

Features

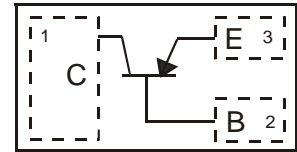
- Epitaxial Die Construction
- Complementary NPN Type Available (BC847BLP)
- Ultra-Small Leadless Surface Mount Package
- **Lead Free By Design/RoHS Compliant (Note 1)**
- **"Green" Device (Note 2)**
- **Qualified to AEC-Q101 Standards for High Reliability**

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 over Copper leadframe. Solderable per MIL-STD-202, Method 208
- Ordering Information: See Page 3
- Marking Information: See Page 3
- Weight: 0.0009 grams



BOTTOM VIEW



TOP VIEW
(Internal Schematic)

DFN1006-3

Maximum Ratings @T_A = 25°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

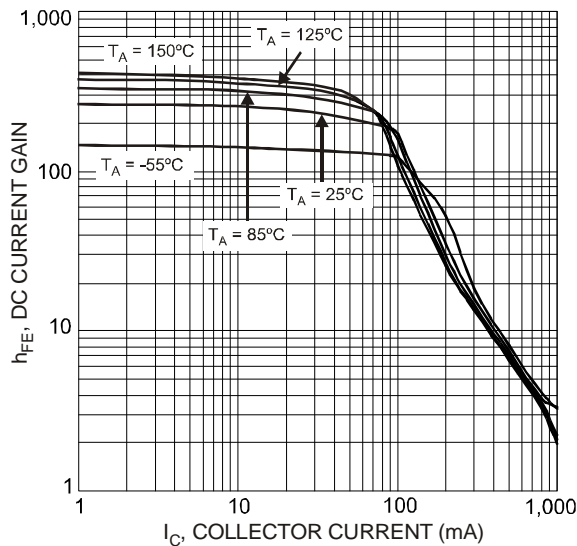
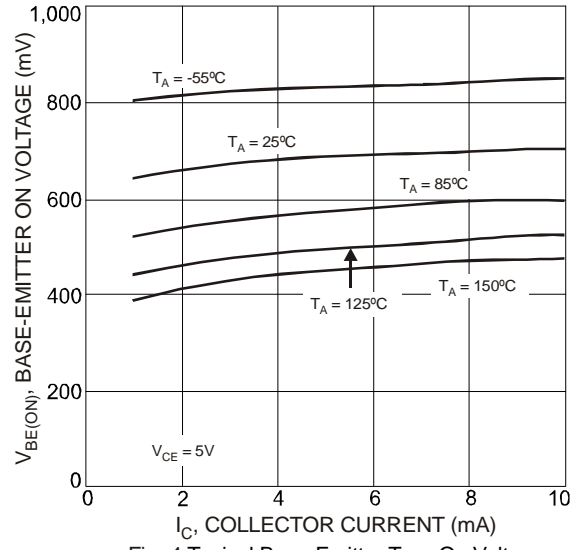
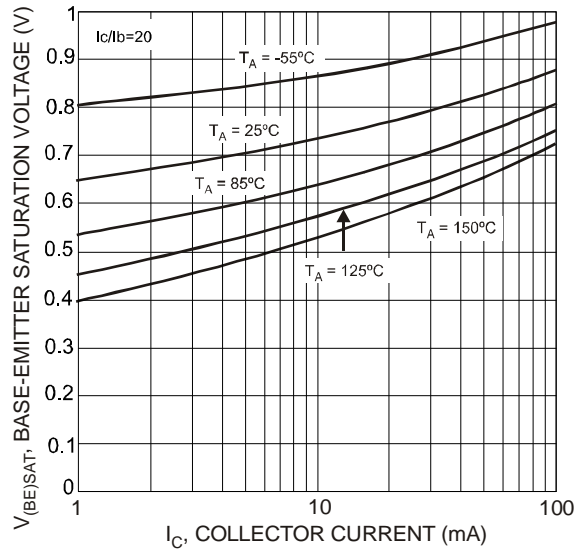
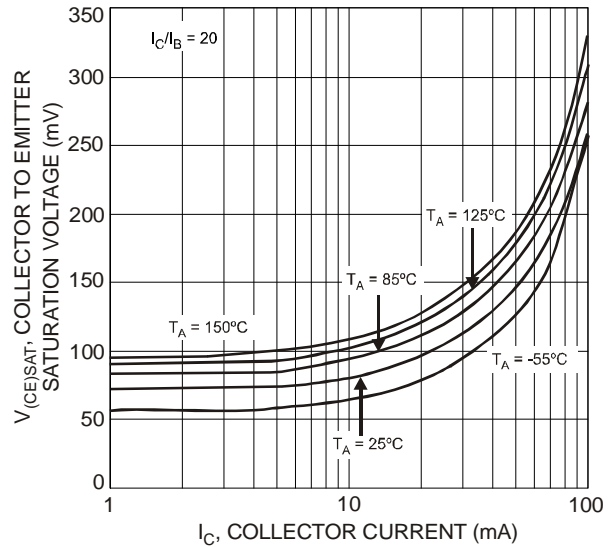
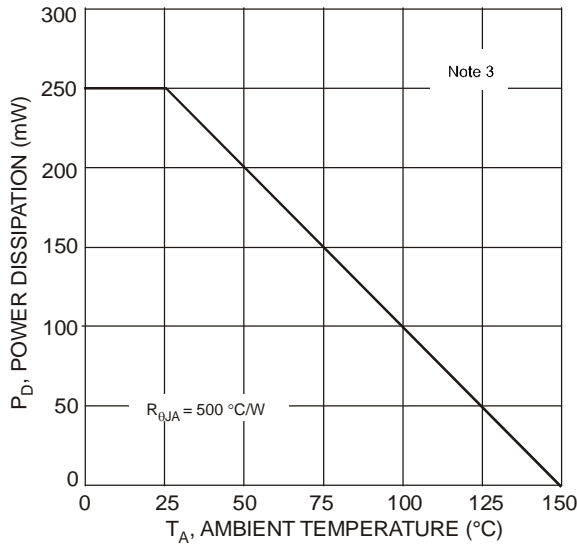
Thermal Characteristics

Characteristic	Symbol	Value	Unit
Power Dissipation (Note 3) @T _A = 25°C	P _D	250	mW
Thermal Resistance, Junction to Ambient Air (Note 3) @T _A = 25°C	R _{θJA}	500	°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 (Note 4)	Symbol	Min	Typ	Max	Unit	Test Condition
Collector-Base Breakdown Voltage	V _{(BR)CBO}	-50	—	—	V	I _C = 10μA, I _B = 0
Collector-Emitter Breakdown Voltage	V _{(BR)CEO}	-45	—	—	V	I _C = 10mA, I _B = 0
Emitter-Base Breakdown Voltage	V _{(BR)EBO}	-5	—	—	V	I _E = 1μA, I _C = 0
DC Current Gain	h _{FE}	220	260	475	—	V _{CE} = -5.0V, I _C = -2.0mA
Collector-Emitter Saturation Voltage	V _{CE(SAT)}	—	-90 -250	-300 -650	mV	I _C = -10mA, I _B = -0.5mA I _C = -100mA, I _B = -5.0mA
Base-Emitter Saturation Voltage	V _{BE(SAT)}	—	-700 -850	—	mV	I _C = -10mA, I _B = -0.5mA I _C = -100mA, I _B = -5.0mA
Base-Emitter Voltage	V _{BE(ON)}	-600	-670 -710	-750 -820	mV	V _{CE} = -5.0V, I _C = -2.0mA V _{CE} = -5.0V, I _C = -10mA
Collector-Cutoff Current	I _{CBO}	—	—	-15 -4.0	nA μA	V _{CB} = -30V V _{CB} = -30V, T _A = 150°C
Gain Bandwidth Product	f _T	100	—	—	MHz	V _{CE} = -5.0V, I _C = -10mA, f = 100MHz
Collector-Base Capacitance	C _{CBO}	—	3.0	—	pF	V _{CB} = -10V, f = 1.0MHz

- 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
 3. Device mounted on FR-4 PCB, pad layout as shown on page 3, or Diodes Inc. suggested pad layout document AP02001 on our website at <http://www.diodes.com/datasheets/ap02001.pdf>.
 4. Short duration pulse test used to minimize self-heating effect.

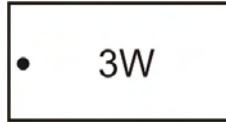


Ordering Information (Note 5)

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

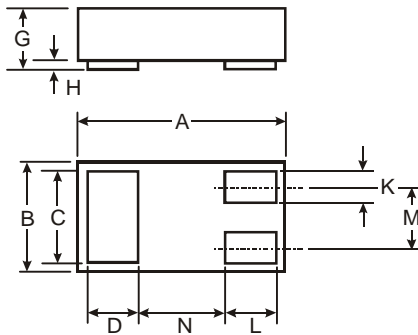
Notes: 5. For packaging details, go to our website at <http://www.diodes.com/datasheets/ap02007.pdf>.

Marking Information



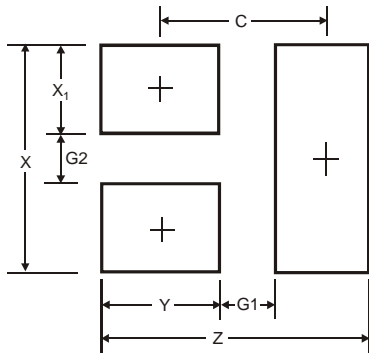
3W = Product Type Marking Code
Dot Denotes Collector, Pin 3

Mechanical Details



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			

Suggested Pad Layout



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

IMPORTANT NOTICE

Diodes Incorporated and its subsidiaries reserve the right to make modifications, enhancements, improvements, corrections or other changes without further notice to any product herein. Diodes Incorporated does not assume any liability arising out of the application or use of any product described herein; neither does it convey any license under its patent rights, nor the rights of others. The user of products in such applications shall assume all risks of such use and will agree to hold Diodes Incorporated and all the companies whose products are represented on our website, harmless against all damages.

LIFE SUPPORT

Diodes Incorporated products are not authorized for use as critical components in life support devices or systems without the expressed written approval of the President of Diodes Incorporated.