

## Features

- Epitaxial Die Construction
- Ultra-Small Leadless Surface Mount Package
- Ultra Low Profile (0.4mm max)
- Complementary PNP Type Available (BC857BLP4)
- **"Lead Free", RoHS Compliant (Note 1)**
- **Halogen and Antimony Free "Green" Device (Note 2)**

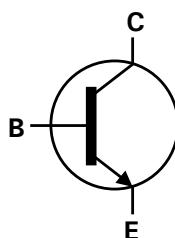
## Mechanical Data

- Case: DFN1006H4-3
- Case Material: Molded Plastic, "Green" Molding Compound. UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020
- Terminals: Finish — NiPdAu over Copper leadframe. Solderable per MIL-STD-202, Method 208
- Weight: 0.0008 grams (approximate)

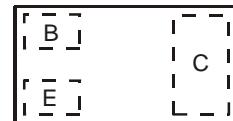
DFN1006H4-3



Bottom View



Device Symbol


 Top View  
 Device Schematic

## Ordering Information (Note 3)

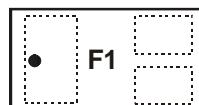
Product	Marking	Reel size (inches)	Tape width (mm)	Quantity per reel
BC847BLP4-7	F1	7	8mm	3,000
BC847BLP4-7B	F1	7	8mm	10,000

Notes:

1. No purposefully added lead.
2. Diodes Inc's "Green" policy can be found on our website at <http://www.diodes.com>.
3. For packaging details, go to our website at <http://www.diodes.com>.

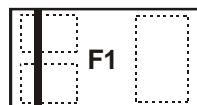
## Marking Information

BC847BLP4-7



Top View  
 Dot Denotes  
 Collector Side

BC847BLP4-7B



Top View  
 Bar Denotes Base  
 and Emitter Side

F1 = Product Type Marking Code

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

Characteristic	Symbol	Value	Unit
Collector-Base Voltage	$V_{CBO}$	50	V
Collector-Emitter Voltage	$V_{CEO}$	45	V
Emitter-Base Voltage	$V_{EBO}$	6.0	V
Collector Current	$I_C$	100	mA

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

Characteristic	Symbol	Value	Unit
Power Dissipation (Note 4)	$P_D$	250	mW
Thermal Resistance, Junction to Ambient (Note 4)	$R_{\theta JA}$	500	°C/W
Operating and Storage Temperature Range	$T_J, T_{STG}$	-55 to +150	°C

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

Characteristic (Note 5)	Symbol	Min	Typ	Max	Unit	Test Condition
Collector-Base Breakdown Voltage	$BV_{CBO}$	50	—	—	V	$I_C = 10\mu\text{A}, I_B = 0$
Collector-Emitter Breakdown Voltage	$BV_{CEO}$	45	—	—	V	$I_C = 10\text{mA}, I_B = 0$
Emitter-Base Breakdown Voltage	$BV_{EBO}$	6	—	—	V	$I_E = 1\mu\text{A}, I_C = 0$
DC Current Gain	$h_{FE}$	200	350	450	—	$V_{CE} = 5.0\text{V}, I_C = 2.0\text{mA}$
Collector-Emitter Saturation Voltage	$V_{CE(\text{sat})}$	—	80 200	250 600	mV	$I_C = 10\text{mA}, I_B = 0.5\text{mA}$ $I_C = 100\text{mA}, I_B = 5.0\text{mA}$
Base-Emitter Saturation Voltage	$V_{BE(\text{sat})}$	—	700 900	—	mV	$I_C = 10\text{mA}, I_B = 0.5\text{mA}$ $I_C = 100\text{mA}, I_B = 5.0\text{mA}$
Base-Emitter Voltage	$V_{BE(\text{on})}$	580 —	640 725	700 770	mV	$V_{CE} = 5.0\text{V}, I_C = 2.0\text{mA}$ $V_{CE} = 5.0\text{V}, I_C = 10\text{mA}$
Collector-Cutoff Current	$I_{CBO}$	—	—	15 5.0	nA μA	$V_{CB} = 30\text{V}$ $V_{CB} = 30\text{V}, T_A = 150^\circ\text{C}$
Gain Bandwidth Product	$f_T$	100	—	—	MHz	$V_{CE} = 5.0\text{V}, I_C = 10\text{mA}$ , $f = 100\text{MHz}$
Collector-Base Capacitance	$C_{CBO}$	—	3.0	—	pF	$V_{CB} = 10\text{V}, f = 1.0\text{MHz}$

Notes: 4. Device mounted on FR-4 PCB.  
5. Short duration pulse test used to minimize self-heating effect.

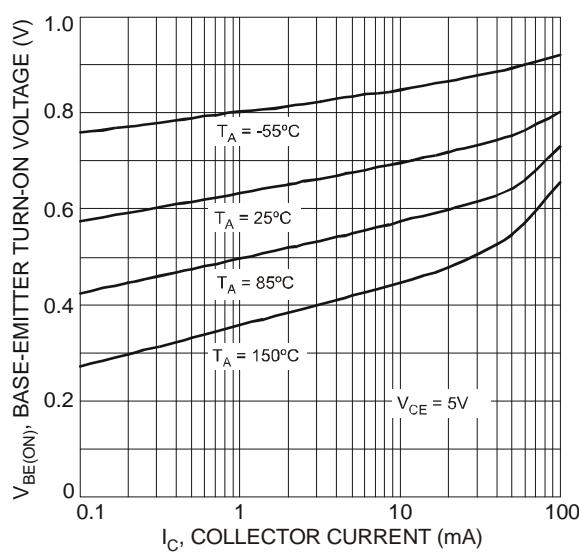
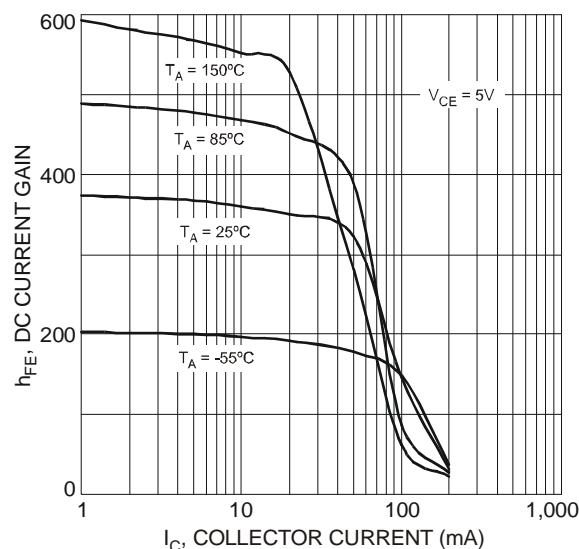
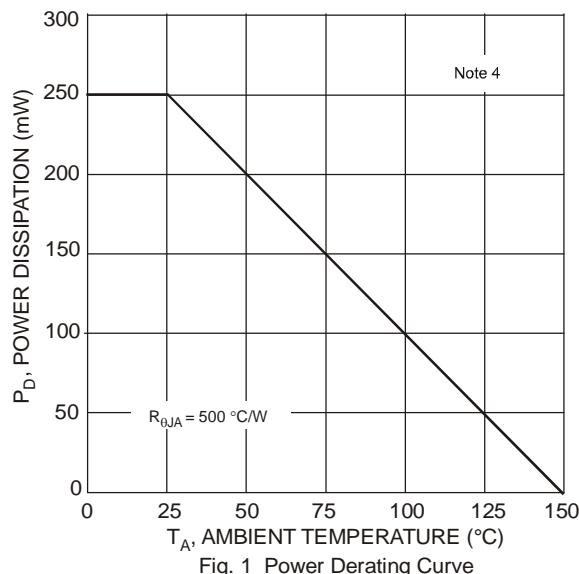
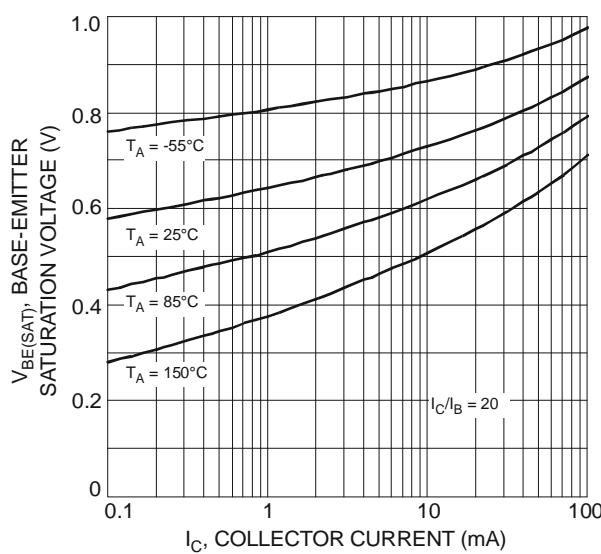
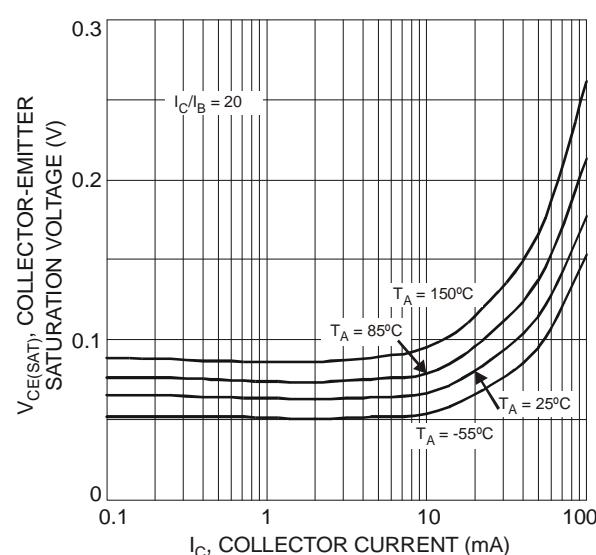
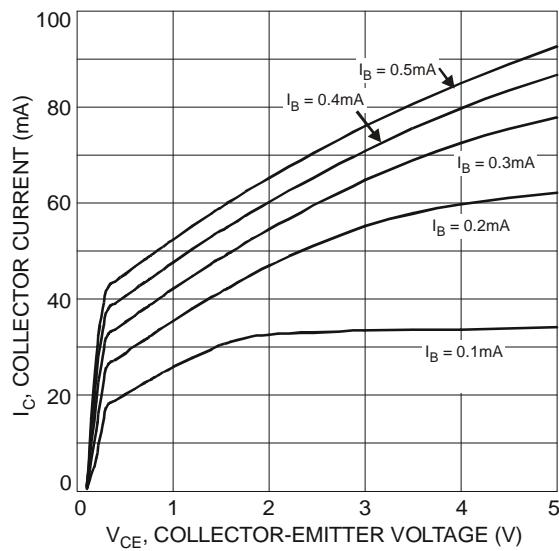
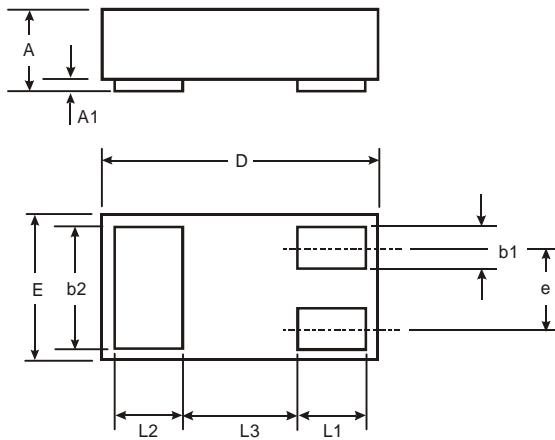


Fig. 5 Typical Base-Emitter Turn-On Voltage vs. Collector Current



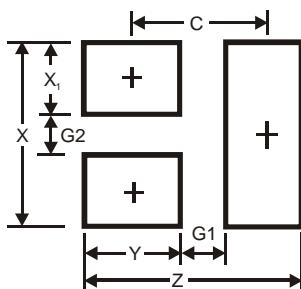
## Package Outline Dimensions



DFN1006H4-3			
Dim	Min	Max	Typ
<b>A</b>	—	0.40	—
<b>A1</b>	0	0.05	0.02
<b>b1</b>	0.10	0.20	0.15
<b>b2</b>	0.45	0.55	0.50
<b>D</b>	0.95	1.075	1.00
<b>E</b>	0.55	0.675	0.60
<b>e</b>	—	—	0.35
<b>L1</b>	0.20	0.30	0.25
<b>L2</b>	0.20	0.30	0.25
<b>L3</b>	—	—	0.40

All Dimensions in mm

## Suggested Pad Layout



Dimensions	Value (in mm)
<b>Z</b>	1.1
<b>G1</b>	0.3
<b>G2</b>	0.2
<b>X</b>	0.7
<b>X1</b>	0.25
<b>Y</b>	0.4
<b>C</b>	0.7

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