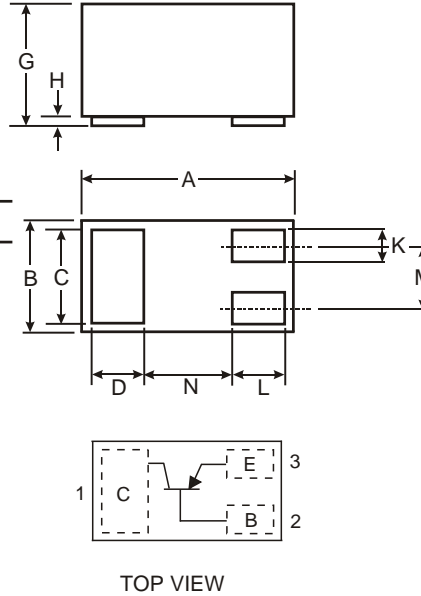


**Features**

- Epitaxial Die Construction
- Complementary NPN Type Available (BC847BLP)
- Ultra-Small Leadless Surface Mount Package
- **Lead Free By Design/RoHS Compliant (Note 1)**
- "Green" Device (Note 2)

**Mechanical Data**

- Case: DFN1006-3
- Case Material: Molded Plastic, "Green" Molding Compound. UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020C
- Terminal Connections Indicator: Collector Dot
- Terminals: Finish NiPdAu annealed over Copper leadframe. Solderable per MIL-STD-202, Method 208
- Ordering Information: See Page 3
- Marking Code 3W, Dot denotes Collector Side
- Weight: 0.001 grams



DFN1006-3			
Dim	Min	Max	Typ
A	0.95	1.075	1.00
B	0.55	0.675	0.60
C	0.45	0.55	0.50
D	0.20	0.30	0.25
G	0.47	0.53	0.50
H	0	0.05	0.03
K	0.10	0.20	0.15
L	0.20	0.30	0.25
M			0.35
N			0.40
All Dimensions in mm			

**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	$V_{EBO}$	-5.0	V
Collector Current	$I_C$	-100	mA
Operating and Storage Temperature Range	$T_j, T_{STG}$	-55 to +150	$^\circ\text{C}$

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

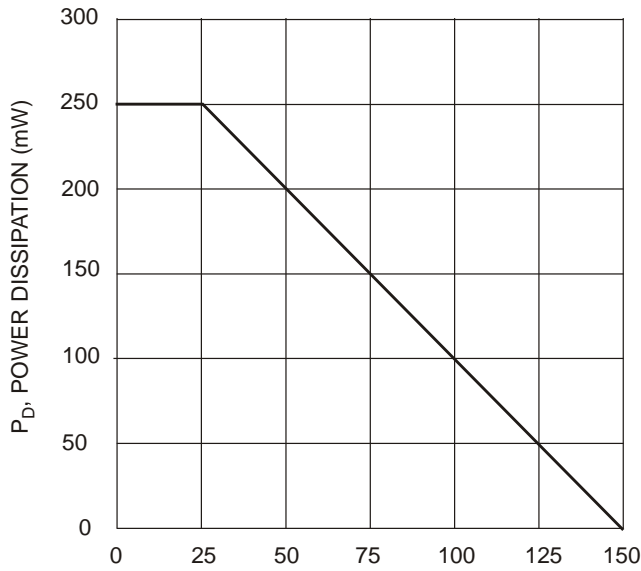
Characteristic	Symbol	Value	Unit
Power Dissipation	$P_d$	250	mW
Thermal Resistance, Junction to Ambient	$R_{JA}$	400	$^\circ\text{C}/\text{W}$

- Notes:
1. No purposefully added lead.
  2. 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).

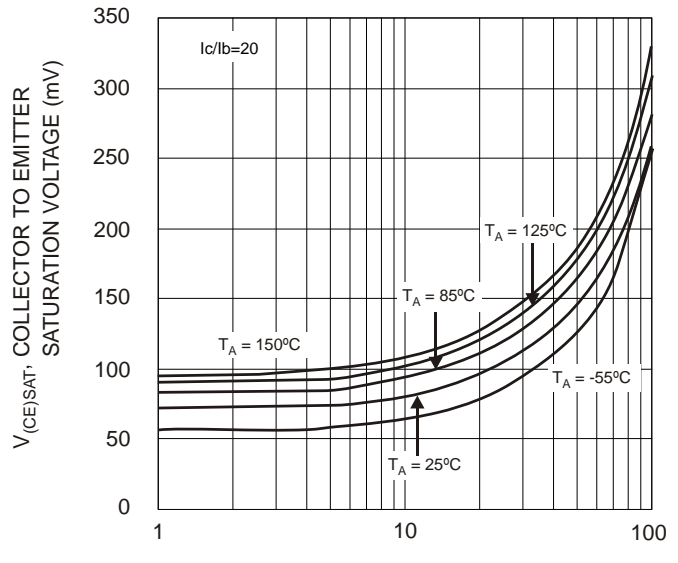
**Electrical Characteristics** @  $T_A = 25^\circ\text{C}$  unless otherwise specified

Characteristic	Symbol	Min	Typ	Max	Unit	Test Condition
Collector-Base Breakdown Voltage (Note 3)	$V_{(BR)CBO}$	-50	—	—	V	$I_C = 10\mu\text{A}, I_B = 0$
Collector-Emitter Breakdown Voltage (Note 3)	$V_{(BR)CEO}$	-45	—	—	V	$I_C = 10\text{mA}, I_B = 0$
Emitter-Base Breakdown Voltage (Note 3)	$V_{(BR)EBO}$	-5	—	—	V	$I_E = 1\mu\text{A}, I_C = 0$
DC Current Gain (Note 3)	$h_{FE}$	220	260	475	—	$V_{CE} = -5.0\text{V}, I_C = -2.0\text{mA}$
Collector-Emitter Saturation Voltage (Note 3)	$V_{CE(SAT)}$	—	90 250	-300 -650	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 (Note 3)	$V_{BE(SAT)}$	—	-700 -850	—	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 (Note 3)	$V_{BE(ON)}$	-600 —	-670 -710	-750 -820	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 (Note 3)	$I_{CBO}$	—	—	-15 -4.0	nA $\mu\text{A}$	$V_{CB} = -30\text{V}$ $V_{CB} = -30\text{V}, T_A = 150^\circ\text{C}$
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	$V_{CB} = -10\text{V}, f = 1.0\text{MHz}$

Note: 3. Short duration pulse test used to minimize self-heating effect.



$T_A$ , AMBIENT TEMPERATURE ( $^\circ\text{C}$ )  
Fig. 1 Power Derating Curve



$I_C$ , COLLECTOR CURRENT (mA)  
Fig. 2 Typical Collector-Emitter Saturation Voltage vs. Collector Current

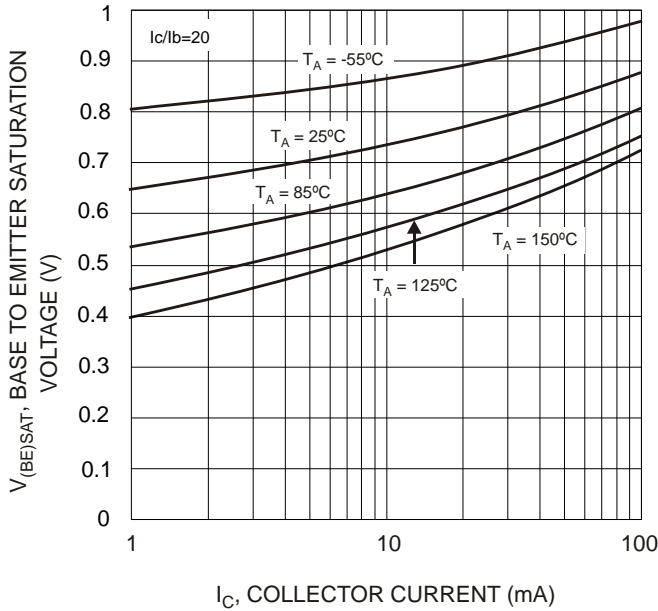


Fig. 3, Typical Base-Emitter Saturation Voltage vs. Collector Current

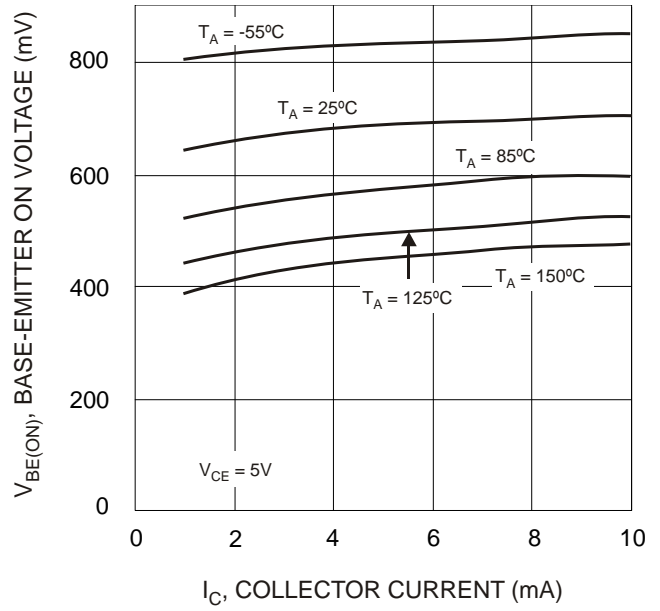


Fig. 4, Typical Base-Emitter Turn-On Voltage vs. Collector Current

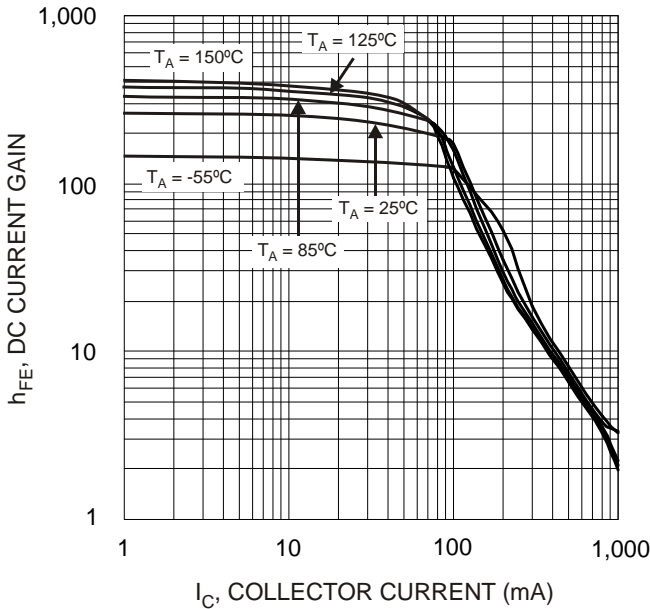


Fig. 5, Typical DC Current Gain vs. Collector Current

**Ordering Information** (Note 4)

Device	Packaging	Shipping
BC857BLP-7	DFN1006-3	3000/Tape & Reel

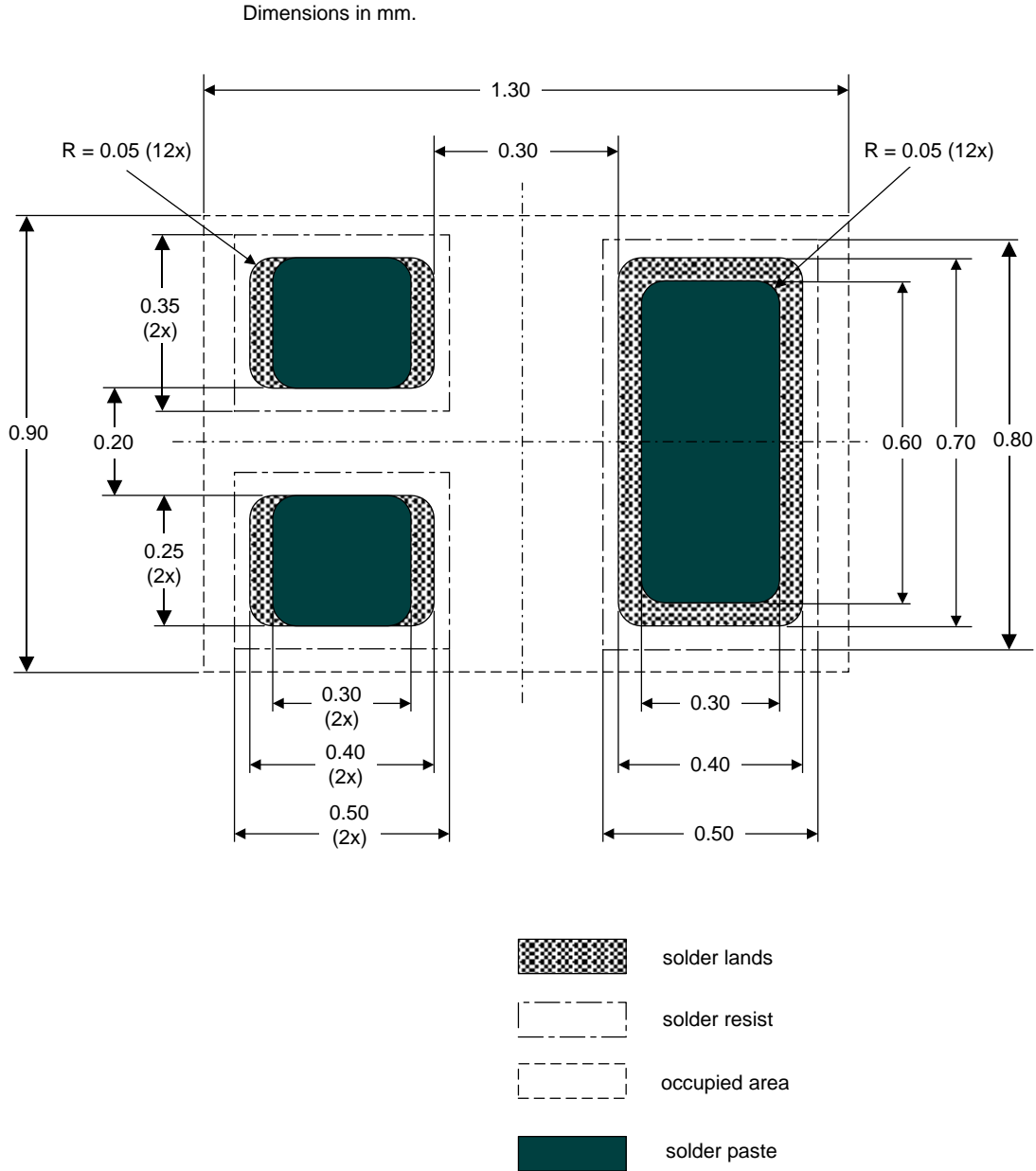
Note: 4. For Packaging Details: go to our website at <http://www.diodes.com/datasheets/ap02007.pdf>.

**Marking Information**



3W = Product Type Marking Code,  
Dot Denotes Collector Side

**Suggested Pad Layout**



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