# IMT4

## DUAL PNP SMALL SIGNAL SURFACE MOUNT TRANSISTOR

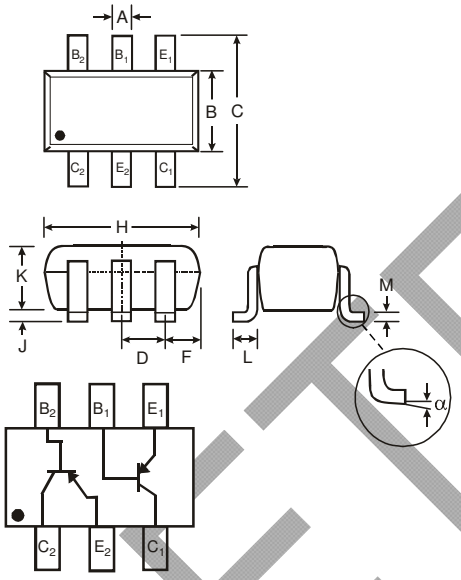
Lead-free Green

## Features

- Epitaxial Planar Die Construction
- Complementary NPN Type Available (IMX8)
- 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: KX7 - 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 |
| **α** | 0° | 8° | — |
| **All Dimensions in mm** | | | |

## Maximum Ratings @$T_A$ = 25°C unless otherwise specified

| Characteristic | Symbol | Value | Unit |
|---|---|---|---|
| Collector-Base Voltage | $V_{CBO}$ | -120 | V |
| Collector-Emitter Voltage | $V_{CEO}$ | -120 | V |
| Emitter-Base Voltage | $V_{EBO}$ | -5.0 | V |
| Collector Current - Continuous | $I_C$ | -50 | mA |
| Power Dissipation (Note 1) | $P_d$ | 225 | mW |
| Thermal Resistance, Junction to Ambient (Note 1) | $R_{\theta JA}$ | 555 | °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 2)** | | | | | | |
| Collector-Base Breakdown Voltage | $V_{(BR)CBO}$ | -120 | — | — | V | $I_C$ = -50μA |
| Collector-Emitter Breakdown Voltage | $V_{(BR)CEO}$ | -120 | — | — | V | $I_C$ = -1.0mA |
| Emitter-Base Breakdown Voltage | $V_{(BR)EBO}$ | -5.0 | — | — | V | $I_E$ = -50μA |
| Collector Cutoff Current | $I_{CBO}$ | — | — | -0.5 | μA | $V_{CB}$ = -100V |
| Emitter Cutoff Current | $I_{EBO}$ | — | — | -0.5 | μA | $V_{EB}$ = -4.0V |
| **ON CHARACTERISTICS (Note 2)** | | | | | | |
| DC Current Gain | $h_{FE}$ | 180 | — | 820 | — | $I_C$ = -2.0mA, $V_{CE}$ = -6.0V |
| Collector-Emitter Saturation Voltage | $V_{CE(SAT)}$ | — | — | -0.5 | V | $I_C$ = -10mA, $I_B$ = -1.0mA |
| **SMALL SIGNAL CHARACTERISTICS** | | | | | | |
| Current Gain-Bandwidth Product | $f_T$ | — | 140 | — | MHz | $V_{CE}$ = -12V, $I_C$ = -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.
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.

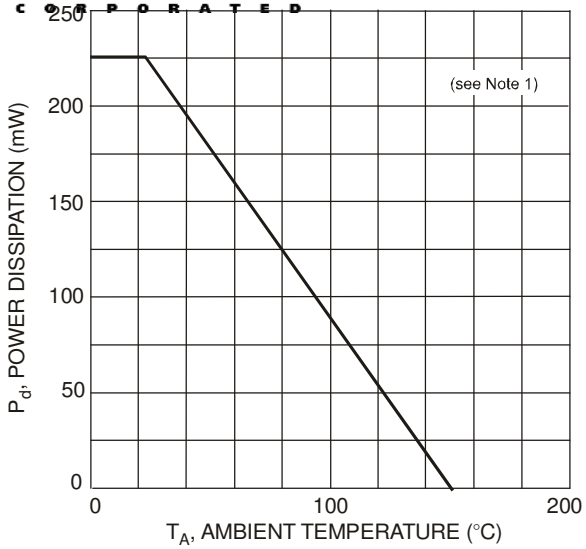



Fig. 1, Power Derating Curve

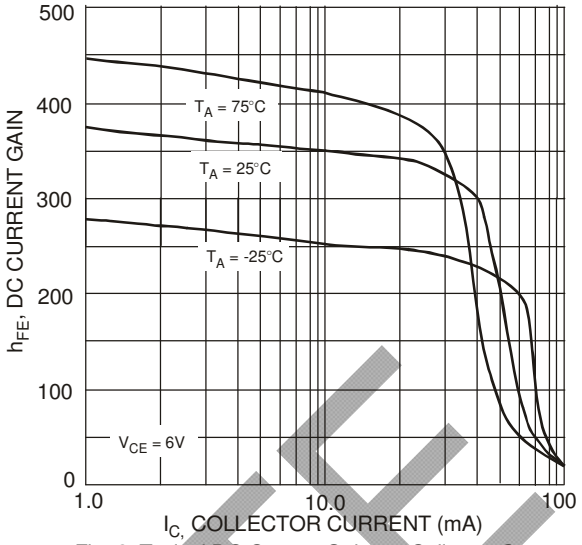



Fig. 2 Typical DC Current Gain vs. Collector Current

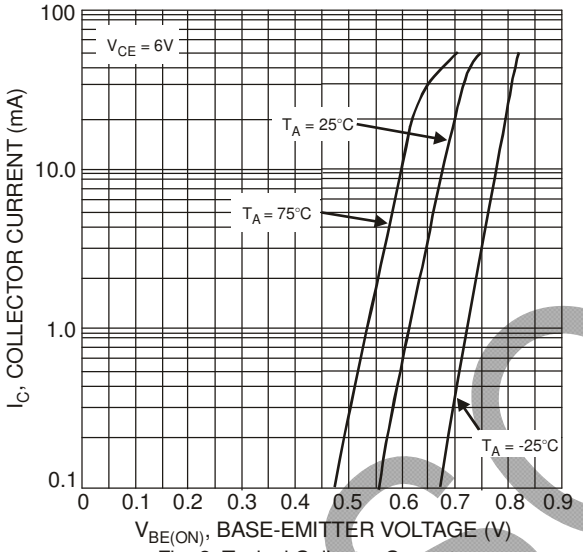



Fig. 3 Typical Collector Current vs. Base-Emitter Voltage

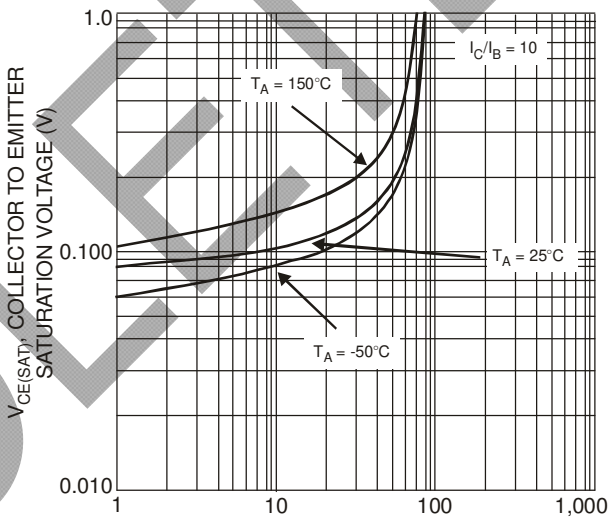



Fig. 4 Typical Collector-Emitter Voltage vs. Collector Current

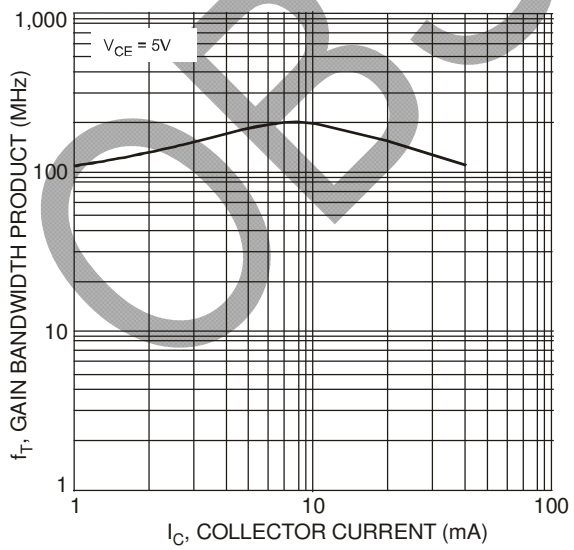



Fig. 5 Typical Gain Bandwidth Product vs. Collector Current

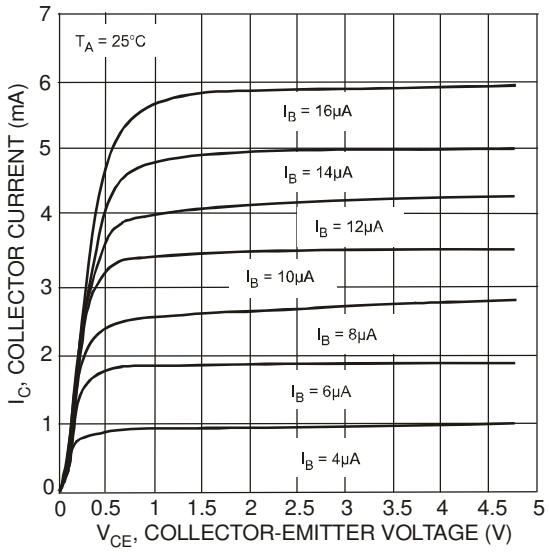


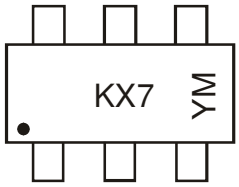

Fig. 6 Typical Collector Current vs. Collector-Emitter Voltage

## Ordering Information (Note 5 & 6)

| Device | Packaging | Shipping |
|---|---|---|
| IMT4-7-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




KX7 = Product Type Marking Code
YM = Date Code Marking
Y =Year ex: T = 2006
M = Month ex: 9 = September
YM = Date Code Marking

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 |