

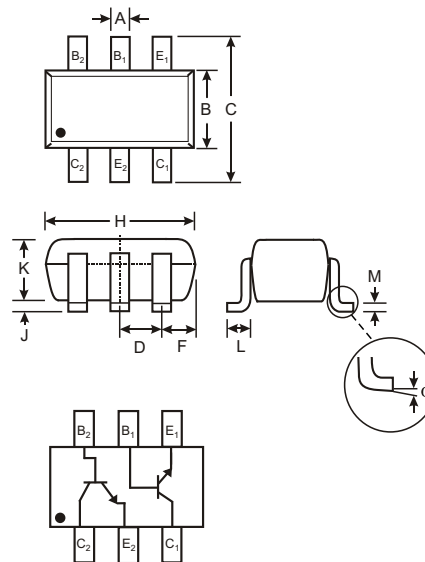
## DUAL NPN SMALL SIGNAL SURFACE MOUNT TRANSISTOR

### Features

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

### Mechanical Data

- Case: SOT-26
- Case Material: Molded Plastic, "Green" Molding Compound, Note 5. UL Flammability Classification 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): KX8
- Ordering & Date Code Information: See Page 2
- 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
	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>CBO</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>JA</sub>	417	C/W
Operating and Storage and 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> = 50 A
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> = 50 A
Collector Cutoff Current	I <sub>CBO</sub>			0.5	A	V <sub>CB</sub> = 100V
Emitter Cutoff Current	I <sub>EBO</sub>			0.5	A	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

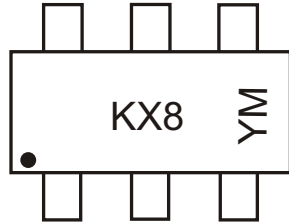
- Notes:
- Device mounted on FR-5 PCB 1.0 x 0.75 x 0.062 inch pad layout as shown on Diodes Inc. suggested pad layout AP02001, which can be found on our website at <http://www.diodes.com/datasheets/ap02001.pdf>. 200mW per element must not be exceeded.
  - Short duration test pulse used to minimize self-heating effect.
  - No purposefully added lead.
  - 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).
  - Product manufactured with Date Code 0609 (week 9, 2006) and newer are built with Green Molding Compound. Product manufactured prior to Date Code 0609 are built with Non-Green Molding Compound and may contain Halogens or Sb2O3 Fire Retardants.

## Ordering Information (Note 5 & 6)

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

- Notes: 5. Product manufactured with Date Code 0609 (week 9, 2006) and newer are built with Green Molding Compound. Product manufactured prior to Date Code 0609 are built with Non-Green Molding Compound and may contain Halogens or Sb2O3 Fire Retardants.  
 6. For Packaging Details, go to our website at <http://www.diodes.com/datasheets/ap02007.pdf>.

## Marking Information



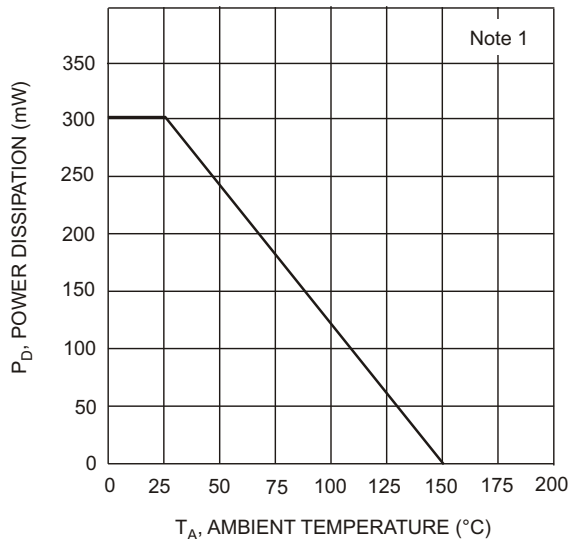
KX8 = Product Type Marking Code  
 YM = Date Code Marking  
 Y = Year ex: T = 2006  
 M = Month ex: 9 = September

### 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



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

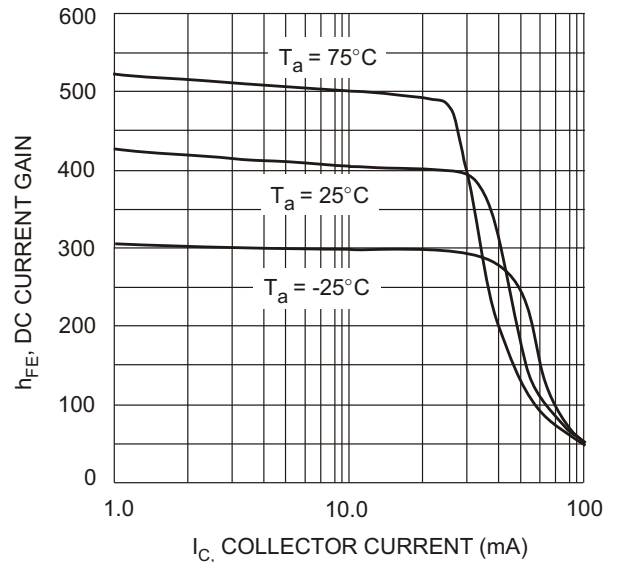
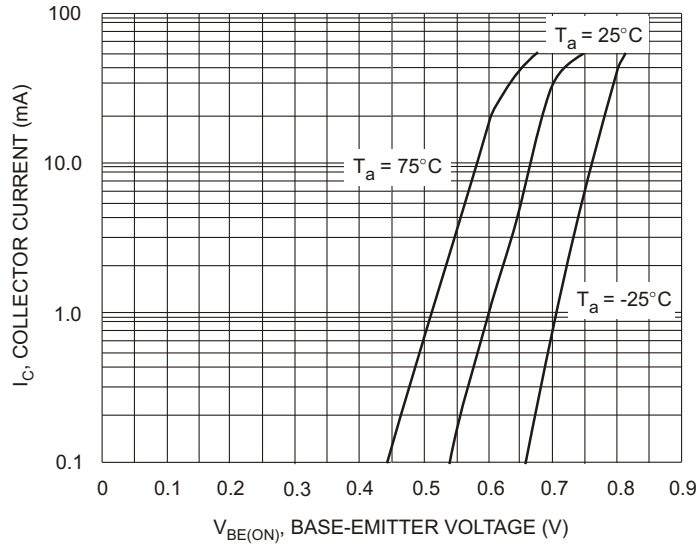
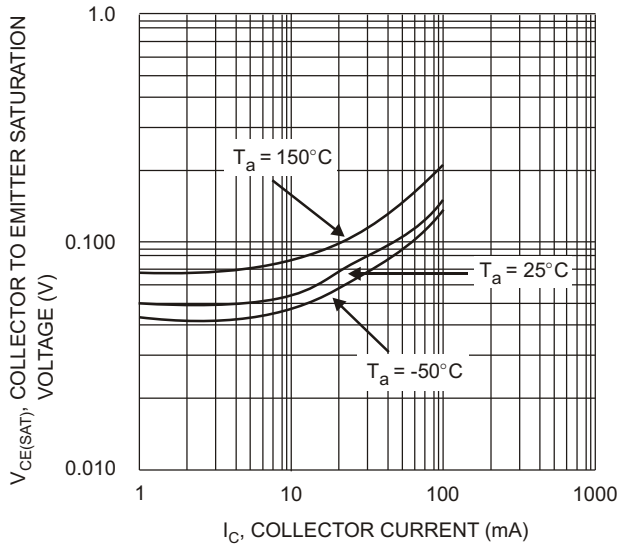


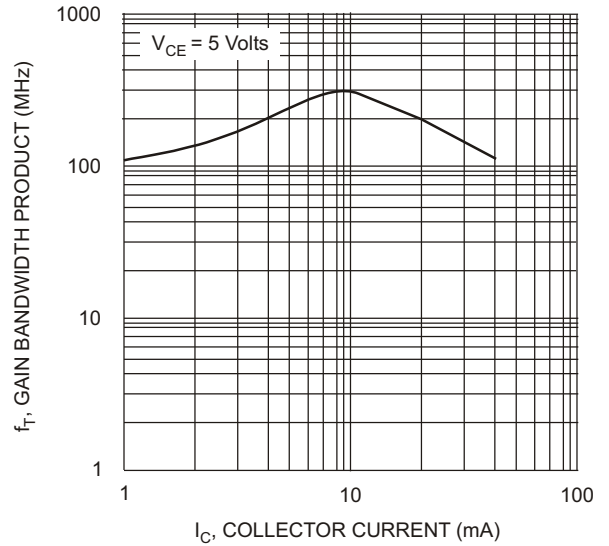
Fig. 2 Typical DC Current Gain vs. Collector Current



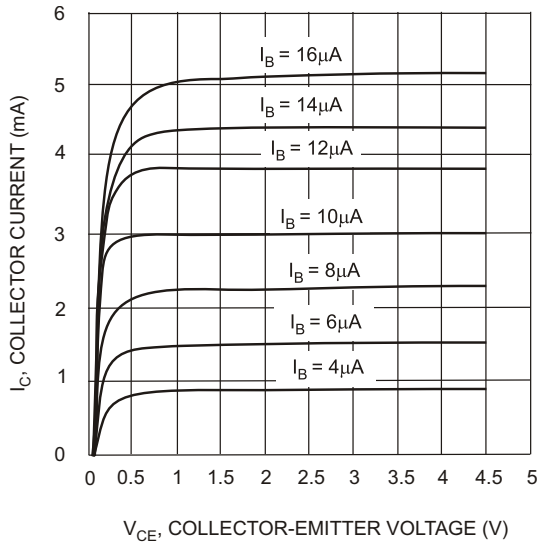
$V_{BE(ON)}$ , BASE-EMITTER VOLTAGE (V)  
Fig. 3 Typical Collector Current vs. Base-Emitter Voltage



$I_C$ , COLLECTOR CURRENT (mA)  
Fig. 4 Typical Collector-Emitter Voltage vs. Collector Current



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



$V_{CE}$ , COLLECTOR-EMITTER VOLTAGE (V)  
Fig. 6 Typical Collector Current vs. Collector-Emitter Voltage

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