

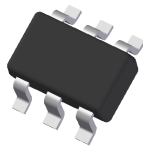
**DUAL NPN SMALL SIGNAL SURFACE MOUNT TRANSISTOR**

**Features**

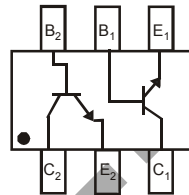
- Epitaxial Planar Die Construction
- Complementary PNP Type Available (IMT4)
- Small Surface Mount Package
- **Lead Free/RoHS Compliant (Note 3)**
- **"Green" Device (Notes 4 and 5)**

**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-020D
- Terminal Connections: See Diagram
- Terminals: Matte Tin Finish annealed over Copper leadframe (Lead Free Plating). Solderable per MIL-STD-202, Method 208
- Marking Information: See Page 3
- Ordering Information: See Page 3
- Weight: 0.016 grams (approximate)



Top View



Device Schematic

**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

**Thermal Characteristics**

Characteristic	Symbol	Value	Unit
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.

OBSOLETE – PART DISCONTINUED

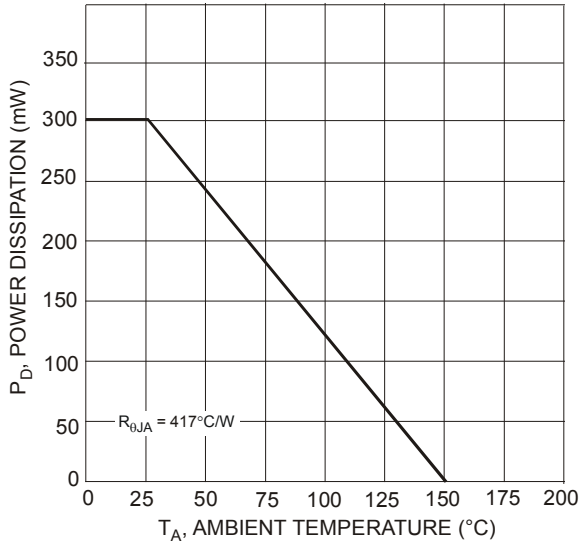


Fig. 1 Power Dissipation vs. Ambient Temperature (Note 1)

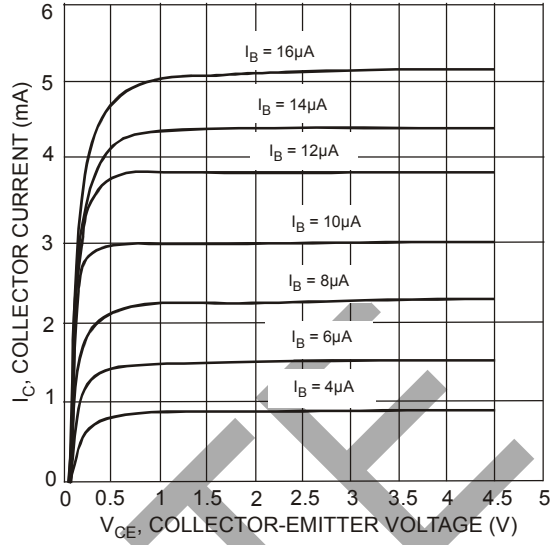


Fig. 2 Typical Collector Current vs. Collector-Emitter Voltage

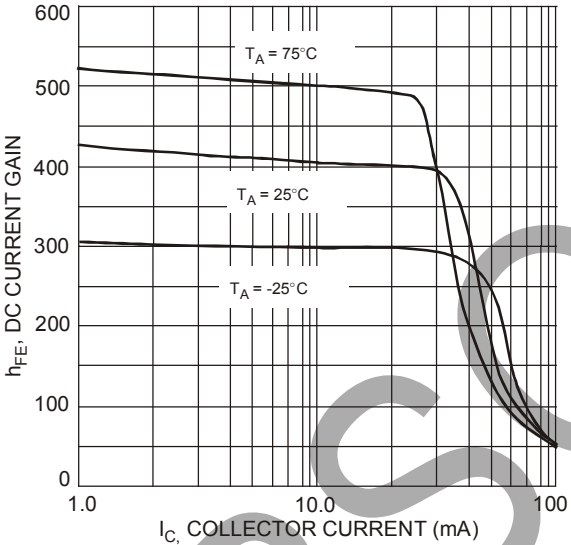


Fig. 3 Typical DC Current Gain vs. Collector Current

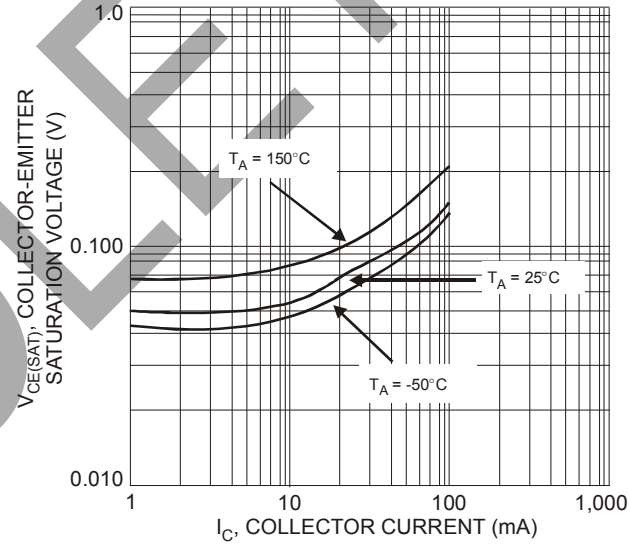


Fig. 4 Typical Collector-Emitter Voltage vs. Collector Current

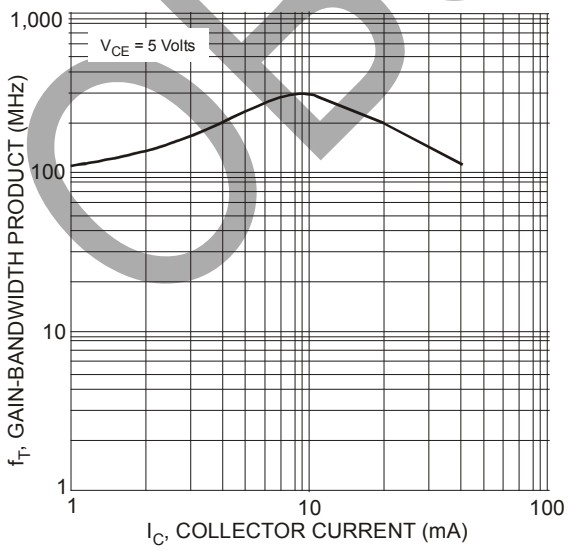


Fig. 5 Typical Gain-Bandwidth Product vs. Collector Current

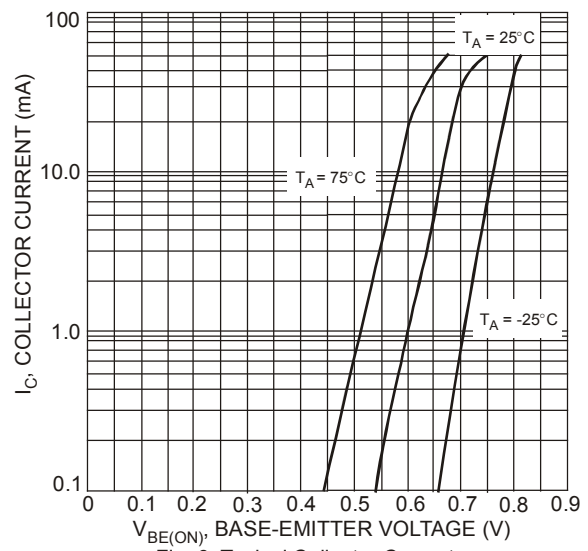


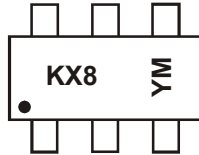
Fig. 6 Typical Collector Current vs. Base-Emitter Voltage

**Ordering Information** (Notes 5 & 6)

<b>Part Number</b> IMX8-7-F	<b>Case</b> SOT-26	<b>Packaging</b> 3000/Tape & Reel
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Notes: 6. For packaging details, go to our website at <http://www.diodes.com/datasheets/ap02007.pdf>.

**Marking Information**

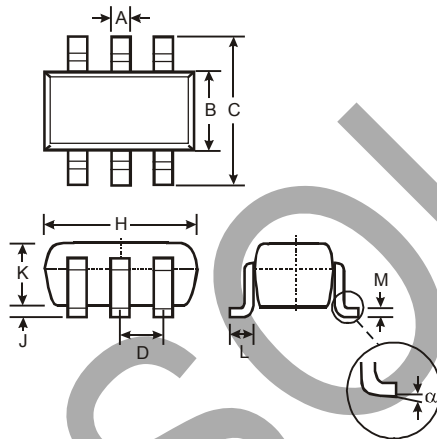


KX8 = Product Type Marking Code  
 YM = Date Code Marking  
 Y = Year (ex: T = 2006)  
 M = Month (ex: 9 = September)

Date Code Key

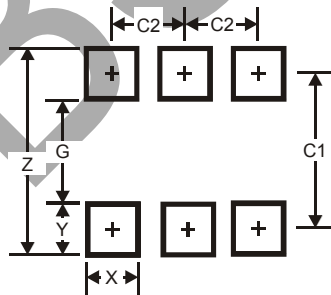
<b>Year Code</b>	2002 N	2003 P	2004 R	2005 S	2006 T	2007 U	2008 V	2009 W	2010 X	2011 Y	2012 Z	2013 A	2014 B	2015 C
<b>Month Code</b>	Jan 1	Feb 2	Mar 3	Apr 4	May 5	Jun 6	Jul 7	Aug 8	Sep 9	Oct O	Nov N	Dec D		

**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
$\alpha$	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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