SPICE MODEL: BC857BLP

BC857BLP

PNP SMALL SIGNAL SURFACE MOUNT TRANSISTOR

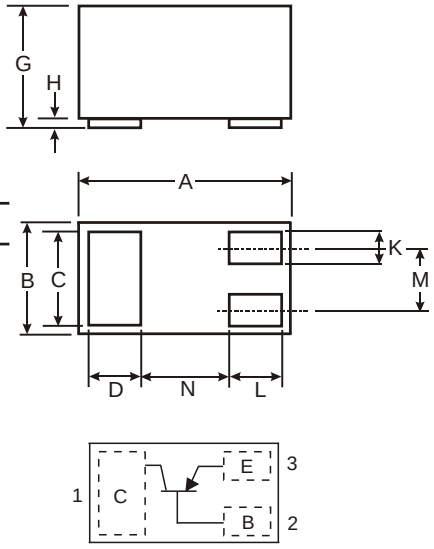
NEW PRODUCT

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 ¾ 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



TOP VIEW

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	¾	¾	0.35
N	¾	¾	0.40
All Dimensions in mm			

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
Operating and Storage Temperature Range	T_j, T_{STG}	-55 to +150	°C

Thermal Characteristics @ T_A = 25°C unless otherwise specified

Characteristic	Symbol	Value	Unit
Power Dissipation	P_d	250	mW
Thermal Resistance, Junction to Ambient	$R_{\theta JA}$	400	°C/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.

Electrical Characteristics @ T_A = 25°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 = 10μA, I_B = 0
Collector-Emitter Breakdown Voltage	(Note 3)	$V_{(BR)CEO}$	-45	—	—	V	I_C = 10mA, I_B = 0
Emitter-Base Breakdown Voltage	(Note 3)	$V_{(BR)EBO}$	-5	—	—	V	I_E = 1μA, I_C = 0
DC Current Gain	(Note 3)	h_{FE}	220	260	475	—	V_{CE} = -5.0V, I_C = -2.0mA
Collector-Emitter Saturation Voltage	(Note 3)	$V_{CE(SAT)}$	—	90 250	-300 -650	mV	I_C = -10mA, I_B = -0.5mA I_C = -100mA, I_B = -5.0mA
Base-Emitter Saturation Voltage	(Note 3)	$V_{BE(SAT)}$	— —	-700 -850	— —	mV	I_C = -10mA, I_B = -0.5mA I_C = -100mA, I_B = -5.0mA
Base-Emitter Voltage	(Note 3)	$V_{BE(ON)}$	-600 —	-670 -710	-750 -820	mV	V_{CE} = -5.0V, I_C = -2.0mA V_{CE} = -5.0V, I_C = -10mA
Collector-Cutoff Current	(Note 3)	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

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

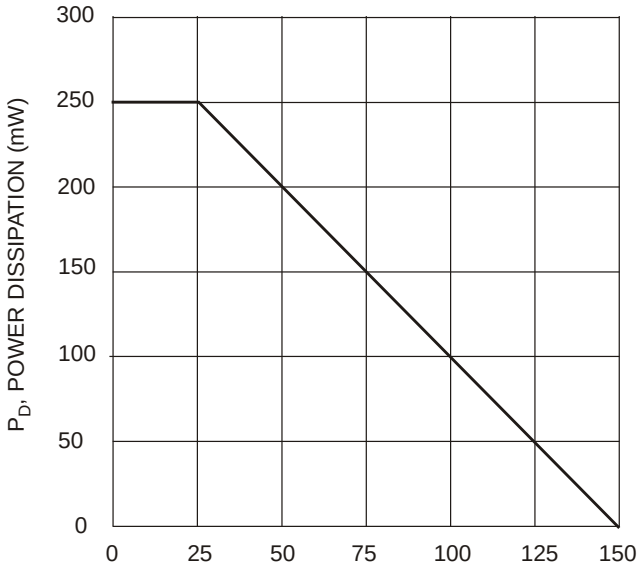


Fig. 1 Power Derating Curve

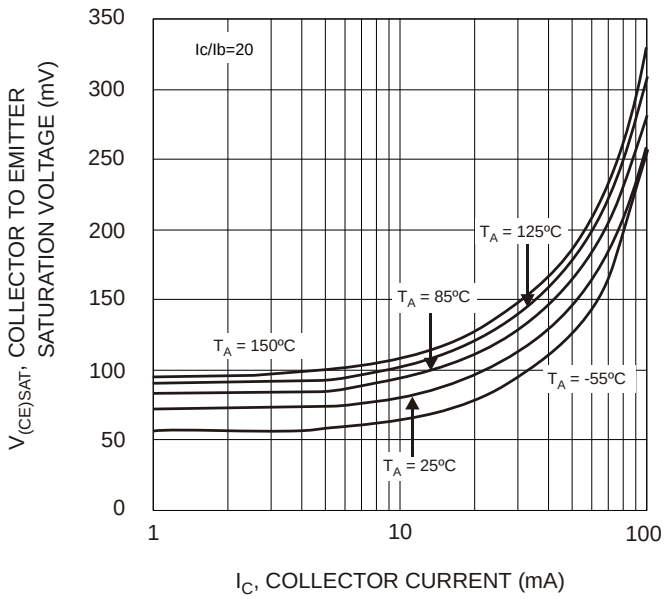


Fig. 2 Typical Collector-Emitter Saturation Voltage vs. Collector Current

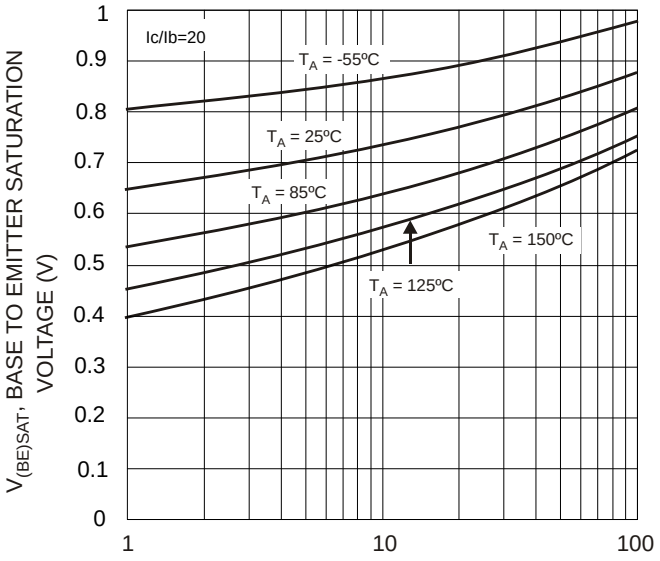


Fig. 3, Typical Base-Emitter Saturation Voltage vs. Collector Current

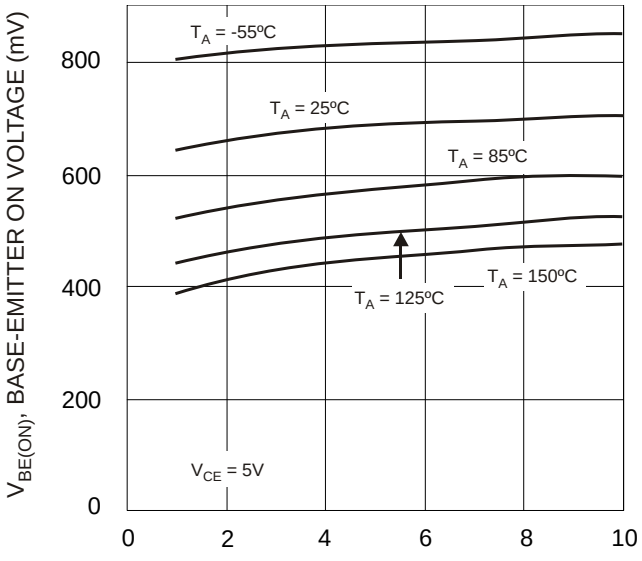


Fig. 4, Typical Base-Emitter Turn-On Voltage vs. Collector Current

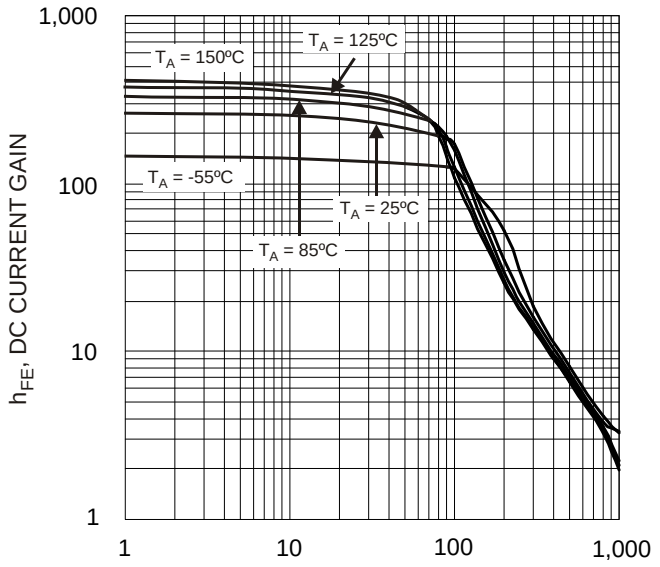


Fig. 5, Typical DC Current Gain vs. Collector Current

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

NEW PRODUCT

Suggested Pad Layout

Dimensions in mm.