BC847BV

NPN DUAL SMALL SIGNAL SURFACE MOUNT TRANSISTOR

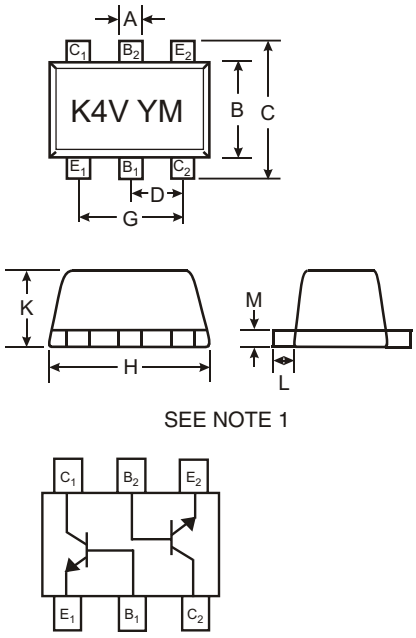
NEW PRODUCT

Features

- Epitaxial Die Construction
- Complementary PNP Type Available (BC857BV)
- Ultra-Small Surface Mount Package
- Lead Free Plating

Mechanical Data

- Case: SOT-563, Molded Plastic
- Case material - UL Flammability Rating Classification 94V-0
- Moisture sensitivity: Level 1 per J-STD-020A
- Terminals: Solderable per MIL-STD-202, Method 208
- Terminal Connections: See Diagram
- Terminals: Finish - Matte Tin (Note 2) Solderable per MIL-STD-202, Method 208
- Marking (See Page 2): K4V
- Ordering & Date Code Information: See Page 2
- Weight: 0.002 grams (approx.)



SOT-563			
Dim	**Min**	**Max**	**Typ**
A	0.15	0.30	0.25
B	1.10	1.25	1.20
C	1.55	1.70	1.60
D		0.50	
G	0.90	1.10	1.00
H	1.50	1.70	1.60
K	0.56	0.60	0.60
L	0.10	0.30	0.20
M	0.10	0.18	0.11
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}	6.0	V
Collector Current	I_C	100	mA
Power Dissipation (Note 3)	P_d	150	mW
Thermal Resistance, Junction to Ambient (Note 3)	$R_{\theta JA}$	833	°C/W
Operating and Storage Temperature Range	T_j, T_{STG}	-55 to +150	°C

Notes:
1. Package is non-polarized. Parts may be on reel in orientation illustrated, 180° rotated, or mixed (both ways).
2. If lead-bearing terminal plating is required, please contact your Diodes Inc. sales representative for availability and minimum order details.
3. Device mounted on FR-4 PCB, 1 inch x 0.85 inch x 0.062 inch; pad layout as shown on Diodes Inc. suggested pad layout document AP02001, which can be found on our website at http://www.diodes.com/datasheets/ap02001.pdf.

NEW PRODUCT

Electrical Characteristics @ $T_A = 25°C$ unless otherwise specified

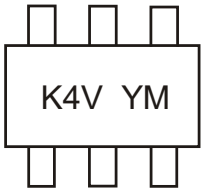
Characteristic		Symbol	Min	Typ	Max	Unit	Test Condition
Collector-Base Breakdown Voltage	(Note 4)	$V_{(BR)CBO}$	50	—	—	V	$I_C = 10\mu A$, $I_B = 0$
Collector-Emitter Breakdown Voltage	(Note 4)	$V_{(BR)CEO}$	45	—	—	V	$I_C = 10mA$, $I_B = 0$
Emitter-Base Breakdown Voltage	(Note 4)	$V_{(BR)EBO}$	6	—	—	V	$I_E = 1\mu A$, $I_C = 0$
DC Current Gain	(Note 4)	h_{FE}	200	290	450	—	$V_{CE} = 5.0V$, $I_C = 2.0mA$
Collector-Emitter Saturation Voltage	(Note 4)	$V_{CE(SAT)}$	—	—	100 300	mV	$I_C = 10mA$, $I_B = 0.5mA$ $I_C = 100mA$, $I_B = 5.0mA$
Base-Emitter Saturation Voltage	(Note 4)	$V_{BE(SAT)}$	—	700 900	—	mV	$I_C = 10mA$, $I_B = 0.5mA$ $I_C = 100mA$, $I_B = 5.0mA$
Base-Emitter Voltage	(Note 4)	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	(Note 4)	I_{CBO} I_{CBO}	—	—	15 5.0	nA μA	$V_{CB} = 30V$ $V_{CB} = 30V$, $T_A = 150°C$
Gain Bandwidth Product		f_T	100	—	—	MHz	$V_{CE} = 5.0V$, $I_C = 10mA$, $f = 100MHz$
Output Capacitance		C_{OBO}	—	—	4.5	pF	$V_{CB} = 10V$, $f = 1.0MHz$
Noise Figure		NF	—	—	10	dB	$V_{CE} = 5V$, $R_S = 2.0k\Omega$, $f = 1.0kHz$, $BW = 200Hz$

Ordering Information (Note 5)

Device	Packaging	Shipping
BC847BV-7	SOT-563	3000/Tape & Reel

Notes: 4. Short duration pulse test used to minimize self-heating effect.
5. For Packaging Details, go to our website at http://www.diodes.com/datasheets/ap02007.pdf.

Marking Information



K4V = Product Type Marking Code
YM = Date Code Marking
Y = Year (ex: P = 2003)
M = Month (ex: 9 = September)

Date Code Key

Year	2003	2004	2005	2006	2007	2008	2009
Code	P	R	S	T	U	V	W

Month	Jan	Feb	March	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Code	1	2	3	4	5	6	7	8	9	O	N	D

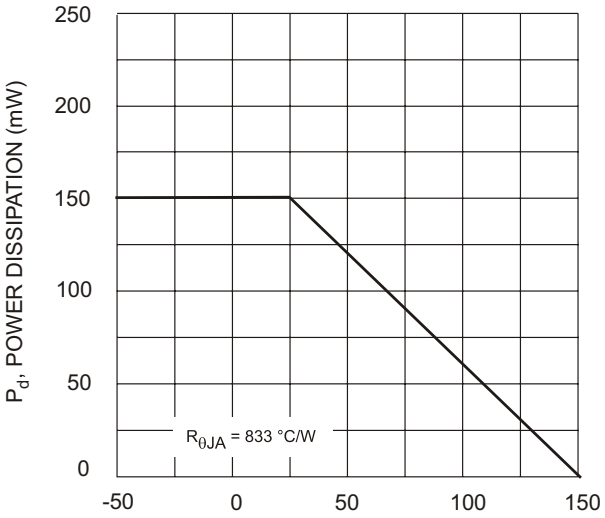


Fig. 1, Derating Curve - Total

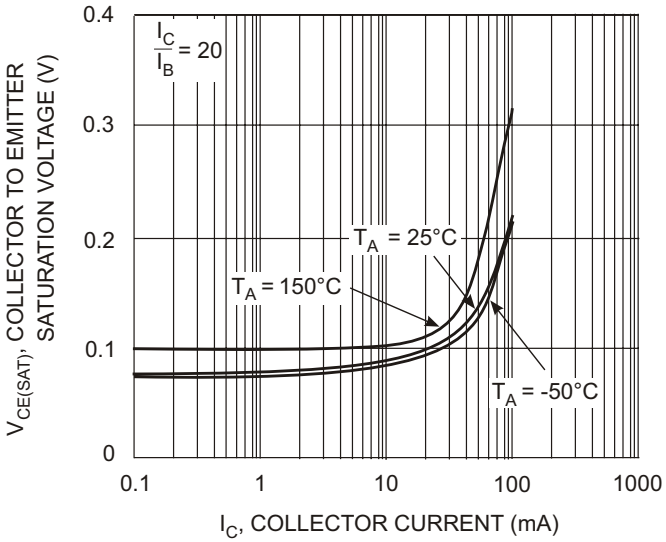


Fig. 2, Collector Emitter Saturation Voltage vs. Collector Current

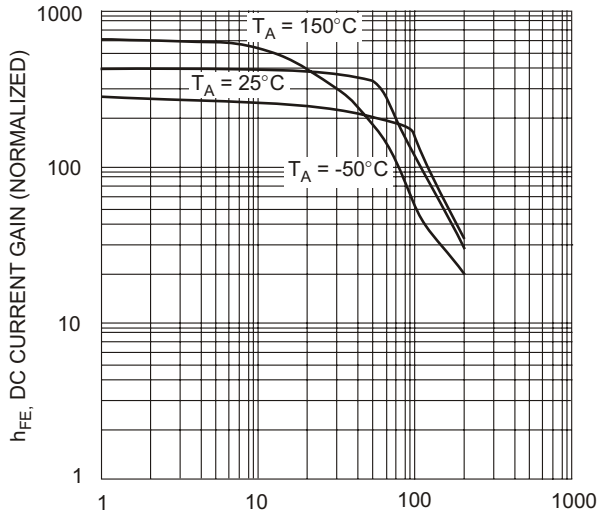


Fig. 3, DC Current Gain vs Collector Current

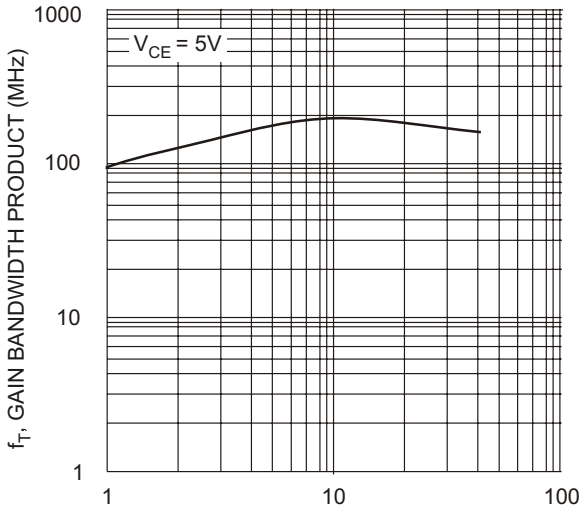


Fig. 4, Gain Bandwidth Product vs Collector Current

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