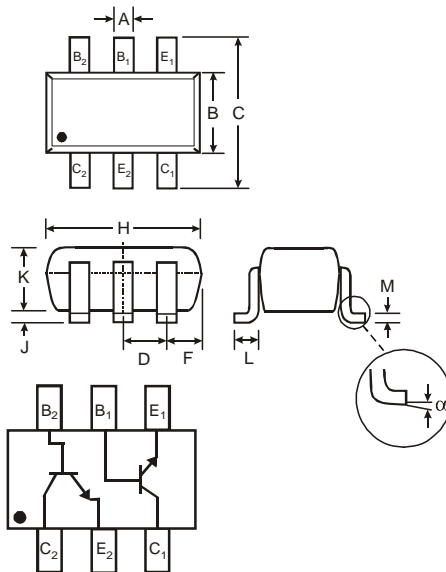


**Features**

- Epitaxial Planar Die Construction
- Complementary PNP Type Available (IMT4)
- Small Surface Mount Package
- **Lead Free/RoHS Compliant (Note 3)**
- "Green" Device, Note 4 and 5

**Mechanical Data**

- Case: SOT-26
- Case Material: Molded Plastic, "Green" Molding Compound, Note 5. 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 Information: KX8, See Page 3
- Ordering & Date Code Information: See Page 3
- Weight: 0.016 grams (approximate)



| 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 |
| $\alpha$             | 0°    | 8°   | —    |
| All Dimensions in mm |       |      |      |

**Maximum Ratings** @T<sub>A</sub> = 25°C unless otherwise specified

| Characteristic                                   | Symbol                            | Value       | Unit |
|--|-----------------------------------|-------------|------|
| Collector-Base Voltage                           | V <sub>CB0</sub>                  | 120         | V    |
| Collector-Emitter Voltage                        | V <sub>CEO</sub>                  | 120         | V    |
| Emitter-Base Voltage                             | V <sub>EBO</sub>                  | 5.0         | V    |
| Collector Current - Continuous                   | I <sub>C</sub>                    | 50          | mA   |
| Power Dissipation (Note 1)                       | P <sub>d</sub>                    | 300         | mW   |
| Thermal Resistance, Junction to Ambient (Note 1) | R <sub>θJA</sub>                  | 417         | °C/W |
| Operating and Storage Temperature Range          | T <sub>j</sub> , T <sub>STG</sub> | -55 to +150 | °C   |

**Electrical Characteristics** @T<sub>A</sub> = 25°C unless otherwise specified

| Characteristic                       | Symbol               | Min | Typ | Max | Unit | Test Condition  |
|--------------------------------------|----------------------|-----|-----|-----|------|---|
| <b>OFF CHARACTERISTICS (Note 2)</b>  |                      |     |     |     |      |   |
| Collector-Base Breakdown Voltage     | V <sub>(BR)CBO</sub> | 120 | —   | —   | V    | I <sub>C</sub> = 50μA                                     |
| Collector-Emitter Breakdown Voltage  | V <sub>(BR)CEO</sub> | 120 | —   | —   | V    | I <sub>C</sub> = 1.0mA                                    |
| Emitter-Base Breakdown Voltage       | V <sub>(BR)EBO</sub> | 5.0 | —   | —   | V    | I <sub>E</sub> = 50μA                                     |
| Collector Cutoff Current             | I <sub>CBO</sub>     | —   | —   | 0.5 | μA   | V <sub>CB</sub> = 100V                                    |
| Emitter Cutoff Current               | I <sub>EBO</sub>     | —   | —   | 0.5 | μA   | V <sub>EB</sub> = 4.0V                                    |
| <b>ON CHARACTERISTICS (Note 2)</b>   |                      |     |     |     |      |   |
| DC Current Gain                      | h <sub>FE</sub>      | 180 | —   | 820 | —    | I <sub>C</sub> = 2.0mA, V <sub>CE</sub> = 6.0V            |
| Collector-Emitter Saturation Voltage | V <sub>CE(SAT)</sub> | —   | —   | 0.5 | V    | I <sub>C</sub> = 10mA, I <sub>B</sub> = 1.0mA             |
| <b>SMALL SIGNAL CHARACTERISTICS</b>  |                      |     |     |     |      |   |
| Current Gain-Bandwidth Product       | f <sub>T</sub>       | —   | 140 | —   | MHz  | V <sub>CE</sub> = 12V, I <sub>C</sub> = 2.0mA, f = 100MHz |

- Notes:
1. Device mounted on FR-5 PCB 1.0 x 0.75 x 0.062 inch pad layout as shown on Diodes Inc. suggested pad layout AP02001, which can be found on our website at <http://www.diodes.com/datasheets/ap02001.pdf>. 200mW per element must not be exceeded.
  2. Short duration pulse test used to minimize self-heating effect.
  3. No purposefully added lead.
  4. Diodes Inc.'s "Green" policy can be found on our website at [http://www.diodes.com/products/lead\\_free/index.php](http://www.diodes.com/products/lead_free/index.php).
  5. 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.

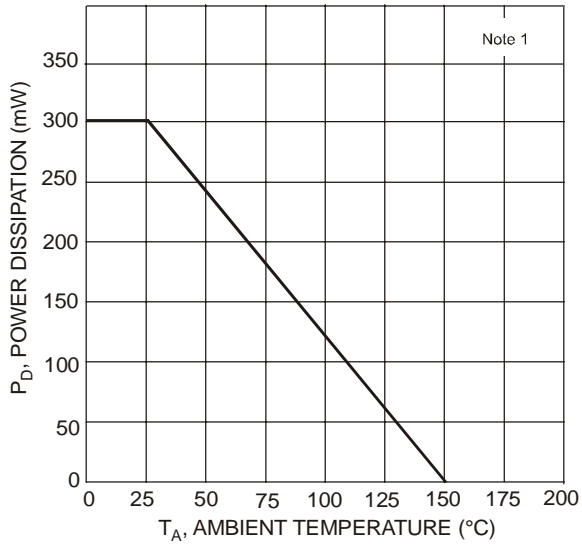


Fig. 1, Max Power Dissipation vs. Ambient Temperature

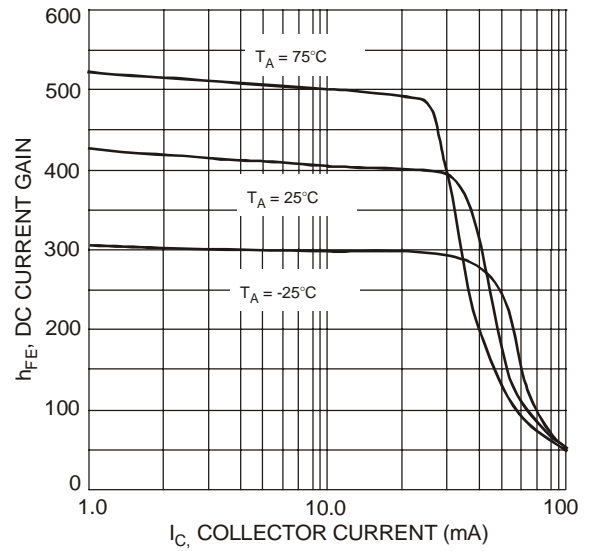


Fig. 2 Typical DC Current Gain vs. Collector Current

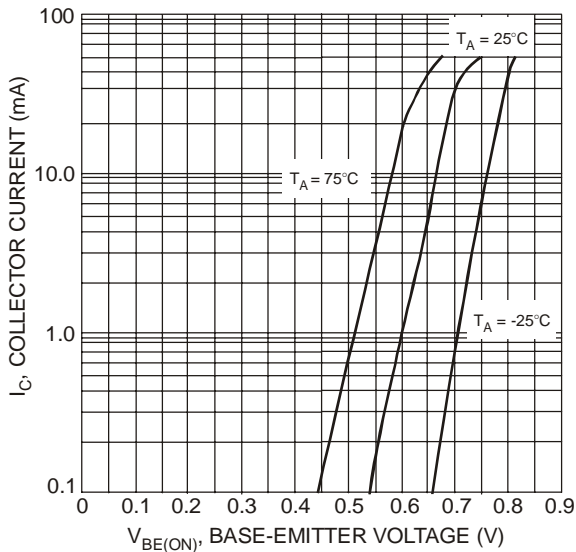


Fig. 3 Typical Collector Current vs. Base-Emitter Voltage

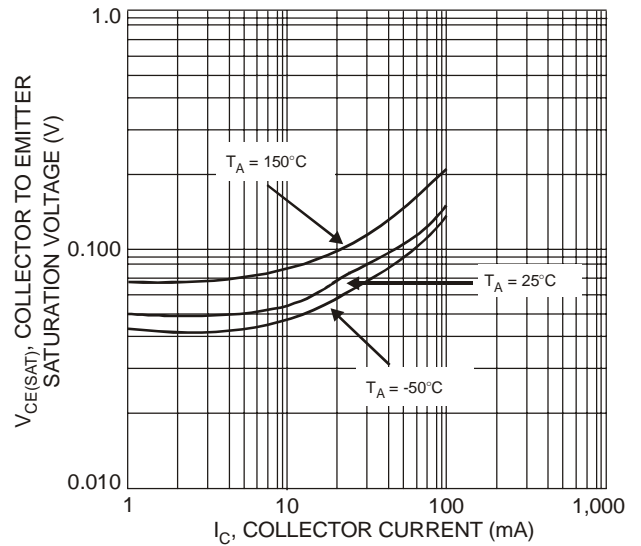


Fig. 4 Typical Collector-Emitter Voltage vs. Collector Current

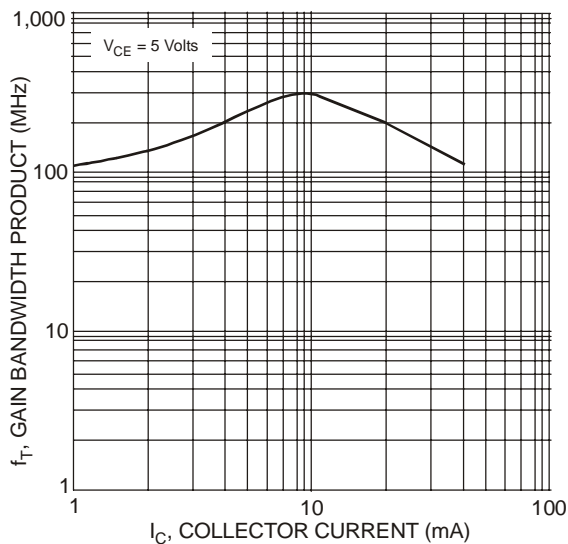


Fig. 5 Typical Gain Bandwidth Product vs. Collector Current

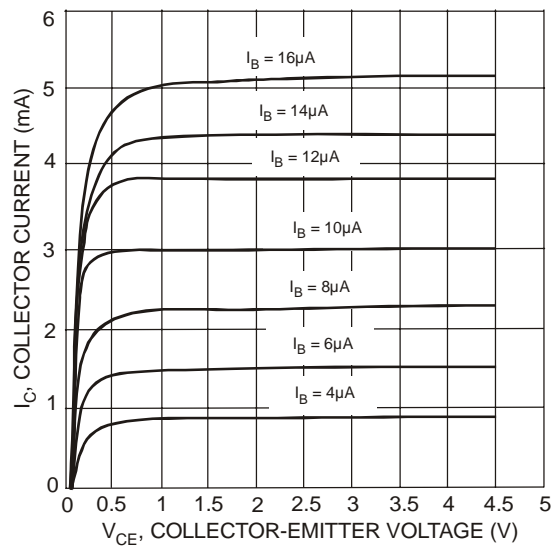


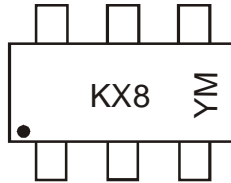
Fig. 6 Typical Collector Current vs. Collector-Emitter Voltage

## Ordering Information (Note 5 & 6)

| Device   | Packaging | Shipping         |
|----------|-----------|------------------|
| IMX8-7-F | SOT-26    | 3000/Tape & Reel |

Notes: 6. For packaging details, go to our website at <http://www.diodes.com/datasheets/ap02007.pdf>.

## Marking Information



KX8 = Product Type Marking Code  
 YM = Date Code Marking  
 Y = Year ex: T = 2006  
 M = Month ex: 9 = September

### Date Code Key

| Year | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 |
|------|------|------|------|------|------|------|------|------|------|------|------|
| Code | N    | P    | 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   |

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