

DUAL PNP SMALL SIGNAL SURFACE MOUNT TRANSISTOR
Features

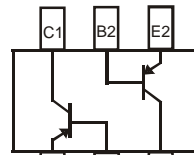
- Epitaxial Planar Die Construction
- Small Surface Mount Package
- **Lead Free By Design/RoHS Compliant (Note 1)**
- **"Green" Device (Note 2)**



Top View

Mechanical Data

- Case: SOT-26
- Case Material: Molded Plastic, "Green" Molding Compound. UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020D
- Terminal Connections: See Diagram
- Terminals: Finish – Matte Tin Annealed Over Copper Leadframe. Solderable per MIL-STD-202, Method 208
- Marking Information: See Page 3
- Ordering Information: See Page 3
- Weight: 0.016 grams (approximate)



Device Schematic

Maximum Ratings @T_A = 25°C unless otherwise specified

| Characteristic | Symbol | Value | Unit |
|------------------------------|------------------|-------|------|
| Collector-Base Voltage | V _{CB0} | -60 | V |
| Collector-Emitter Voltage | V _{CEO} | -50 | V |
| Emitter-Base Voltage | V _{EBO} | -5.0 | V |
| Continuous Collector Current | I _C | -500 | mA |

Thermal Characteristics

| Characteristic | Symbol | Value | Unit |
|---|-----------------------------------|-------------|-------|
| Power Dissipation (Note 3) @T _A = 25°C | P _D | 300 | mW |
| Thermal Resistance, Junction to Ambient Air (Note 3) @T _A = 25°C | R _{θJA} | 417 | °C /W |
| Operating and Storage Temperature Range | T _J , T _{STG} | -55 to +150 | °C |

Electrical Characteristics @T_A = 25°C unless otherwise specified

| Characteristic | Symbol | Min | Typ | Max | Unit | Test Condition |
|---|----------------------|------|-----|------|------|--|
| OFF CHARACTERISTICS (Note 4) | | | | | | |
| Collector-Base Breakdown Voltage | V _{(BR)CBO} | -60 | — | — | V | I _C = -100μA |
| Collector-Emitter Breakdown Voltage | V _{(BR)CEO} | -50 | — | — | V | I _C = -1.0mA |
| Emitter-Base Breakdown Voltage | V _{(BR)EBO} | -5.0 | — | — | V | I _E = -100μA |
| Collector Cutoff Current | I _{CBO} | — | — | -0.1 | μA | V _{CB} = -30V |
| Emitter Cutoff Current | I _{EBO} | — | — | -0.1 | μA | V _{EB} = -4.0V |
| ON CHARACTERISTICS (Note 4) | | | | | | |
| DC Current Gain | h _{FE} | 120 | — | 390 | — | V _{CE} = -3.0V, I _C = -100mA |
| Collector-Emitter Saturation Voltage (Note 3) | V _{CE(SAT)} | — | — | -0.6 | V | I _C = -500mA, I _B = -50mA |
| SMALL SIGNAL CHARACTERISTICS | | | | | | |
| Gain Bandwidth Product | f _T | — | 200 | — | MHz | V _{CE} = -5V, I _E = 20mA, f = 100MHz |
| Output Capacitance | C _{ob} | — | 7 | — | pF | V _{CB} = -10V, I _E = 0, f = 1MHz |

- 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 Diodes Inc. suggested pad layout document AP02001, which can be found on page 4 or on our website at <http://www.diodes.com/datasheets/ap02001.pdf>.
 4. Short duration pulse test used to minimize self-heating effect.

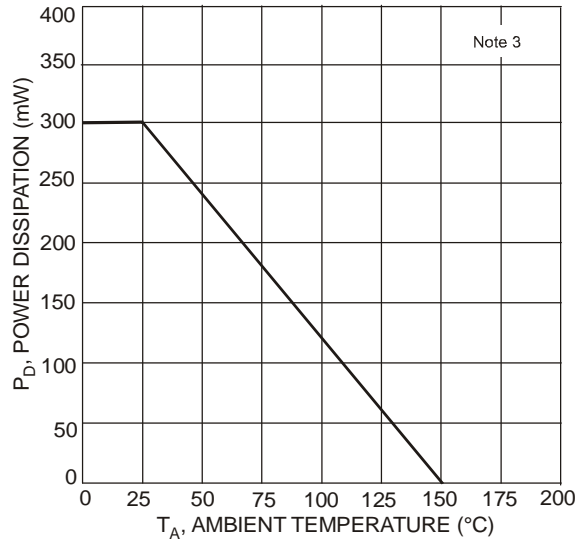


Fig. 1, Max Power Dissipation vs. Ambient Temperature

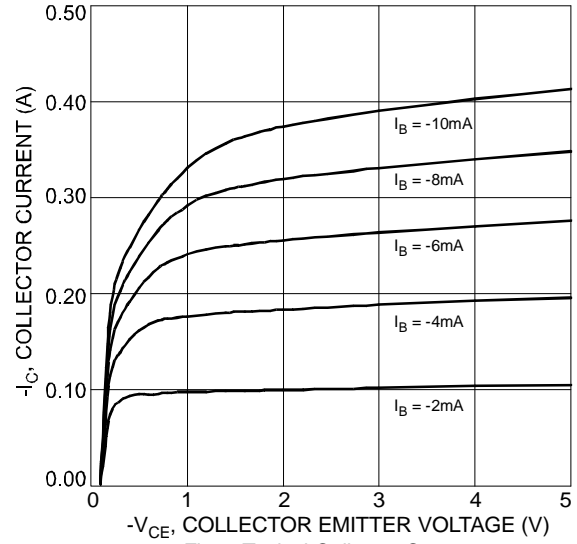


Fig. 2 Typical Collector Current vs. Collector-Emitter Voltage

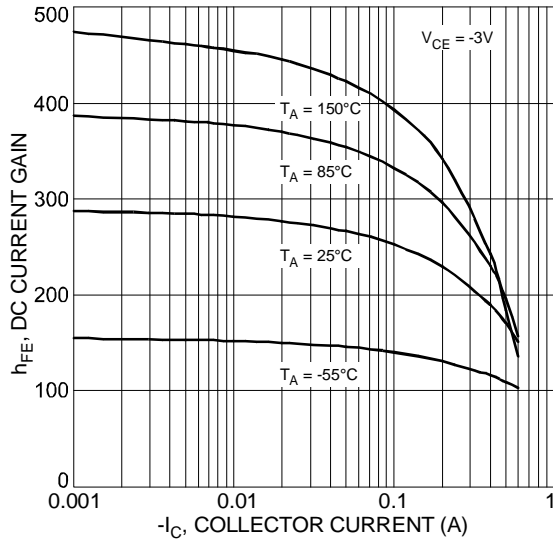


Fig. 3 Typical DC Current Gain vs. Collector Current

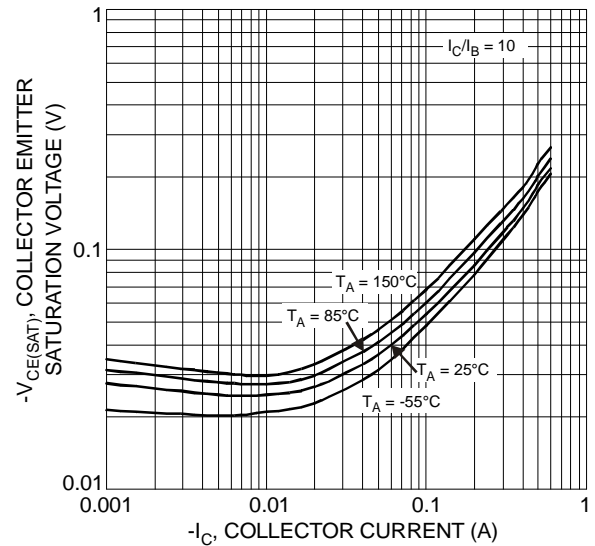


Fig. 4 Typical Collector-Emitter Saturation Voltage vs. Collector Current

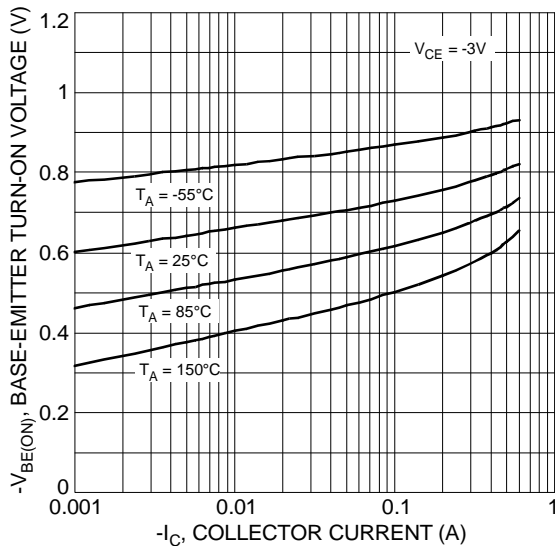


Fig. 5 Typical Base-Emitter Turn-On Voltage vs. Collector Current

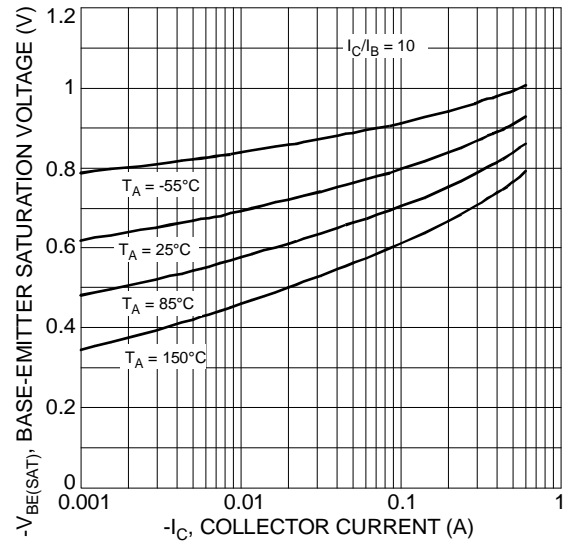


Fig. 6 Typical Base-Emitter Saturation Voltage vs. Collector Current

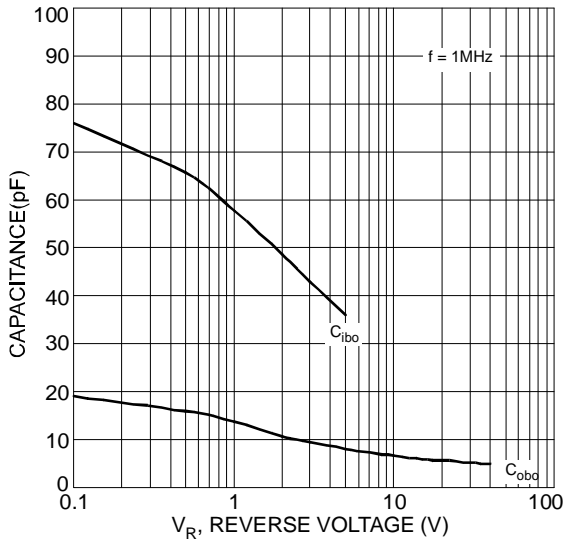


Fig. 7 Typical Capacitance Characteristics

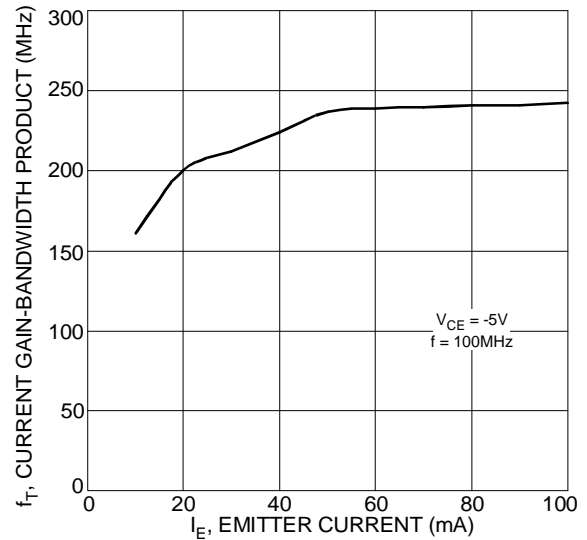


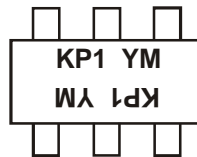
Fig. 8 Typical Gain-Bandwidth Product vs. Emitter Current

Ordering Information (Note 5)

| Part Number | Case | Packaging |
|-------------|--------|------------------|
| IMT17-7 | SOT-26 | 3000/Tape & Reel |

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

Marking Information



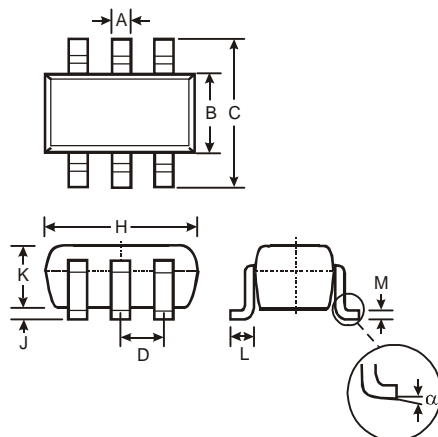
KP1 = Product Type Marking Code
 YM = Date Code Marking
 Y = Year (ex: V = 2008)
 M = Month (ex: 9 = September)

Date Code Key

| Year | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 |
|------|------|------|------|------|------|------|------|------|------|
| Code | U | V | W | X | Y | Z | A | B | C |

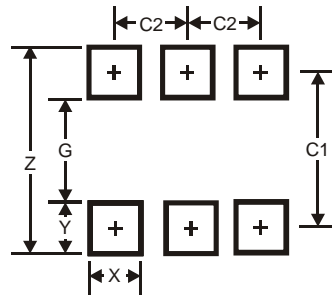
| Month | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|-------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Code | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | O | N | D |

Package Outline Dimensions



| SOT-26 | | | |
|----------------------|-------|------|------|
| Dim | Min | Max | Typ |
| A | 0.35 | 0.50 | 0.38 |
| B | 1.50 | 1.70 | 1.60 |
| C | 2.70 | 3.00 | 2.80 |
| D | — | — | 0.95 |
| H | 2.90 | 3.10 | 3.00 |
| J | 0.013 | 0.10 | 0.05 |
| K | 1.00 | 1.30 | 1.10 |
| L | 0.35 | 0.55 | 0.40 |
| M | 0.10 | 0.20 | 0.15 |
| α | 0° | 8° | — |
| All Dimensions in mm | | | |

Suggested Pad Layout



| Dimensions | Value (in mm) |
|------------|---------------|
| Z | 3.20 |
| G | 1.60 |
| X | 0.55 |
| Y | 0.80 |
| C1 | 2.40 |
| C2 | 0.95 |

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