING CHARACTERISTICS | | | | | | |
| Switching Times | t _{on} t _{off} | _ | 85 430 | | ns | $I_{C} = -1A, I_{B1} = -100mA$ $I_{B2} = 100mA, V_{CC} = -50V$ |

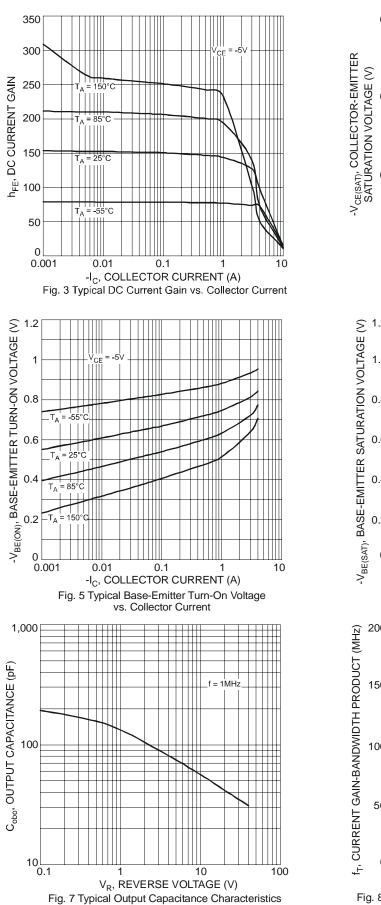
Notes: 4. Measured under pulsed conditions. Pulse width = 300μ s. Duty cycle $\leq 2\%$.







NEW PRODUCT



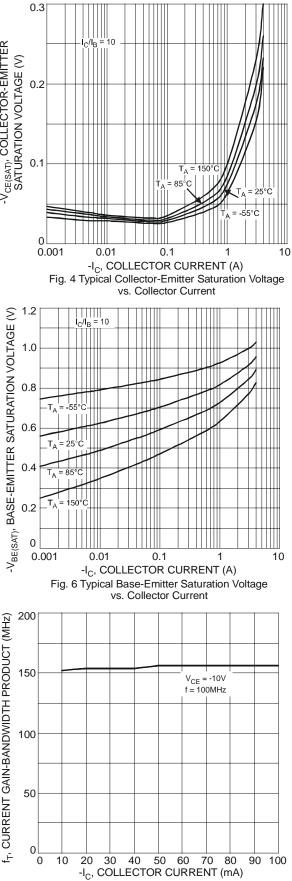


Fig. 8 Typical Gain-Bandwidth Product vs. Collector Current

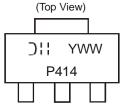


Ordering Information (Note 5)

| Device | Packaging | Shipping |
|-----------|-----------|------------------|
| DZT955-13 | SOT-223 | 2500/Tape & Reel |

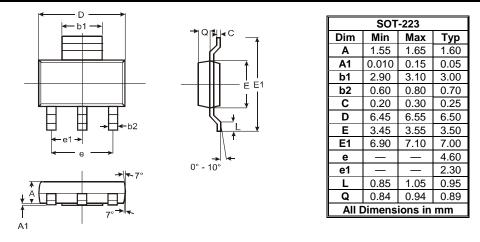
Notes: 5. For packaging details, go to our website at http://www.diodes.com/ap02007.pdf.

Marking Information

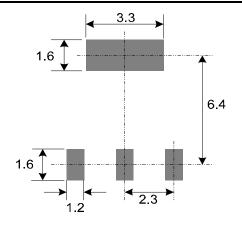


P414 = Product Type Marking Code YWW = Date Code Marking Y = Last digit of year ex: 7 = 2007WW = Week code 01 - 52

Package Outline Dimensions



Suggested Pad Layout: (Dimensions in mm)



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