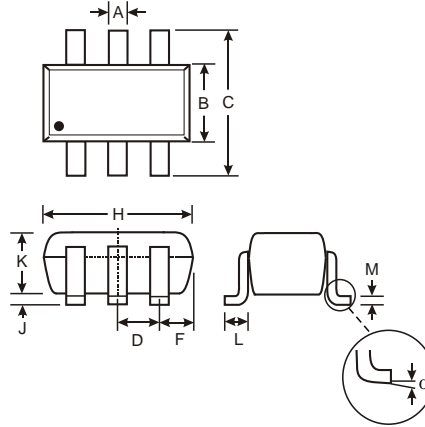


Features

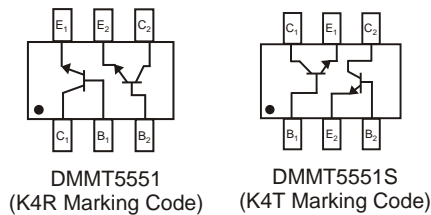
- Epitaxial Planar Die Construction
- Complementary PNP Type Available (DMMT5401)
- Ideal for Low Power Amplification and Switching
- Intrinsically Matched NPN Pair (Note 1)
- 2% Matched Tolerance, h_{FE} , $V_{CE(SAT)}$, $V_{BE(SAT)}$
- **Lead Free/RoHS Compliant (Note 4)**
- **"Green" Device (Note 5 and 6)**



| 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 |
| F | | | 0.55 |
| 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 |
| | 0° | 8° | |
| All Dimensions in mm | | | |

Mechanical Data

- Case: SOT-26
- Case Material: Molded Plastic, "Green" Molding Compound, Note 7. UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020C
- Terminal Connections: See Diagram
- Terminals: Solderable per MIL-STD-202, Method 208
- Lead Free Plating (Matte Tin Finish annealed over Copper leadframe).
- Marking (See Page 2): K4R & K4T
- Ordering & Date Code Information: See Page 2
- Weight: 0.006 grams (approximate)



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

| Characteristic | Symbol | Value | Unit |
|--|----------------|-------------|---------------------------|
| Collector-Base Voltage | V_{CBO} | 180 | V |
| Collector-Emitter Voltage | V_{CEO} | 160 | V |
| Emitter-Base Voltage | V_{EBO} | 6.0 | V |
| Collector Current - Continuous (Note 2) | I_C | 200 | mA |
| Power Dissipation (Note 2, 3) | P_d | 300 | mW |
| Thermal Resistance, Junction to Ambient (Note 2) | R_{JA} | 417 | $^\circ\text{C}/\text{W}$ |
| Operating and Storage and Temperature Range | T_j, T_{STG} | -55 to +150 | $^\circ\text{C}$ |

- Notes:
1. Built with adjacent die from a single wafer.
 2. Device mounted on FR-4 PCB, 1 inch x 0.85 inch x 0.062 inch; pad layout as shown on Diodes Inc. suggested pad layout document AP02001, which can be found on our website at <http://www.diodes.com/datasheets/ap02001.pdf>.
 3. Maximum combined dissipation.
 4. No purposefully added lead.
 5. Diodes Inc.'s "Green" policy can be found on our website at http://www.diodes.com/products/lead_free/index.php.
 6. Product manufactured with Date Code 0627 (week 27, 2006) and newer are built with Green Molding Compound. Product manufactured prior to Date Code 0627 are built with Non-Green Molding Compound and may contain Halogens or Sb2O3 Fire Retardants.

Electrical Characteristics @ $T_A = 25^\circ\text{C}$ unless otherwise specified

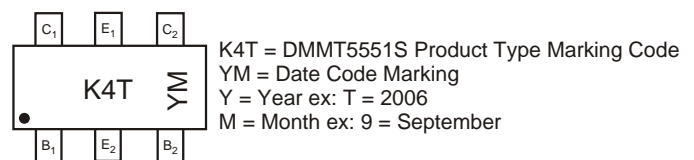
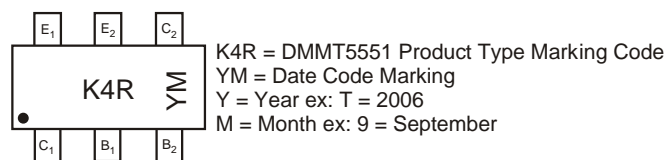
| Characteristic | Symbol | Min | Max | Unit | Test Condition |
|--------------------------------------|---------------|----------------|--------------|---------------------|--|
| OFF CHARACTERISTICS (Note 7) | | | | | |
| Collector-Base Breakdown Voltage | $V_{(BR)CBO}$ | 180 | | V | $I_C = 100\mu\text{A}, I_E = 0$ |
| Collector-Emitter Breakdown Voltage | $V_{(BR)CEO}$ | 160 | | V | $I_C = 1.0\text{mA}, I_B = 0$ |
| Emitter-Base Breakdown Voltage | $V_{(BR)EBO}$ | 6.0 | | V | $I_E = 10\mu\text{A}, I_C = 0$ |
| Collector Cutoff Current | I_{CBO} | | 50 | nA μA | $V_{CB} = 120\text{V}, I_E = 0$ $V_{CB} = 120\text{V}, I_E = 0, T_A = 100^\circ\text{C}$ |
| Emitter Cutoff Current | I_{EBO} | | 50 | nA | $V_{EB} = 4.0\text{V}, I_C = 0$ |
| ON CHARACTERISTICS (Note 7) | | | | | |
| DC Current Gain (Note 8) | h_{FE} | 80 80 30 | 250 | | $I_C = 1.0\text{mA}, V_{CE} = 5.0\text{V}$ $I_C = 10\text{mA}, V_{CE} = 5.0\text{V}$ $I_C = 50\text{mA}, V_{CE} = 5.0\text{V}$ |
| Collector-Emitter Saturation Voltage | $V_{CE(SAT)}$ | | 0.15 0.20 | V | $I_C = 10\text{mA}, I_B = 1.0\text{mA}$ $I_C = 50\text{mA}, I_B = 5.0\text{mA}$ |
| Base-Emitter Saturation Voltage | $V_{BE(SAT)}$ | | 1.0 | V | $I_C = 10\text{mA}, I_B = 1.0\text{mA}$ $I_C = 50\text{mA}, I_B = 5.0\text{mA}$ |
| SMALL SIGNAL CHARACTERISTICS | | | | | |
| Output Capacitance | C_{obo} | | 6.0 | pF | $V_{CB} = 10\text{V}, f = 1.0\text{MHz}, I_E = 0$ |
| Small Signal Current Gain | h_{FE} | 50 | 250 | | $V_{CE} = 10\text{V}, I_C = 1.0\text{mA}, f = 1.0\text{kHz}$ |
| Current Gain-Bandwidth Product | f_T | 100 | 300 | MHz | $V_{CE} = 10\text{V}, I_C = 10\text{mA}, f = 100\text{MHz}$ |
| Noise Figure | NF | | 8.0 | dB | $V_{CE} = 5.0\text{V}, I_C = 200\mu\text{A}, R_S = 1.0\text{k}\Omega, f = 1.0\text{kHz}$ |

Ordering Information (Note 6 & 9)

| Device | Packaging | Shipping |
|---------------|-----------|------------------|
| DMMT5551-7-F | SOT-26 | 3000/Tape & Reel |
| DMMT5551S-7-F | SOT-26 | 3000/Tape & Reel |

- Notes:
- Product manufactured with Date Code 0627 (week 27, 2006) and newer are built with Green Molding Compound. Product manufactured prior to Date Code 0627 are built with Non-Green Molding Compound and may contain Halogens or Sb2O3 Fire Retardants.
 - Short duration pulse test used to minimize self-heating effect.
 - The DC Current Gain, h_{FE} , (matched at $I_C = 10\text{mA}$ and $V_{CE} = 5\text{V}$) Collector Emitter Saturation Voltage, $V_{CE(SAT)}$, and Base Emitter Saturation Voltage, $V_{BE(SAT)}$ are matched with typical matched tolerances of 1% and maximum of 2%.
 - For Packaging Details, go to our website at <http://www.diodes.com/datasheets/ap02007.pdf>.

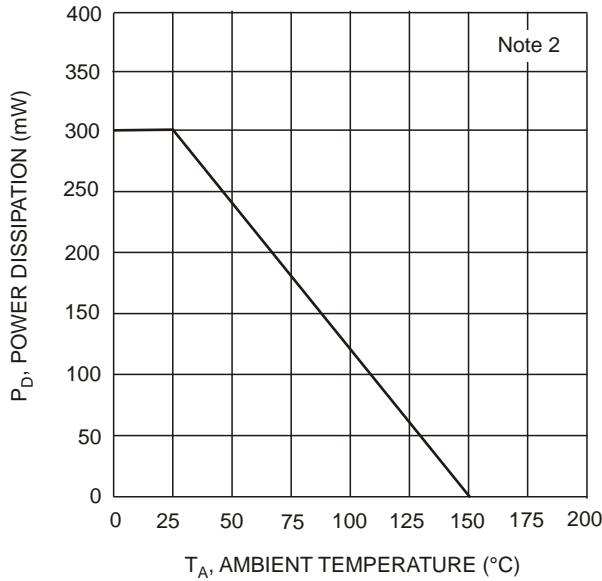
Marking Information



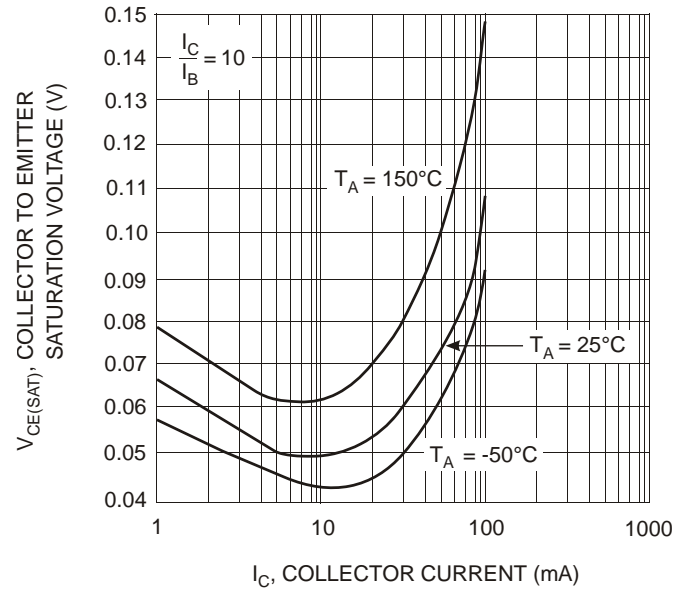
Date Code Key

| Year | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 |
|------|------|------|------|------|------|------|------|------|------|------|
| Code | Q | R | S | T | U | V | W | X | Y | Z |

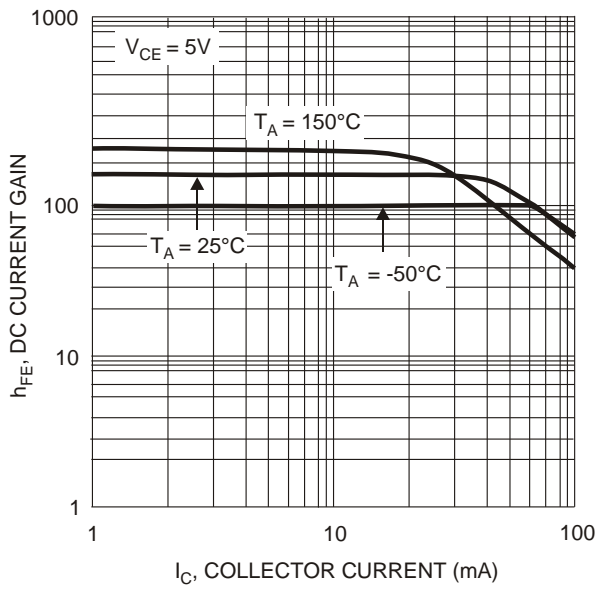
| Month | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|-------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Code | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | O | N | D |



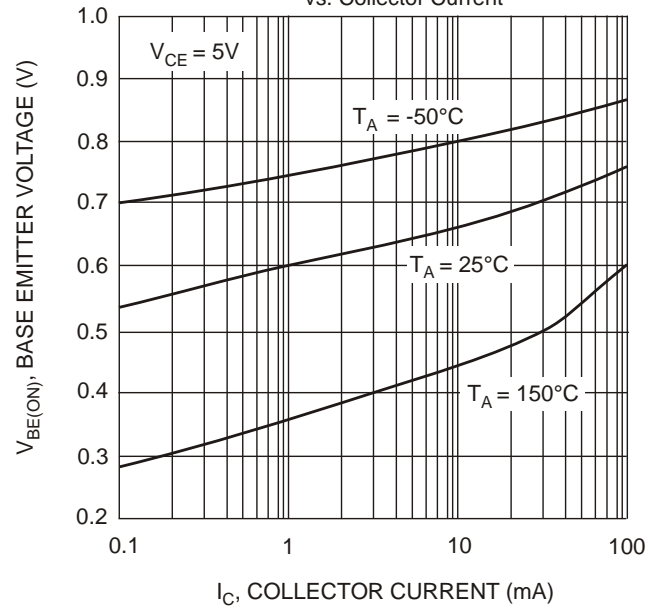
T_A , AMBIENT TEMPERATURE (°C)
Fig. 1, Max Power Dissipation vs Ambient Temperature



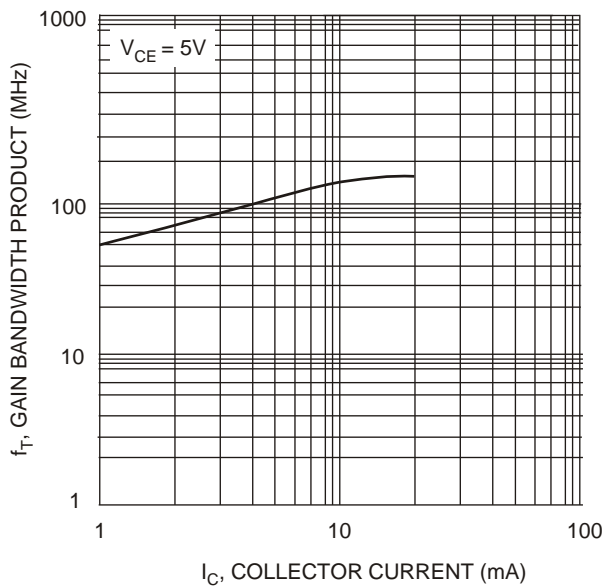
I_C , COLLECTOR CURRENT (mA)
Fig. 2, Collector Emitter Saturation Voltage vs. Collector Current



I_C , COLLECTOR CURRENT (mA)
Fig. 3, DC Current Gain vs Collector Current



I_C , COLLECTOR CURRENT (mA)
Fig. 4, Base Emitter Voltage vs. Collector Current



I_C , COLLECTOR CURRENT (mA)
Fig. 5, Gain Bandwidth Product vs. Collector Current

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