

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)

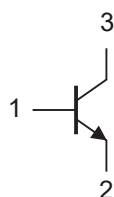
Maximum Ratings @ 25°C Unless Otherwise Specified

- 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

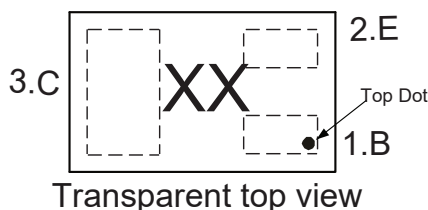
Note: 1. Halogen free "Green" products are defined as those which contain <900ppm romine, <900ppm chlorine (<1500ppm total Br + Cl) and <1000ppm antimony compounds.

Internal Structure



1.BASE
2.EMITTER
3.COLLECTOR

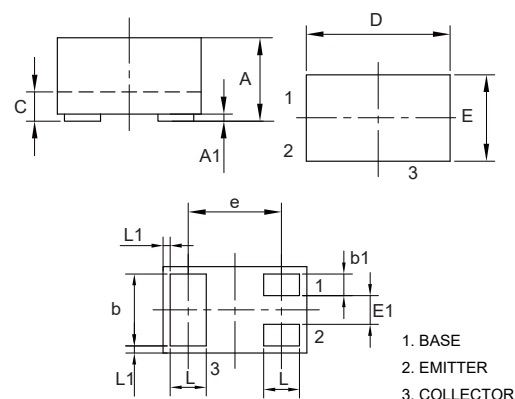
Marking Code



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

NPN Plastic-Encapsulate Transistors

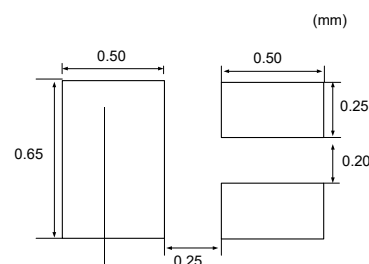
DFN1006-3



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



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	0.3	V	$I_C=10\text{mA}$, $I_B=0.5\text{mA}$
			0.2	0.6		$I_C=100\text{mA}$, $I_B=5\text{mA}$
Base-Emitter Saturation Voltage	$V_{BE(sat)}$		0.7	0.9	V	$I_C=10\text{mA}$, $I_B=0.5\text{mA}$
			0.9	1.1		$I_C=100\text{mA}$, $I_B=5\text{mA}$
Base-Emitter On Voltage	$V_{BE(on)}$	0.58	0.66	0.7	V	$V_{CE}=5\text{V}$, $I_C=2\text{mA}$
				0.77		$V_{CE}=5\text{V}$, $I_C=10\text{mA}$
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

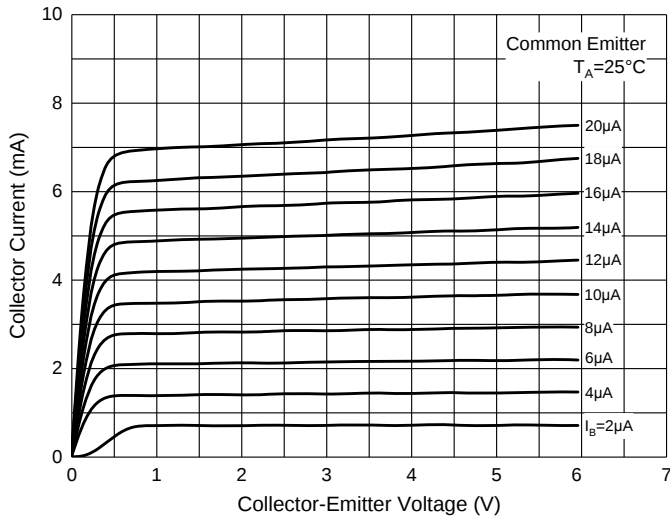


Fig. 2 - DC Current Gain Characteristics

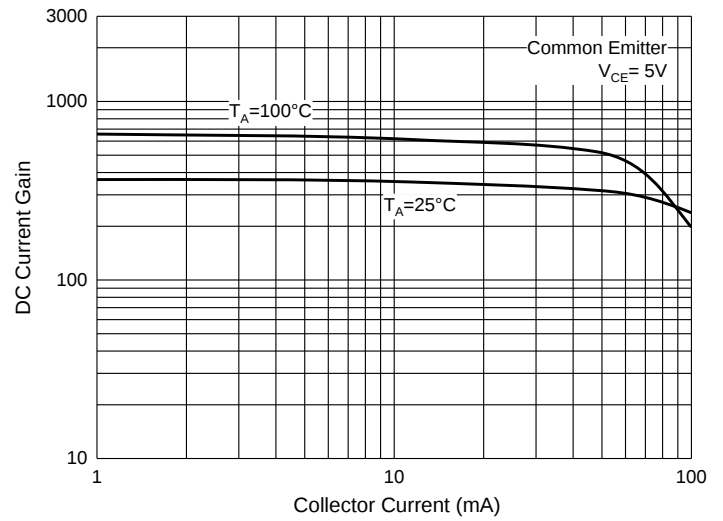


Fig. 3 - Base-Emitter Saturation Voltage Characteristics

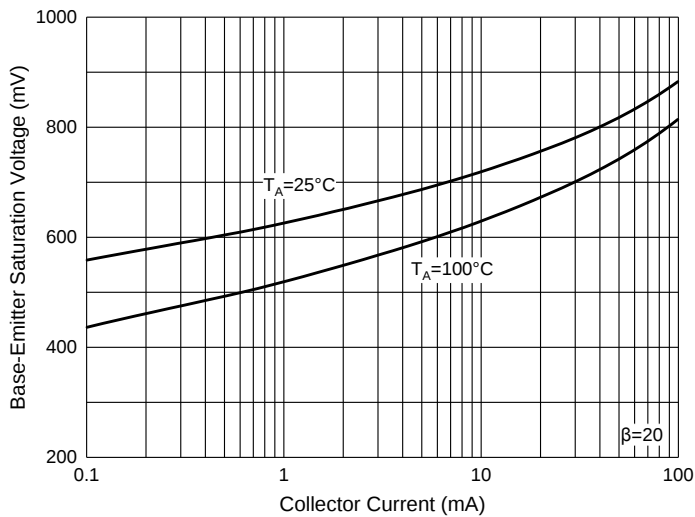


Fig. 4 - Collector-Emitter Saturation Voltage Characteristics

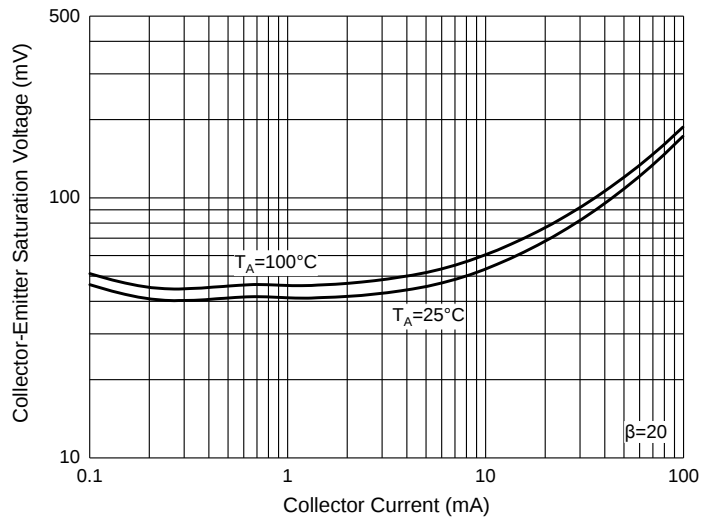


Fig. 5 - Base-Emitter Voltage Characteristics

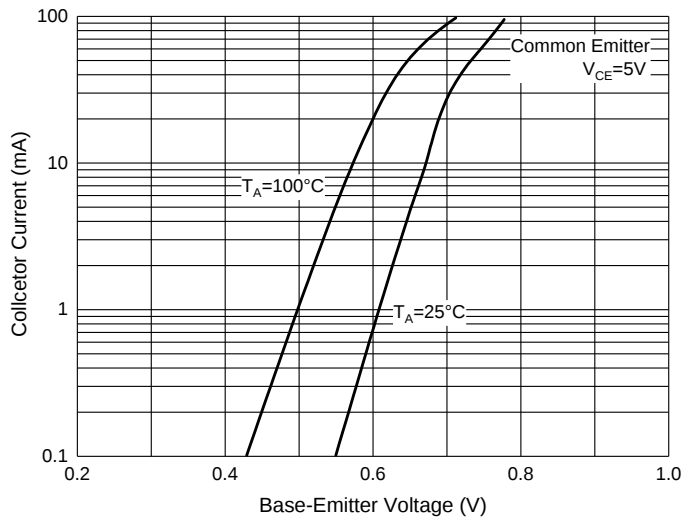
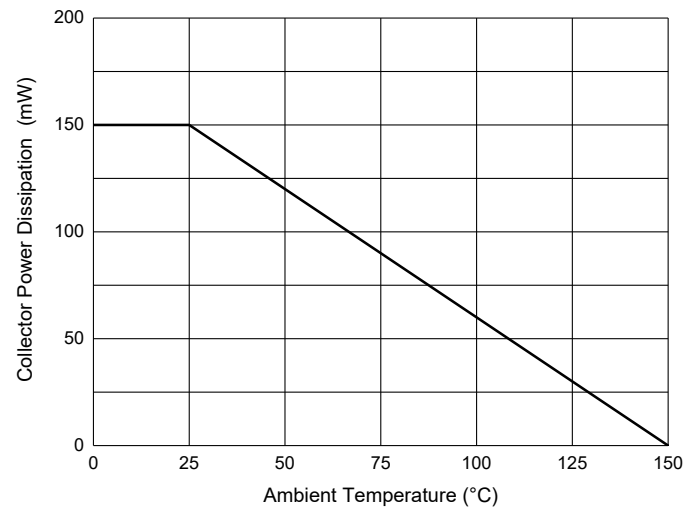


Fig. 6 - Collector Power Derating Curve



Ordering Information

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

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