



BC847BVC

NPN DUAL SMALL SIGNAL SURFACE MOUNT TRANSISTOR

Features

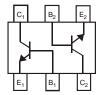
- BV_{CEO} > 45V
- Ultra-Small Surface Mount Package
- Totally Lead-Free & Fully RoHS Compliant (Notes 1 & 2)
- Halogen and Antimony Free. "Green" Device (Note 3)
- Qualified to AEC-Q101 Standards for High Reliability

Mechanical Data

- Case: SOT563
- Case Material: Molded Plastic, "Green" Molding Compound. UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020
- Terminals: Finish Matte Tin Finish. Solderable per MIL-STD-202, Method 208 (a)
- Weight 0.002 grams (Approximate)







Top View

Bottom View

Device Schematic

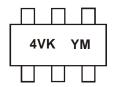
Ordering Information (Note 4)

Ī	Product	Compliance	Marking	Reel Size (inches)	Tape Width (mm)	Quantity per Reel
	BC847BVC-7	AEC-Q101	4VK	7	8mm	3,000

Notes:

- 1. No purposely added lead. Fully EU Directive 2002/95/EC (RoHS) & 2011/65/EU (RoHS 2) compliant.
- 2. See http://www.diodes.com/quality/lead_free.html for more information about Diodes Incorporated's definitions of Halogen- and Antimony-free, "Green" and Lead-free.
- 3. Halogen- and Antimony-free "Green" products are defined as those which contain <900ppm bromine, <900ppm chlorine (<1500ppm total Br + Cl) and <1000ppm antimony compounds.
- 4. For packaging details, go to our website at http://www.diodes.com/products/packages.html.

Marking Information



4VK = Product Type Marking Code YM = Date Code Marking Y = Year (ex: E = 2017) M = Month (ex: 9 = September)

Date Code Key

Year	2017	2018	2019	2020	202	21 20)22	2023	2024	2025	2026	2027
Code	E	F	G	Н	I		J	K	L	M	Ν	0
Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Code	1	2	3	4	5	6	7	8	9	0	N	D



Absolute 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}	6.0	V
Collector Current	lc	100	mA

Thermal Characteristics

Characteristic	Symbol	Value	Unit
Power Dissipation (Note 5)	P_{D}	150	mW
Thermal Resistance, Junction to Ambient (Note 5)	$R_{ hetaJA}$	833	°C/W
Operating and Storage Temperature Range	T _J , T _{STG}	-55 to +150	°C

ESD Ratings (Note 6)

Characteristic	Symbol	Value	Unit	JEDEC Class
Electrostatic Discharge - Human Body Model	ESD HBM	4,000	V	3A
Electrostatic Discharge - Machine Model	ESD MM	200	V	В

Notes: 5. Device mounted on FR-4 PCB, 1 inch x 0.85 inch x 0.062 inch.

6. Refer to JEDEC specification JESD22-A114 and JESD22-A115.



Thermal Characteristics and Derating Information

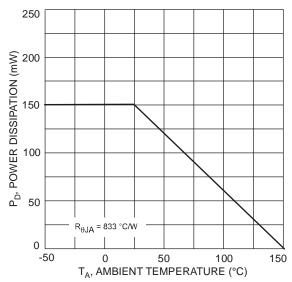


Fig. 1 Power Dissipation vs. Ambient Temperature

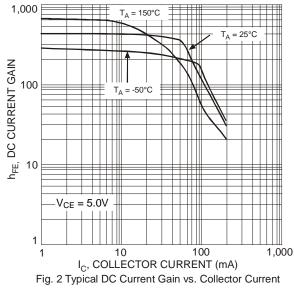
Electrical Characteristics (@T_A = +25°C, unless otherwise specified.)

Characteristic		Symbol	Min	Тур	Max	Unit	Test Condition
Collector-Base Breakdown Voltage			50	_	_	V	$I_C = 10 \mu A, I_B = 0$
Collector-Emitter Breakdown Voltage			45	_	_	V	$I_C = 10 \text{mA}, I_B = 0$
Emitter-Base Breakdown Voltage		$V_{(BR)EBO}$	6	_	_	V	$I_E = 1\mu A, I_C = 0$
DC Current Gain	(Note 7)	h _{FE}	200	290	450	_	$V_{CE} = 5.0V, I_{C} = 2.0mA$
Collector-Emitter Saturation Voltage	(Note 7)	V _{CE(SAT)}	1		100 300	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 7)	V _{BE(SAT)}	1	700 900	_	mV	$I_C = 10mA$, $I_B = 0.5mA$ $I_C = 100mA$, $I_B = 5.0mA$
Base-Emitter Voltage		V_{BE}	580 —	660 —	700 770	mV	$V_{CE} = 5.0V, I_{C} = 2.0mA$ $V_{CE} = 5.0V, I_{C} = 10mA$
Collector-Emitter Cutoff Current		I _{CBO}	1		15 5.0	nΑ μΑ	V _{CB} = 30V V _{CB} = 30V, T _A = +150°C
Gain Bandwidth Product		f⊤	100	1	_	MHz	$V_{CE} = 5.0V$, $I_{C} = 10mA$, $f = 100MHz$
Output Capacitance	•	C _{OBO}		_	4.5	pF	V _{CB} = 10V, f = 1.0MHz
Noise Figure		NF	_	_	10	dB	V_{CE} = 5V, R_S = 2.0k Ω , f = 1.0kHz, BW = 200Hz

Note: 7. Measured under pulsed conditions. Pulse width $\leq 300 \mu s$. Duty cycle $\leq 2\%$.



Typical Electrical Characteristics (@TA = +25°C, unless otherwise specified.)



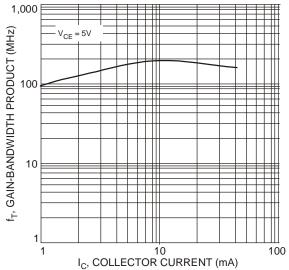


Fig. 4 Typical Gain-Bandwidth Product vs. Collector Current

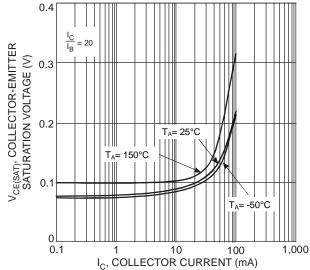


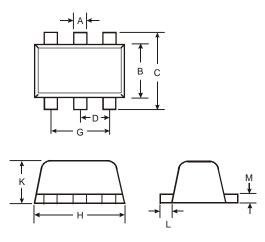
Fig. 3 Typical Collector Emitter Saturation Voltage vs. Collector Current



Package Outline Dimensions

Please see http://www.diodes.com/package-outlines.html for the latest version.

SOT563

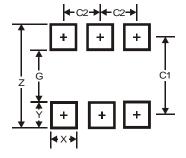


SOT563							
Dim	Min	Max	Тур				
Α	0.15	0.30	0.20				
В	1.10	1.25	1.20				
С	1.55	1.70	1.60				
D	-	-	0.50				
G	0.90	1.10	1.00				
Н	1.50	1.70	1.60				
K	0.55	0.60	0.60				
L	0.10	0.30	0.20				
M	0.10	0.18	0.11				
All	All Dimensions in mm						

Suggested Pad Layout

Please see http://www.diodes.com/package-outlines.html for the latest version.

SOT563



Dimensions	Value (in mm)
Z	2.2
G	1.2
Х	0.375
Y	0.5
C1	1.7
C2	0.5



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