

## Features

- Halogen Free. "Green" Device (Note 1)
- Moisture Sensitivity Level 1
- Epoxy Meets UL 94 V-0 Flammability Rating
- Lead Free Finish/RoHS Compliant ("P" Suffix Designates RoHS Compliant. See Ordering Information)

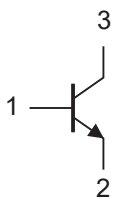
## Maximum Ratings @ 25°C Unless Otherwise Specified

- Operating Junction Temperature Range: -55°C to +150°C
- Storage Temperature Range: -55°C to +150°C
- Maximum Thermal Resistance: 833°C/W Junction to Ambient

Parameter	Symbol	Rating	Unit
Collector-Base Voltage BC846AL3-BC846BL3 BC847AL3-BC847CL3 BC848AL3-BC848CL3	$V_{CBO}$	80 50 30	V
Collector-Emitter Voltage BC846AL3-BC846BL3 BC847AL3-BC847CL3 BC848AL3-BC848CL3	$V_{CEO}$	65 45 30	V
Emitter-Base Voltage	$V_{EBO}$	6	V
Collector Current	$I_C$	100	mA
Collector Power Dissipation	$P_C$	150	mW

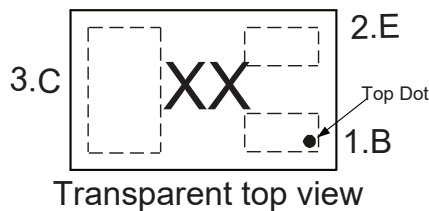
Note: 1. Halogen free "Green" products are defined as those which contain <900ppm romine, <900ppm chlorine (<1500ppm total Br + Cl) and <1000ppm antimony compounds.

### Internal Structure



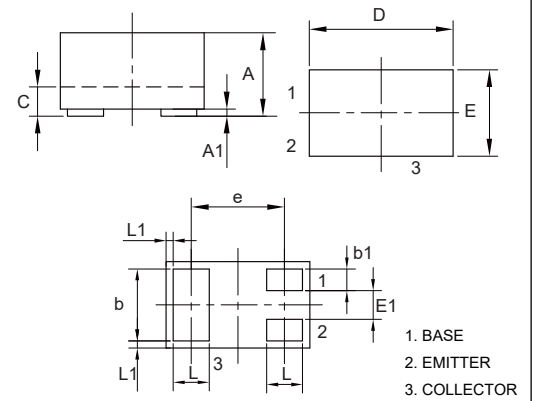
- 1.BASE  
2.EMITTER  
3.COLLECTOR

### Marking Code



# NPN Plastic-Encapsulate Transistors

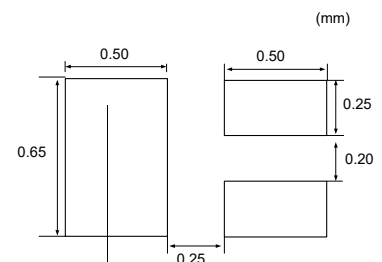
## DFN1006-3



### DIMENSIONS

DIM	INCHES		MM		NOTE
	MIN	MAX	MIN	MAX	
A	0.018	0.022	0.45	0.55	
A1	0.000	0.002	0.00	0.05	
b	0.018	0.022	0.45	0.55	
b1	0.004	0.008	0.10	0.20	
c	0.005	0.007	0.12	0.18	
D	0.037	0.042	0.95	1.075	
E	0.022	0.026	0.55	0.675	
E1	0.006	0.010	0.15	0.25	
e	0.026		0.65		TYP.
L	0.008	0.012	0.20	0.30	
L1	0.0002		0.05		TYP.

### Suggested Solder Pad Layout



Part NO.	BC846AL3	BC846BL3	BC847AL3	BC847BL3	BC847CL3	BC848AL3	BC848BL3	BC848CL3
Marking code	1A	1B	1E	1F	1G	1J	1K	1L

Electrical Characteristics @  $T_A=25^\circ\text{C}$  Unless Otherwise Specified

Parameter	Symbol	Min	Typ	Max	Units	Conditions
Collector-Base Breakdown Voltage BC846AL3-BC846BL3 BC847AL3-BC847CL3 BC848AL3-BC848CL3	$V_{(BR)CBO}$	80 50 30			V	$I_C=10\mu\text{A}, I_E=0$
Collector-Emitter Breakdown Voltage BC846AL3-BC846BL3 BC847AL3-BC847CL3 BC848AL3-BC848CL3	$V_{(BR)CEO}$	65 45 30			V	$I_C=10\text{mA}, I_B=0$
Emitter-Base Breakdown Voltage BC846AL3-BC846BL3 BC847AL3-BC847CL3 BC848AL3-BC848CL3	$V_{(BR)EBO}$	6 6 5			V	$I_E=10\mu\text{A}, I_C=0$
Collector Cut-off Current	$I_{CBO}$			15	nA	$V_{CB}=30\text{V}, I_E=0$
Emitter Cutoff Current	$I_{EBO}$			100	nA	$V_{EB}=5\text{V}, I_C=0$
Emitter Cutoff Current	$I_{CEO}$			1	mA	$V_{CE}=30\text{V}, I_B=0$
DC Current Gain BC846AL3/BC847AL3/BC848AL3 BC846BL3/BC847BL3/BC848BL3 BC847CL3/BC848CL3	$h_{FE(1)}$		110 250 480			$V_{CE}=5\text{V}, I_C=10\mu\text{A}$
DC Current Gain BC846AL3/BC847AL3/BC848AL3 BC846BL3/BC847BL3/BC848BL3 BC847CL3/BC848CL3	$h_{FE(2)}$		110 200 420	220 450 800		$V_{CE}=5\text{V}, I_C=2\text{mA}$
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$		0.09 0.2	0.3 0.6	V	$I_C=10\text{mA}, I_B=0.5\text{mA}$ $I_C=100\text{mA}, I_B=5\text{mA}$
Base-Emitter Saturation Voltage	$V_{BE(sat)}$		0.7 0.9	0.9 1.1	V	$I_C=10\text{mA}, I_B=0.5\text{mA}$ $I_C=100\text{mA}, I_B=5\text{mA}$
Base-Emitter On Voltage	$V_{BE(on)}$	0.58	0.66	0.7 0.77	V	$V_{CE}=5\text{V}, I_C=2\text{mA}$ $V_{CE}=5\text{V}, I_C=10\text{mA}$
Transition Frequency	$f_T$	100			MHZ	$V_{CE}=5\text{V}, I_C=10\text{mA}, f=100\text{MHz}$

**Curve Characteristics**

Fig. 1 - Static Characteristics

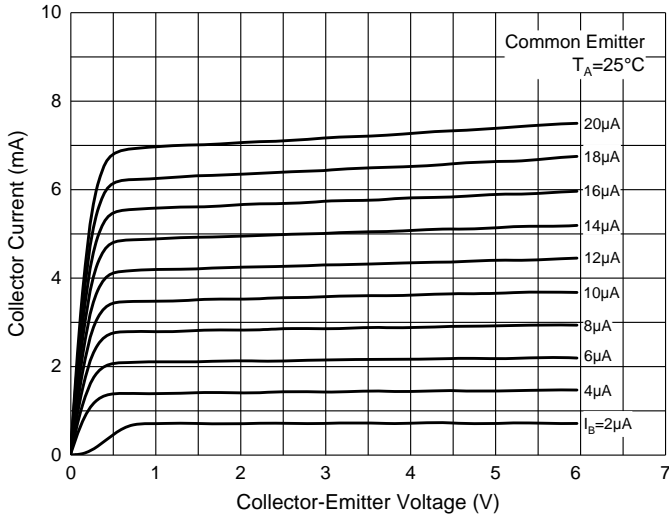


Fig. 2 - DC Current Gain Characteristics

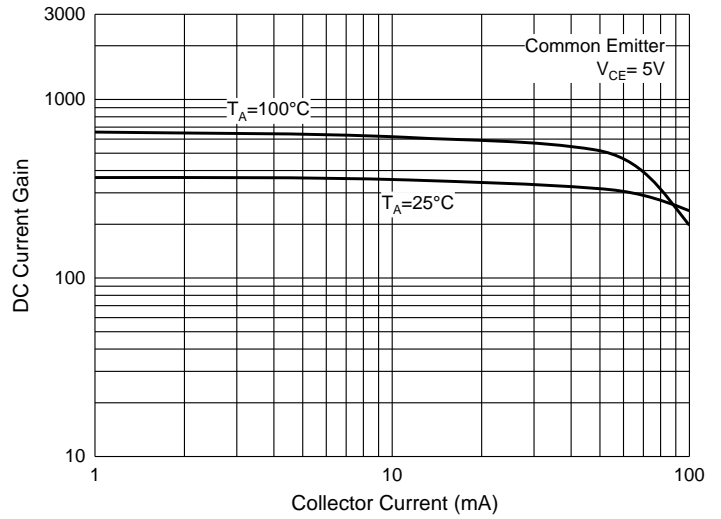


Fig. 3 - Base-Emitter Saturation Voltage Characteristics

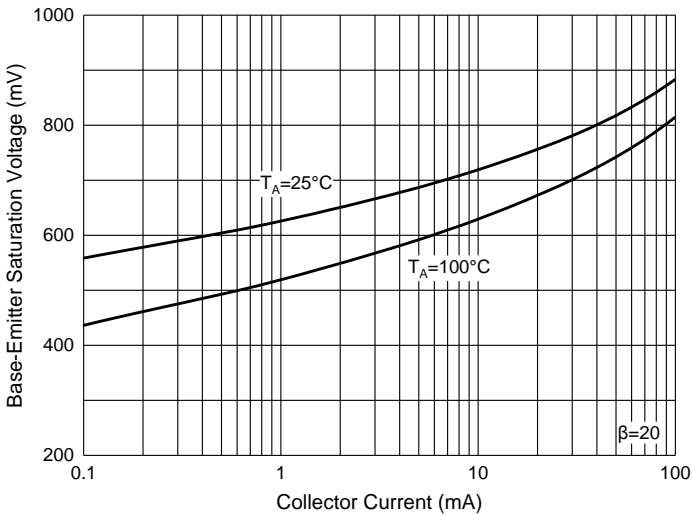


Fig. 4 - Collector-Emitter Saturation Voltage Characteristics

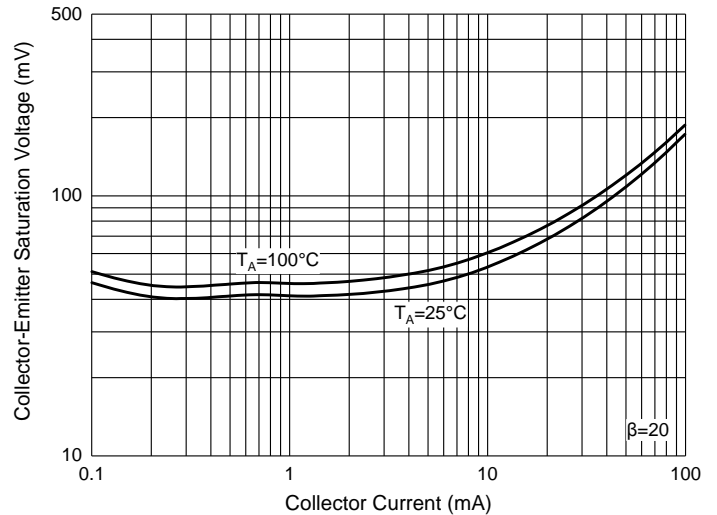


Fig. 5 - Base-Emitter Voltage Characteristics

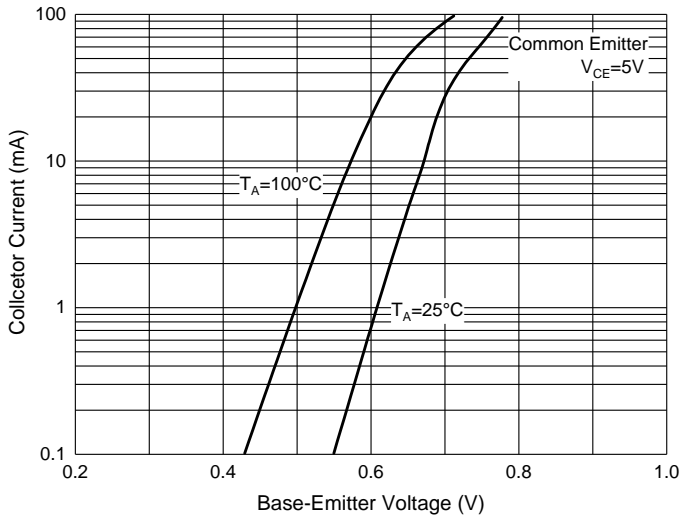
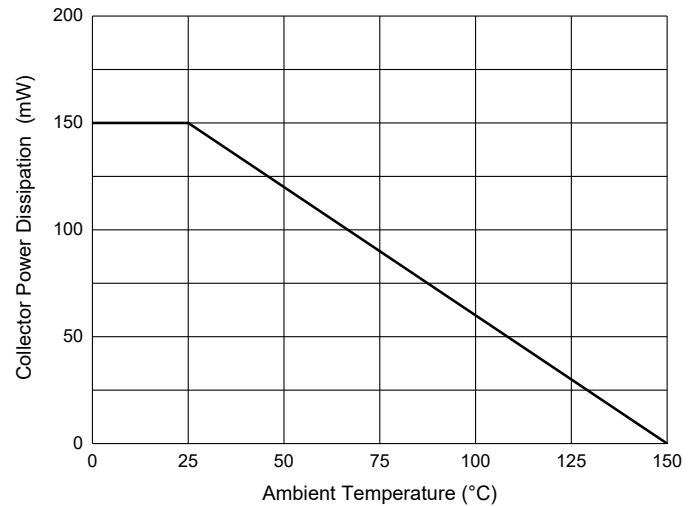


Fig. 6 - Collector Power Derating Curve



## Ordering Information

Device	Packing
Part Number-TP	Tape&Reel: 10Kpcs/Reel

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